

8 Requirements for Support of RRM

8.1 General

Void.

8.2 Idle Mode Tasks

8.2.1 RF Cell Selection Scenario

8.2.1.1 Introduction

After a UE has switched on and a PLMN has been selected, the Cell selection process takes place, as described in TS 25.304. This process allows the UE to select a suitable cell where to camp on in order to access available services. In this process the UE can use stored information (*Stored information cell selection*) or not (*Initial cell selection*).

8.2.2 Cell Re-Selection

8.2.2.1 Scenario 1: Cell re-selection to intra frequency TDD cell

8.2.2.1.1 Definition and applicability

8.2.2.1.1.1 3,84 Mcps TDD Option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on the new cell.

The requirements and this test apply to the 3,84 Mcps TDD UE.

8.2.2.1.1.2 1,28 Mcps TDD Option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send SYNCH-UL sequence in the UpPTS for sending the RRC CONNECTION REQUEST to perform a Location Registration on cell 2.

This test is applicable to 1,28 Mcps TDD UE.

8.2.2.1.1.3 7,68 Mcps TDD Option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on the new cell.

The requirements and this test apply to the 7,68 Mcps TDD UE.

8.2.2.1.2 Minimum requirement

8.2.2.1.2.1 3,84 Mcps TDD Option

The cell re-selection delay shall be less than 8 s when the DRX cycle length is 1,28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateTDD}} + T_{\text{SI}}$, where:

$T_{\text{evaluateTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to table 4.1 in clause 4.2.2.7 in [2].

T_{SI} Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.1.

8.2.2.1.2.2 1,28 Mcps TDD Option

The cell re-selection delay shall be less than 8 s when the DRX cycle length is 1,28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95%.

NOTE:

The cell re-selection delay can be expressed as: $T_{evaluateNTDD} + T_{SI}$, where:

$T_{evaluateNTDD}$: A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluateNTDD}$ of 6.4s according to table 4.1A in clause 4.2 in [2].

T_{SI} : Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.1.

8.2.2.1.2.3 7,68 Mcps TDD Option

The cell re-selection delay shall be less than 8 s when the DRX cycle length is 1,28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95%.

NOTE:

The cell re-selection delay can be expressed as: $T_{evaluateTDD} + T_{SI}$, where:

$T_{evaluateTDD}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluateTDD}$ of 6.4s according to table 4.1B in clause 4.2.2.7.3 in [2].

T_{SI} Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.1.

8.2.2.1.3 Test purpose

This test is to verify the requirement for the cell re-selection delay in the single carrier case

8.2.2.1.4 Method of test

8.2.2.1.4.1 3,84 Mcps TDD Option

8.2.2.1.4.1.1 Initial conditions

This scenario implies the presence of 1 carrier and 6 cells as given in table 8.2.2.1.1 and table 8.2.2.1.2. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.1.1: General test parameters for Cell Re-selection to intra-frequency TDD cell

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		s	1,28	The value shall be used for all cells in the test.
DRX cycle length		s	1,28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.2.2.1.2: Cell re-selection single carrier to intra-frequency TDD cell

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Timeslot	Unit	Cell 4				Cell 5				Cell 6			
		0		8		0		8		0		8	
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/3,8 4 MHz	-70											
Propagation Condition		AWGN											

8.2.2.1.4.1.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST messages from the UE.
- b) The UE is switched on.
- c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- h) Repeat steps d) to g) [TBD] times.

8.2.2.1.4.2 1,28 Mcps TDD Option

8.2.2.1.4.2.1 Initial conditions

This scenario implies the presence of 1 carrier and 6 cells as given in table 8.2.2.1.1A and 8.2.2.1.2A.

Table 8.2.2.1.1A: General test parameters for Cell Re-selection to intra-frequency TDD cell

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	
	Neighbour cells	Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell	Cell2	
HCS		Not used	
UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxlevmin	dBm	-103	The value shall be used for all cells in the test.
Access Service Class (ASC#0) — Persistence value	0..1	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}	s	1,28	The value shall be used for all cells in the test.
DRX cycle length	s	1,28	The value shall be used for all cells in the test.
T1	s	15	
T2	s	15	

Table 8.2.2.1.2A: Cell re-selection to intra-frequency TDD cell

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		DWPTS		0		DWPTS		0		DWPTS	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRARF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	10	7	10	7	7	10	7	10	-1	-1	-1	-1
PCCPCH RSCP	dBm	-63	-66			-66	-63			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
		Cell 4				Cell 5				Cell 6			
Timeslot		0		DWPTS		0		DWPTS		0		DWPTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRARF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/ 1.28 MHz	-70											
Propagation Condition		AWGN											

Note: In the case of multi-frequency cell, the UTRARF Channel Number is the primary frequency's channel number.

8.2.2.1.4.2.2 Procedure

- The SS activates cell 1-6 with T1 defined parameters and monitors cell 1 and 2 for SYNCH-UL sequence in the UpPTS for sending for RRC CONNECTION REQUEST messages from the UE.
- The UE is switched on.
- The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- After 15 s, the parameters are changed as described for T2.
- The SS waits for SYNCH-UL sequence in the UpPTS for sending RRC CONNECTION REQUEST messages from the UE.
- After another 15 s, the parameters are changed as described for T1.
- The SS waits for SYNCH-UL sequence in the UpPTS for sending RRC CONNECTION REQUEST messages from the UE.
- Repeat steps b)-g) until the confidence level according to annex F.6.2 is achieved.

8.2.2.1.4.3 7,68 Mcps TDD Option

8.2.2.1.4.3.1 Initial conditions

This scenario implies the presence of 1 carrier and 6 cells as given in table 8.2.2.1.1B and table 8.2.2.1.2B. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.1.1B: General test parameters for Cell Re-selection to intra-frequency TDD cell

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.2.2.1.2B: Cell re-selection to intra-frequency TDD cell

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset _{1s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2,C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3,C6:0			
Qhyst _{1s}	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Timeslot	Unit	Cell 4				Cell 5				Cell 6			
		0		8		0		8		0		8	
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset _{1s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst _{1s}	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/7,6 8 MHz	-70											
Propagation Condition		AWGN											

8.2.2.1.4.3.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST messages from the UE.
- b) The UE is switched on.
- c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- h) Repeat steps d) to g) until the confidence level according to annex F.6.2 is achieved.

8.2.2.1.5 Test Requirements

8.2.2.1.5.1 3,84 Mcps TDD Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s.
- 3) In step g), the UE shall respond on cell 1 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.1.5.2 1,28 Mcps TDD Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s.
- 3) In step g), the UE shall respond on cell 1 within 8 s.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.1.5.3 7,68 Mcps TDD Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s.
- 3) In step g), the UE shall respond on cell 1 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than 90% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.2 Scenario 2: Cell re-selection to inter-frequency TDD cell

8.2.2.2.1 Definition and applicability

8.2.2.2.1.1 3,84 Mcps Option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on the new cell.

The requirements and this test apply to the 3,84 Mcps TDD UE.

8.2.2.2.1.2 1,28 Mcps Option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the SYNCH-UL sequence in the UpPTS for sending the RRC CONNECTION REQUEST to perform a Location Registration on cell 2.

This test is applicable to 1,28 Mcps TDD UE.

8.2.2.2.1.3 7,68 Mcps Option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on the new cell.

The requirements and this test apply to the 7,68 Mcps TDD UE.

8.2.2.2.2 Minimum requirement

8.2.2.2.2.1 3,84 Mcps Option

The cell re-selection delay shall be less than 8 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateTDD}} + T_{\text{SI}}$, where:

$T_{\text{evaluateTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to table 4.1 in clause 4.2.2.7 in [2].

T_{SI} Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.2.

8.2.2.2.2.2 1,28 Mcps Option

The cell re-selection delay shall be less than 8 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95%.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateNTDD}} + T_{\text{SI}}$, where:

$T_{\text{evaluateNTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateNTDD}}$ of 6.4s according to table 4.1A in clause 4.2 in [2].

T_{SI} Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.2.

8.2.2.2.2.3 7,68 Mcps Option

The cell re-selection delay shall be less than 8 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95%.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateTDD}} + T_{\text{SI}}$, where:

$T_{\text{evaluateTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to table 4.1B in clause 4.2.2.7.3 in [2].

T_{SI} Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.2.

8.2.2.2.3 Test purpose

This test is to verify the requirement for the cell re-selection delay in the multi carrier case.

8.2.2.2.4 Method of test

8.2.2.2.4.1 3,84 Mcps Option

8.2.2.2.4.1.1 Initial conditions

This scenario implies the presence of 2 carriers and 6 cells as given in table 8.2.2.2.1 and table 8.2.2.2.2. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.1: General test parameters for Cell Re-selection to inter-frequency TDD cell

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}		s	1,28	The value shall be used for all cells in the test.
DRX cycle length		s	1,28	The value shall be used for all cells in the test.
T1		s	30	
T2		s	15	

Table 8.2.2.2: Cell re-selection to inter-frequency TDD cell

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		DWPTS		0		DWPTS		0		DWPTS	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
\hat{I}_{or}/I_{oc}	dB	10	7	10	7	7	10	7	10	-1	-1	-1	-1
PCCPCH RSCP	dBm	-63	-66			-66	-63			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2,C4:0C2, C5:0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
Timeslot		Cell 4				Cell 5				Cell 6			
		0		DWPTS		0		DWPTS		0		DWPTS	
UTRA RF Channel Number		Channel				Channel 2				Channel			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/3,84 MHz	-70											
Propagation Condition		AWGN											

8.2.2.2.4.1.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST messages from the UE.
- b) The UE is switched on.
- c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- h) Repeat steps d) to g) [TBD] times.

NOTE: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

8.2.2.2.4.2 1,28 Mcps Option

8.2.2.2.4.2.1 Initial conditions

This scenario implies the presence of 2 carriers and 6 cells as given in table 8.2.2.2.1A and table 8.2.2.2.2A. For this test purpose the broadcast repetition period of the target cell shall be 1.28s. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.2.1A: General test parameters for Cell Re-selection to inter-frequency TDD cell

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
	UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
	Qrxlevmin	dBm	-103	The value shall be used for all cells in the test.
	Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T _{SI}	s	1,28	The value shall be used for all cells in the test.
	DRX cycle length	s	1,28	The value shall be used for all cells in the test.
	T1	s	30	
	T2	s	15	

Table 8.2.2.2A: Cell re-selection to inter-frequency TDD cell

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		DWPTS		0		DWPTS		0		DWPTS	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	10	4	10	4	4	10	4	10	-1	-1	-1	-1
PCCPCH RSCP	dBm	-63	-69			-69	-63			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2,C4:0C2, C5:0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
Timeslot		Cell 4				Cell 5				Cell 6			
		0		DWPTS		0		DWPTS		0		DWPTS	
UTRA RF Channel Number		Channel 1				Channel 2				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/1, 28 MHz	-70											
Propagation Condition		AWGN											
* Note: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.													

8.2.2.2.4.2.2 Procedure

- The SS activates cell 1-6 with T1 defined parameters and monitors cell 1 and 2 for SYNCH-UL sequence in the UpPTS for sending RRC CONNECTION REQUEST messages from the UE.
- The UE is switched on.
- The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- After 15 s, the parameters are changed as described for T2.
- The SS waits for SYNCH-UL sequence in the UpPTS for sending RRC CONNECTION REQUEST messages from the UE.
- After another 15 s, the parameters are changed as described for T1.
- The SS waits for SYNCH-UL sequence in the UpPTS for sending RRC CONNECTION REQUEST messages from the UE.
- Repeat steps b)-g) until the confidence level according to annex F.6.2 is achieved.

NOTE: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

8.2.2.2.4.3 7,68 Mcps Option

8.2.2.2.4.3.1 Initial conditions

This scenario implies the presence of 2 carriers and 6 cells as given in table 8.2.2.2.1B and table 8.2.2.2.2B. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.2.1B: General test parameters for Cell Re-selection to intra-frequency TDD cell

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	
	Neighbour cells	Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell	Cell2	
HCS		Not used	
UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}	s	1.28	The value shall be used for all cells in the test.
DRX cycle length	s	1.28	The value shall be used for all cells in the test.
T1	s	30	
T2	s	15	

Table 8.2.2.2B: Cell re-selection to intra-frequency TDD cell

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_offset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5:0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
Timeslot		Cell 4				Cell 5				Cell 6			
		0		8		0		8		0		8	
UTRA RF Channel Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_offset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/7,6 8 MHz					-70							
Propagation Condition						AWGN							

8.2.2.2.4.3.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST messages from the UE.
- b) The UE is switched on.
- c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- h) Repeat steps d) to g) until the confidence level according to annex F.6.2 is achieved.

NOTE: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

8.2.2.2.5 Test Requirements

8.2.2.2.5.1 3,84 Mcps Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 1 within 8 s.
- 3) In step g), the UE shall respond on cell 2 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.2.5.2 1,28 Mcps Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 1 within 8 s.
- 3) In step g), the UE shall respond on cell 2 within 8 s.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.2.5.3 7,68 Mcps Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 1 within 8 s.
- 3) In step g), the UE shall respond on cell 2 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than 90% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.2A Scenario 2A: 3,84 Mcps TDD cell re-selection for 1,28 Mcps TDD UE

[FFS]

8.2.2.2B Scenario 2B: 1,28 Mcps TDD cell re-selection for 3,84 Mcps TDD UE

FFS

8.2.2.2C Scenario 2C: 3,84 Mcps TDD cell re-selection for 7,68 Mcps TDD UE

8.2.2.2C.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on the new cell.

The requirements and this test applies to UEs supporting both 3.84 Mcps TDD and 7.68 Mcps TDD.

8.2.2.2C.2 Minimum requirement

The cell re-selection delay shall be less than 8 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

NOTE:

$$T_{\text{evaluateTDD}} + T_{\text{SI}}$$

where:

$T_{\text{evaluateTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to Table 4.1B in section 4.2.

T_{SI} Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.2.

8.2.2.2C.3 Test purpose

This test is to verify the requirement for the cell re-selection delay in the 7.68 Mcps TDD to 3.84 Mcps TDD case.

8.2.2.2C.4 Method of test

8.2.2.2C.4.1 Initial conditions

This scenario implies the presence of 1 higher chip rate (7.68 Mcps TDD OPTION) and 1 high chip rate (3.84 Mcps TDD OPTION) cell as given in Table 8.2.2C.1 and 8.2.2.2C.1.

Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2C.1: General test parameters for TDD higher chip rate (7.68 Mcps) to TDD high chip rate (3.84 Mcps) cell re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	7.68 Mcps TDD OPTION cell
	Neighbour cell		Cell2	3.84 Mcps TDD OPTION cell
Final condition	Active cell		Cell2	3.84 Mcps TDD OPTION cell
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		S	1,28	The value shall be used for all cells in the test.
DRX cycle length		S	1,28	The value shall be used for all cells in the test.
T1		S	30	
T2		S	15	

Table 8.2.2C.2: Test parameters for TDD higher chip rate (7.68 Mcps) to TDD high chip rate (3.84 Mcps) cell re-selection

Parameter	Unit	Cell 1				Cell 2			
		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		0	0	0	0	5	5	5	5
PICH_Ec/lor	dB			-3	-3			-3	-3
OCNS_Ec/lor		-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	10	7	10	7	7	10	7	10
PCCPCH_RSCP	dBm	-63	-66			-66	-63		
Qoffset1 _{s,n}	dB	C1, C2: 0				C2, C1: 0			
Qhyst1 _s	dB	0				0			
Treselection	s	0				0			
Sinterserch	dB	not sent				not sent			
I_{oc}		-70 dBm/7.68 MHz				-70 dBm/3.84 MHz			
Propagation Condition		AWGN							

8.2.2.2C.4.2 Procedure

- The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST messages from the UE.
- The UE is switched on.
- The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- After 15 s, the parameters are changed as described for T2.
- The SS waits for RRC CONNECTION REQUEST messages from the UE.
- After another 15 s, the parameters are changed as described for T1.
- The SS waits for RRC CONNECTION REQUEST messages from the UE.

h) Repeat steps d) to g) [TBD] times.

NOTE: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

8.2.2.2C.5 Test Requirements

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 1 within 8 s.
- 3) In step g), the UE shall respond on cell 2 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.2D Scenario 2D: 7,68 Mcps TDD cell re-selection for 3,84 Mcps TDD UE

8.2.2.2D.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on the new cell.

The requirements and this test applies to UEs supporting both 3.84 Mcps TDD and 7.68 Mcps TDD.

8.2.2.2D.2 Minimum requirement

The cell re-selection delay shall be less than 8 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

NOTE:

$$T_{\text{evaluateTDD}} + T_{\text{SI}}$$

where:

$T_{\text{evaluateTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to Table 4.1B in section 4.2.

T_{SI} Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.2.

8.2.2.2D.3 Test purpose

This test is to verify the requirement for the cell re-selection delay in the 3.84 Mcps TDD to 7.68 Mcps TDD case.

8.2.2.2D.4 Method of test

8.2.2.2D.4.1 Initial conditions

This scenario implies the presence of one 3.84 Mcps TDD serving cell, and one 7.68 Mcps TDD cell to be re-selected. The UE is requested to monitor neighbouring cells on one 3.84 Mcps TDD carrier and one 7.68 Mcps TDD carrier. Test parameters are given in Table 8.2.2.2D.1 and 8.2.2.2D.2.

Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2D.1: General test parameters for 3.84 Mcps /7.68 Mcps TDD cell re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell 1	3.84 Mcps TDD OPTION cell
	Neighbour cell		Cell 2	7.68 Mcps TDD OPTION cell
Final condition	Active cell		Cell 2	7.68 Mcps TDD OPTION cell
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
$Q_{rxlevmin}$		dBm	-102	
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}		S	1,28	The value shall be used for all cells in the test.
DRX cycle length		S	1,28	The value shall be used for all cells in the test.
T_1		S	30	
T_2		S	15	

Table 8.2.2D.2: Cell 1 specific test parameters for 3.84 Mcps TDD/7.68 Mcps TDD cell re-selection

Parameter	Unit	Cell 1				Cell 2			
		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		0	0	0	0	5	5	5	5
PICH_Ec/lor	dB			-3	-3			-3	-3
OCNS_Ec/lor		-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	10	7	10	7	7	10	7	10
PCCPCH_RSCP	dBm	-63	-66			-66	-63		
Qoffset1 _{s,n}	dB	C1, C2: 0				C2, C1: 0			
Qhyst1 _s	dB	0				0			
Treselection	s	0				0			
Sintersearch	dB	not sent				not sent			
I_{oc}		-70 dBm/3.84 MHz				-70 dBm/7.68 MHz			
Propagation Condition		AWGN							

8.2.2D.4.2 Procedure

- The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST messages from the UE.
- The UE is switched on.
- The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- After 15 s, the parameters are changed as described for T2.
- The SS waits for RRC CONNECTION REQUEST messages from the UE.
- After another 15 s, the parameters are changed as described for T1.
- The SS waits for RRC CONNECTION REQUEST messages from the UE.
- Repeat steps d) to g) [TBD] times.

NOTE: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

8.2.2.2D.5 Test Requirements

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 1 within 8 s.
- 3) In step g), the UE shall respond on cell 2 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.3 Scenario 3: TDD/FDD Cell re-selection

8.2.2.3.1 Definition and applicability

8.2.2.3.1.1 3,84 Mcps Option

The cell re-selection delay is defined as the time from when the cell quality levels change to the moment when this change makes the UE reselect a better ranked cell, and starts to send preambles on the PRACH for sending the RRC CONNECTION REQUEST message to perform a Location Registration on the new cell.

This test is for the case where the UE camps on a 3,84 Mcps TDD cell and reselects to an FDD cell.

The requirements and this test apply to UEs supporting both 3,84 Mcps TDD and FDD.

8.2.2.3.1.2 1,28 Mcps Option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send preambles on the PRACH for sending the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

This test is for the case where the UE camps on a 1,28 Mcps TDD cell and reselects to an FDD cell.

The requirements and this test apply to UEs supporting both 1,28 Mcps TDD and FDD.

8.2.2.3.1.3 7,68 Mcps Option

The cell re-selection delay is defined as the time from when the cell quality levels change to the moment when this change makes the UE reselect a better ranked cell, and starts to send preambles on the PRACH for sending the RRC CONNECTION REQUEST message to perform a Location Registration on the new cell.

This test is for the case where the UE camps on a 7,68 Mcps TDD cell and reselects to an FDD cell.

The requirements and this test apply to UEs supporting both 7,68 Mcps TDD and FDD.

8.2.2.3.2 Minimum requirements

8.2.2.3.2.1 3,84 Mcps TDD Option

The cell re-selection delay shall be less than 8 s when the DRX cycle length is 1,28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateFDD}} + T_{\text{SI}}$, where:

$T_{\text{evaluateFDD}}$ See TS 25.123 [2] table 4.1 in clause 4.2.2.

T_{SI} Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.3.

8.2.2.3.2.2 1,28 Mcps TDD Option

The minimum requirement for the cell re-selection delay is less than 8 s with a DRX cycle length of 1280ms.

This shall be verified in more than 90% of the cases with a confidence level of 95%.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.3.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluateFDD}$ of 6.4s according to table F2.4.1.A in Annex F clause F.2.4.

T_{SI} Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7,68 s, allow 8 s in the test case.

8.2.2.3.2.3 7,68 Mcps TDD Option

The cell re-selection delay shall be less than 8 s when the DRX cycle length is 1,28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95%.

NOTE:

The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluateTDD}$ of 6.4s. See TS 25.123 [2] table 4.1 in clause 4.2.2.

T_{SI} Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.3.

8.2.2.3.3 Test purpose

The test purpose is to verify the requirement for the cell re-selection.

8.2.2.3.4 Method of test

8.2.2.3.4.1 3,84 Mcps Option

8.2.2.3.4.1.1 Initial conditions

This scenario implies the presence of 1 TDD and 1 FDD cell as given in table 8.2.2.3.4.1 and table 8.2.2.3.4.2. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.3.4.1: General test parameters for the TDD/FDD cell re-selection

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	TDD cell
	Neighbour cells	Cell2	FDD cell
Final condition	Active cell	Cell2	
HCS		Not used	
UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}	s	1,28	The value shall be used for all cells in the test.
DRX cycle length	s	1,28	The value shall be used for all cells in the test.
T1	s	30	
T2	s	15	

Table 8.2.2.3.4.2: TDD/FDD cell re-selection

Parameter	Unit	Cell 1				Cell 2	
		0		8		n.a.	n.a.
Timeslot Number		T1	T2	T1	T2	T1	T2
UTRARF Channel Number		Channel 1				Channel 2	
CPICH_Ec/lor	dB	n.a.		n.a.		-10	-10
PCCPCH_Ec/lor	dB	-3	-3			-12	-12
SCH_Ec/lor	dB	-9	-9	-9	-9	-12	-12
SCH_offset		0	0	0	0	n.a.	n.a.
PICH_Ec/lor	dB			-3	-3	-15	-15
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-0,941	-0,941
\hat{I}_{or}/I_{oc}	dB	3	-2	3	-2	-2	3
I_{oc}	dBm/3,84 MHz	-70					
CPICH_RSCP	dBm	n.a.		n.a.		-82	-77
PCCPCH_RSCP	dBm	-70	-75			n.a.	n.a.
Cell_selection and reselectionquality_measure		CPICH_RSCP				CPICH_RSCP	
Qrxlevmin	dBm	-102				-115	
Qoffset _{s,n}	dB	C1, C2: -12				C2, C1: +12	
Qhyst _{1s}	dB	0				0	
Treselection	s	0				0	
Sintersearch	dB	not sent				not sent	
Propagation Condition		AWGN				AWGN	

8.2.2.3.4.1.2 Procedure

- The SS activates cell 1 and cell 2 with T1 defined parameters and monitors them for RRC CONNECTION REQUEST messages from the UE.
- The UE is switched on.
- The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- After 30 s, the parameters are changed as described for T2.
- The SS waits for RRC CONNECTION REQUEST messages from the UE.
- After another 15 s, the parameters are changed as described for T1.
- The SS waits for RRC CONNECTION REQUEST messages from the UE.
- Repeat steps d) to g) [TBD] times.

8.2.2.3.4.2 1,28 Mcps Option

8.2.2.3.4.2.1 Initial Conditions

This test is to verify the requirement for the 1,28 Mcps TDD OPTION/FDD cell re-selection delay reported in clause 4.2. in [2]

This scenario implies the presence 1.28Mps TDD serving cell, and 1 FDD cell to be selected. The UE is requested to monitor neighbouring cells on 1 1.28Mps TDD carrier and 1 FDD carrier. Test parameters are given in table 8.2.2.3.4.1A and table 8.2.2.3.4.2A.

Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.3.4.1A: General test parameters for the TDD/FDD cell re-selection

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	1,28 Mcps TDD OPTION cell
	Neighbour cells	Cell2	FDD cell
Final condition	Active cell	Cell2	FDD cell
HCS		Not used	
UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}	s	1,28	The value shall be used for all cells in the test.
DRX cycle length	s	1,28	The value shall be used for all cells in the test.
T1	s	30	
T2	s	15	

Table 8.2.2.3.4.2A: Test parameters for the 1,28 Mcps TDD OPTION/FDD cell re-selection

Parameter	Unit	Cell 1				Cell 2	
		0		DwPts		n.a.	
Timeslot Number							
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1					
PCCPCH_Ec/I _{or}	dB	-3	-3			-12	-12
DwPCH_Ec/I _{or}	dB			0	0	n.a.	
CPICH_Ec/I _{or}	dB	n.a.		n.a.		-10	-10
SCH_Ec/I _{or}	dB	n.a.		n.a.		-12	-12
PICH_Ec/I _{or}	dB					-15	-15
OCNS_Ec/I _{or}	dB	-3		-3		-0,941	-0,941
\hat{I}_{or}/I_{oc}	dB	8	2	8	2	-3	-3
I _{oc}		-70 dBm/1.28MHz				-70 dBm/3.84MHz	
PCCPCH_RSCP	dBm	-65	-71			n.a.	n.a.
CPICH_RSCP		n.a.				-83	-77
Cell_selection_and_reselection_quality_measure		CPICH_RSCP				CPICH_RSCP	
Qrxlevmin	dBm	-103				-115	
Qoffset1 _{s,n}	dB	C1, C2: -12				C2, C1: +12	
Qhyst1 _s	dB	0				0	
Treselection	s	0				0	
Sintersearch	dB	not sent					
Propagation Condition		AWGN					
* Note: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.							

8.2.2.3.4.2.2 Procedure

- a) The SS activates cell 1 and cell 2 with T1 defined parameters and monitors them for RRC CONNECTION REQUEST messages from the UE.

- b) The UE is switched on.
- c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- d) After 30 s, the parameters are changed as described for T2.
- e) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for SYNCH-UL sequence in the UpPTS for sending RRC CONNECTION REQUEST messages from the UE.
- h) Repeat steps b)-g) until the confidence level according to annex F.6.2 is achieved.

8.2.2.3.4.3 7,68 Mcps Option

8.2.2.3.4.3.1 Initial conditions

This scenario implies the presence of 1 TDD and 1 FDD cell as given in table 8.2.2.3.4.1B and table 8.2.2.3.4.2B. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.3.4.1B: General test parameters for the TDD/FDD cell re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	TDD cell
	Neighbour cells		Cell2	FDD cell
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	30	During T1 cell 1 better ranked than cell 2
T2		s	15	During T2 cell 2 better ranked than cell 1

Table 8.2.2.3.4.2B: TDD/FDD cell re-selection

Parameter	Unit	Cell 1				Cell 2	
		0		8		n.a.	n.a.
Timeslot Number		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2	
CPICH_Ec/I _{oc}	dB	n.a.		n.a.		-10	-10
PCCPCH_Ec/I _{oc}	dB	-3	-3			-12	-12
SCH_Ec/I _{oc}	dB	-9	-9	-9	-9	-12	-12
SCH_t _{offset}		0	0	0	0	n.a.	n.a.
PICH_Ec/I _{oc}	dB			-3	-3	-15	-15
OCNS_Ec/I _{oc}	dB	-3,12	-3,12	-3,12	-3,12	-0,941	-0,941
\hat{I}_{or}/I_{oc}	dB	3	-2	3	-2	-2	3
I_{oc}		-70 dBm/7.68 MHz				-70 dBm/3.84 MHz	
CPICH_RSCP	dBm	n.a.		n.a.		-82	-77
PCCPCH_RSCP	dBm	-70	-75			n.a.	n.a.
Cell_selection_and_reselection_quality_measure		CPICH_RSCP				CPICH_RSCP	
Q _{rxlevmin}	dBm	-102				-115	
Q _{offset1s,n}	dB	C1, C2: -12				C2, C1: +12	
Q _{hyst1s}	dB	0				0	
T _{resselection}	s	0				0	
Propagation Condition		AWGN				AWGN	

8.2.2.3.4.3.2 Procedure

- a) The SS activates cell 1 and cell 2 with T1 defined parameters and monitors them for RRC CONNECTION REQUEST messages from the UE.
- b) The UE is switched on.
- c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- d) After 30 s, the parameters are changed as described for T2.
- e) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- h) Repeat steps d) to g) until the confidence level according to annex F.6.2 is achieved.

8.2.2.3.5 Test requirements

8.2.2.3.5.1 3,84 Mcps TDD Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s.
- 3) In step g), the UE shall respond on cell 1 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.3.5.2 1,28 Mcps TDD Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s.
- 3) In step g), the UE shall respond on cell 1 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.3.5.3 7,68 Mcps TDD Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s.
- 3) In step g), the UE shall respond on cell 1 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than 90% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.4 Scenario 4: inter RAT cell re-selection

8.2.2.4.1 Definition and applicability

8.2.2.4.1.1 3,84 Mcps Option

The cell re-selection delay is defined as the time from when the cell quality levels change to the moment when this change makes the UE reselect a better ranked cell, and starts to send LOCATION UPDATING REQUEST message to perform a Location update to the new cell.

This test is for the case where the UE camps on a 3,84 Mcps TDD cell and reselects to a GSM cell.

The requirements and this test apply to UEs supporting both 3,84 Mcps TDD and GSM.

8.2.2.4.1.2 1,28 Mcps Option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send LOCATION UPDATING REQUEST message to perform a Location update.

This test is for the case where the UE camps on a 1,28 Mcps TDD cell and reselects to a GSM cell.

The requirements and this test apply to UEs supporting both 1,28 Mcps TDD and GSM.

8.2.2.4.1.3 7,68 Mcps Option

The cell re-selection delay is defined as the time from when the cell quality levels change to the moment when this change makes the UE reselect a better ranked cell, and starts to send LOCATION UPDATING REQUEST message to perform a Location update to the new cell.

This test is for the case where the UE camps on a 7,68 Mcps TDD cell and reselects to a GSM cell.

The requirements and this test apply to UEs supporting both 7,68 Mcps TDD and GSM.

8.2.2.4.2 Minimum requirement

8.2.2.4.2.1 3,84 Mcps Option

The cell re-selection delay shall be less than $26\text{ s} + T_{\text{BCCH}}$, where T_{BCCH} is the maximum time allowed to read BCCH data in the GSM cell.

NOTE: The cell re-selection delay can be expressed as:

$$4 * T_{\text{measureGSM}} + T_{\text{BCCH}}$$

where:

$T_{\text{measureGSM}}$ Specified in Table 4.1 in sub clause 4.2.2.7.1 in [2].

T_{BCCH} Equal to 1.9 s, i.e. the maximum time allowed to read BCCH data when synchronised to a BCCH carrier from a GSM cell (specified in TS 45.005).

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.4

8.2.2.4.2.2 1,28 Mcps Option

The cell re-selection delay shall be less than $8\text{ s} + T_{\text{BCCH}}$ where T_{BCCH} is the maximum time allowed to read BCCH data from GSM cell.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

NOTE: The cell re-selection delay can be expressed as: $\text{Max}(3 * T_{\text{measureNTDD}}, T_{\text{measureGSM}} + 1\text{DRX}) + T_{\text{BCCH}}$, where:

$T_{\text{measureTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{measureNTDD}}$ of 1.28s according to Table 4.1A in [2].

$T_{\text{measureGSM}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{measureGSM}}$ of 6.4s according to Table 4.1A in [2].

DRX cycle length 1.28s is assumed, see Table A.4.1A in [2].

T_{BCCH} Maximum time allowed to read BCCH data from GSM cell in TS 45.005.

According to [20], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

This gives a total of $7.68s + T_{\text{BCCH}}$, thus allow $8s + T_{\text{BCCH}}$.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.4

8.2.2.4.2.3 7,68 Mcps Option

The cell re-selection delay shall be less than $26s + T_{\text{BCCH}}$, where T_{BCCH} is the maximum time allowed to read BCCH data in the GSM cell [21].

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

NOTE: The cell re-selection delay can be expressed as:

$$4 * T_{\text{measureGSM}} + T_{\text{BCCH}}$$

where:

$T_{\text{measureGSM}}$ Specified in Table 4.1B in sub clause 4.2.2.7.3 in [2].

T_{BCCH} Equal to 1.9 s, i.e. the maximum time allowed to read BCCH data when synchronised to a BCCH carrier from a GSM cell [21].

This gives a total of $25.6s + T_{\text{BCCH}}$, allow $26s + T_{\text{BCCH}}$ in the test case.

8.2.2.4.3 Test purpose

This test verifies the UE meets the minimum requirement for the case where the UE camps on a TDD cell and reselects to a GSM cell.

8.2.2.4.4 Method of Test

8.2.2.4.4.1 3,84 Mcps Option

8.2.2.4.4.1.1 Initial conditions

This scenario implies the presence of 1 3,84 Mcps TDD and 1 GSM cell as given in table 8.2.2.4.1, 8.2.2.4.2, and 8.2.2.4.3. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.4.1: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	TDD Cell
	Neighbour cell		Cell2	GSM Cell
Final condition	Active cell		Cell2	
DRX cycle length		s	1,28	UTRAN cell
BCCH repetition period (GSM cell)		s	1,87	In GSM the system information is scheduled according to an 8 x (51 x 8) cycle (i.e. a system information message is transmitted every 235 ms). The cell selection parameters in system info 3 and 4 are transmitted at least every second. (GSM 05.02)
T1		s	45	
T2		s	35	

Table 8.2.2.4.2: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
		0		8	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9
SCH_offset		0	0	0	0
PICH_Ec/lor	dB			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	3	-2	3	-2
I_{oc}	dBm/3,8 4 MHz	-70		-70	
PCCPCH RSCP	dBm	-70	-75		
Propagation Condition		AWGN		AWGN	
Treselection	s	0			
Ssearch _{RAT}	dB	not sent			

Table 8.2.2.4.3: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90	-75
RXLEV_ACCESS_MIN	dBm	-100	
MS_TXPWR_MAX_CCH	dBm	30	

8.2.2.4.4.1.2 Procedure

- The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST and LOCATION UPDATING REQUEST messages from the UE.
- The UE is switched on.
- The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- After 45 s, the parameters are changed as described for T2.
- The SS waits for LOCATION UPDATING REQUEST messages from the UE.
- After 35 s, the parameters are changed as described for T1.
- The SS waits for RRC CONNECTION REQUEST messages from the UE.
- Repeat steps d) to g) [TBD] times.

8.2.2.4.4.2 1,28 Mcps Option

8.2.2.4.4.2.1 Initial conditions

This scenario implies the presence of 1 1,28 Mcps TDD serving cell, and 1 GSM cell to be re-selected. Test parameters are given in table 8.2.2.4.1A, 8.2.2.4.2A, and 8.2.2.4.3A.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. Cell 1 and cell 2 shall belong to different location areas.

Table 8.2.2.4.1A: General test parameters for UTRAN (1,28 Mcps TDD OPTION) to GSM Cell Re-selection

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	
	Neighbour cell	Cell2	
Final condition	Active cell	Cell2	
DRX cycle length	s	1,28	
T1	s	15	
T2	s	15	

Table 8.2.2.4.2A: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
Timeslot Number		0		DwPTS	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3	-3		
DwPCH_Ec/lor	dB			0	0
\hat{I}_{or}/I_{oc}	dB	13	-12	13	-12
I_{oc}	dBm/1,2 8 MHz	-80			
PCCPCH RSCP	dBm	-70	-95	n.a.	n.a.
Propagation Condition		AWGN		AWGN	
Treselection	s	0			
Ssearch _{RAT}	dB	Not sent			
Qrxlevmin	dBm	-103			
Qoffset _{1s,n}	dB	C1, C2: 0			
Qhyst _{1s}	dB	0			
* Note: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.					

Table 8.2.2.4.3A: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-75	-75
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

8.2.2.4.4.2.2 Procedure

- The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST and LOCATION UPDATING REQUEST messages from the UE.
- The UE is switched on.
- The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- After 15 s, the parameters are changed as described for T2.

- e) The SS waits for LOCATION UPDATING REQUEST messages from the UE.
- f) After 15 s, the parameters are changed as described for T1.
- g) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- h) Repeat steps b)-g) until the confidence level according to annex F.6.2 is achieved.

8.2.2.4.4.3 7,68 Mcps Option

8.2.2.4.4.3.1 Initial conditions

This scenario implies the presence of 1 7,68 Mcps TDD and 1 GSM cell as given in table 8.2.2.4.1B, 8.2.2.4.2B, and 8.2.2.4.3B. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.4.1B: General test parameters for UTRAN to GSM Cell Re-selection

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	UTRA TDD Cell
	Neighbour cell	Cell2	GSM Cell
Final condition	Active cell	Cell2	
HCS		Not used	
DRX cycle length	s	1,28	UTRA TDD cell
T1	s	45	
T2	s	35	

Table 8.2.2.4.2B: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA TDD)			
		0		8	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9
SCH_offset		0	0	0	0
PICH_Ec/lor	dB			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	3	-2	3	-2
I_{oc}	dBm/7,6 8 MHz	-70		-70	
PCCPCH RSCP	dBm	-70	-75	n.a.	n.a.
Propagation Condition		AWGN		AWGN	
Qrxlevmin	dBm	-102			
Qoffset1 _{s,n}	dB	C1, C2: 0			
Qhyst1	dB	0			
Treselection	s	0			
Ssearch _{RAT}	dB	not sent			

Table 8.2.2.4.3B: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90	-75
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

8.2.2.4.4.3.2 Procedure

- a) The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST and LOCATION UPDATING REQUEST messages from the UE.
- b) The UE is switched on.

- c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- d) After 45 s, the parameters are changed as described for T2.
- e) The SS waits for LOCATION UPDATING REQUEST messages from the UE.
- f) After 35 s, the parameters are changed as described for T1.
- g) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- h) Repeat steps d) to g) until the confidence level according to annex F.6.2 is achieved.

8.2.2.4.5 Test Requirements

8.2.2.4.5.1 3,84 Mcps Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 27.9 s.
- 3) In step g), the UE shall respond on cell 1.

For the test to pass, the total number of fulfilled test requirements in step 2) shall be at least 90% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.4.5.2 1,28 Mcps Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 9.7 s.
- 3) In step g), the UE shall respond on cell 1.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.4.5.3 7,68 Mcps Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 27.9 s.
- 3) In step g), the UE shall respond on cell 1.

For the test to pass, the total number of fulfilled test requirements in step 2) shall be at least 90% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.5 Scenario 4A: inter RAT cell acquisition and re-selection

8.2.2.5.1 Definition and applicability

8.2.2.5.1.1 3,84 Mcps Option

Void

Note: Scenario 4A does not apply for 3,84 Mcps TDD, this section numbering is purely for consistency with TS 25.123, where corresponding sections are also void.

8.2.2.5.1.2 1,28 Mcps Option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send RR Channel Request message for location update to Cell 2. ,

Unlike 1,28 Mcps scenario 4 the initial GSM RX_LEV is set below monitoring threshold and GSM measurements do not start until the second phase of the test. The requirements and this test apply to UEs supporting both 1,28 Mcps TDD and GSM.

8.2.2.5.1.3 7,68 Mcps Option

Void

Note: Scenario 4A does not apply for 7,68 Mcps TDD, this section numbering is purely for consistency with TS 25.123, where corresponding sections are also void.

8.2.2.5.2 Minimum requirement

8.2.2.5.2.1 3,84 Mcps Option

Void

8.2.2.5.2.2 1,28 Mcps Option

The cell re-selection delay shall be less than $26\text{ s} + T_{\text{BCCH}}$, where T_{BCCH} is the maximum time allowed to read BCCH data from GSM cell [21].

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

NOTE: The UE shall keep a running average of 4 measurements, thus gives $4 * T_{\text{measureGSM}} + T_{\text{BCCH}}$, where:

$T_{\text{measureGSM}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{measureGSM}}$ of 6.4s according to Table 4.1A in section 4.2. in [2].

T_{BCCH} Maximum time allowed to read BCCH data from GSM cell in TS 45.005 [20].

According to [21], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

This gives a total of $25,6\text{ s} + T_{\text{BCCH}}$, thus allow $26\text{ s} + T_{\text{BCCH}}$.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.4.3

8.2.2.5.2.3 7,68 Mcps Option

Void

8.2.2.5.3 Test purpose

This test verifies the UE meets the minimum requirement for the case where the UE camps on a TDD cell and then acquires and reselects to a GSM cell

8.2.2.5.4 Method of Test

8.2.2.5.4.1 3,84 Mcps Option

Void

8.2.2.5.4.2 1,28 Mcps Option

8.2.2.5.4.2.1 Initial conditions

This scenario implies the presence of 1 1,28 Mcps TDD serving cell, and 1 GSM cell to be re-selected. Test parameters are given in table 8.2.2.5.1A, 8.2.2.5.2A, and 8.2.2.5.3A.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. Cell 1 and cell 2 shall belong to different location areas.

Table 8.2.2.5.1A: General test parameters for UTRAN (1,28 Mcps TDD OPTION) to GSM Cell Re-selection Scenario 4A

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	1,28 Mcps TDD OPTION cell
	Neighbour cell		Cell2	GSM cell
Final condition	Active cell		Cell2	GSM cell
DRX cycle length		s	1,28	
HCS			Not Used	
T1		s	45	
T2		s	45	

Table 8.2.2.5.2A: Cell re-selection UTRAN to GSM cell case (cell 1) Scenario 4A

Parameter	Unit	Cell 1 (UTRA)			
		0		DwPTS	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3	-3		
DwPCH_Ec/lor	dB			0	0
OCNS_Ec/lor	dB	-3	-3		
\hat{I}_{or}/I_{oc}	dB	6	6	6	6
I_{oc}	dBm/1,2 8 MHz	-80			
PCCPCH RSCP	dBm	-77	-77		
Propagation Condition		AWGN		AWGN	
Treselection	s	0			
Ssearch _{RAT}	dB	Not sent			
Qrxlevmin	dBm	-103			
Qoffset _{1s,n}	dB	C1, C2: 0			
Qhyst _{1s}	dB	0			
* Note: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.					

Table 8.2.2.5.3A: Cell re-selection UTRAN to GSM cell case (cell 2) Scenario 4A

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90	-70
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

8.2.2.5.4.2.2 Procedure

- The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST and LOCATION UPDATING REQUEST messages from the UE.
- The UE is switched on.
- The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- After 45 s, the parameters are changed as described for T2.
- The SS waits for RR Channel Request message for a location update to Cell 2 from the UE.
- After 45 s, the parameters are changed as described for T1.
- The SS waits for RRC CONNECTION REQUEST messages from the UE.
- Repeat steps b)-g) until the confidence level according to annex F.6.2 is achieved.

8.2.2.5.4.3 7,68 Mcps Option

Void

8.2.2.5.5 Test Requirements

8.2.2.5.5.1 3,84 Mcps Option

void

8.2.2.5.5.2 1,28 Mcps Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 28 s.
- 3) In step g), the UE shall respond on cell 1.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.5.5.3 7,68 Mcps Option

void

8.2.2.5A Scenario 4B: UTRAN to GSM Cell Re-Selection: HCS with only UTRA level changed

8.2.2.5A.1 Definition and applicability

8.2.2.5A.1.1 3,84 Mcps Option

Void

8.2.2.5A.1.2 1,28 Mcps Option

The cell re-selection delay is defined as the time from when the cell quality levels change to the moment when this change makes the UE reselect a better ranked cell, and starts to send LOCATION UPDATING REQUEST message to perform a Location update to the new cell.

The requirements and this test apply to Release 6 and later releases for the combined TDD and GSM UE.

8.2.2.5A.1.3 7,68 Mcps Option

Void

8.2.2.5A.2 Minimum requirement

8.2.2.5A.2.1 3,84 Mcps Option

Void

8.2.2.5A.2.2 1,28 Mcps Option

The cell re-selection delay shall be less than $37.7 \text{ s} + T_{\text{BCCH}}$, where T_{BCCH} is the maximum time allowed to read BCCH data from GSM cell, see TS 45.008 [30].

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $30 \text{ s} + T_{\text{measureGSM}} + \text{DRX cycle length} + T_{\text{BCCH}}$, where:

T _{measureGSM}	See Table 4.1 in TS 25.123 section 4.2, 6.4s
DRX cycle length	See Table 4.1 in TS 25.123 section 4.2, 1.28s
T _{BCCH}	Maximum time allowed to read BCCH data from GSM cell, see TS 45.008 [30]. According to [20] and [30], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

This gives a total of 37.68 s + 1.9s, allow 40s in the test case.

The normative reference for this requirement is TS 25.123.

8.2.2.5A.2.3 7,68 Mcps Option

Void

8.2.2.5A.3 Test purpose

This test verifies the UE meets the minimum requirement for the case where the UE camps on a TDD cell and then HCS to a GSM cell.

8.2.2.5A.4 Method of Test

8.2.2.5A.4.1 3,84 Mcps Option

Void

8.2.2.5A.4.2 1,28 Mcps Option

8.2.2.5A.4.2.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected, as given in tables 8.2.2.7.8.1 to 8.2.2.7.8.3. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 12 GSM cells. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.5A.1: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	1,28 Mcps TDD OPTION cell
	Neighbour cell		Cell2	GSM cell
Final condition	Active cell		Cell2	GSM cell
DRX cycle length		s	1,28	
HCS			Used	
Monitored cell list size			12 GSM neighbours including the ARFCN of cell 2	NOTE: See Annex 1 for cell information
T1		s	45	
T2		s	45	

Table 8.2.2.5A.1A: Cell re-selection UTRAN to GSM cell case (cell 1) Scenario 4B

Parameter	Unit	Cell 1 (UTRA)			
		0		DwPTS	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3	-3		
DwPCH_Ec/lor	dB			0	0
\hat{I}_{or}/I_{oc}	dB	13	-12	13	-12
I_{oc}	dBm/1,2 8 MHz	-80			
PCCPCH RSCP	dBm	-77	-95		
Propagation Condition		AWGN		AWGN	
Treselection	s	0			
Ssearch _{RAT}	dB	Not sent			
Qrxlevmin	dBm	-103			
Qoffset1 _{s,n}	dB	C1, C2: 0			
Qhyst1 _s	dB	0			
SsearchRAT	dB	0			
Penalty_time	s	0 (default value)			
HCS_PRIO		0 (default value)			
Qhcs		0 (default value)			
TCrmax	s	not used (default value)			

Table 8.2.2.5A.1B: Cell re-selection UTRAN to GSM cell case (cell 2) Scenario 4B

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-80	-80
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	
Qsearch_I	-	always	

Specific 2 quarter Message Contents

All messages indicated shall use the same content as described in the default message content in TS45.008 [30] clause 9, with the above exceptions.

8.2.2.5A.4.2.2 Procedure

- The SS activates cell 1 and 2 with T1 defined parameters in tables 8.2.3.3.4 and 8.2.3.3.5 and monitors cell 1 and 2 for random access requests from the UE.
- The UE is switched on.
- The SS and the UE shall perform a location registration procedure on cell 1.
- After 45 s from the end of step 3, the parameters are changed as described for T2 in tables 8.2.3.3.4 and 8.2.3.3.5.
- The SS waits for a location registration procedure from the UE. If the UE begins transmitting on cell 2 within 39.6 s then the number of successful tests is increased by one.
- After 45 s from the beginning of T2, the parameters are changed as described for T1 in tables 8.2.3.3.4 and 8.2.3.3.5.
- The SS and the UE shall perform a location registration procedure on cell 1.
- After 45 s from the end of step 6, the parameters are changed as described for T2 in tables 8.2.3.3.4 and 8.2.3.3.5.

Repeat step e) to h) until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 6.1.0b of 34.108 [3], with the above and the following exceptions:

SYSTEM INFORMATION BLOCK TYPE3:

Information Element	Value
HCS Serving Cell Information	
-HCS PRIO	0
-Qhcs	0
-TCRmax	not used

SYSTEM INFORMATION BLOCK TYPE11

Information Element	Value
HCS neighbouring Cell Information	
-HCS PRIO	0
-Qhcs	0
-HCS Cell RE-selection Information	
-Penalty_time	0

8.2.2.5A.4.3 7,68 Mcps Option

Void

8.2.2.5A.5 Test Requirements

8.2.2.5A.5.1 3,84 Mcps Option

void

8.2.2.5A.5.2 1,28 Mcps Option

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95 %.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.5A.5.3 7,68 Mcps Option

Void

8.2.2.6 Scenario 5: TDD/E-UTRA cell re-selection

8.2.2.6.1 UTRA to E-UTRA TDD cell reselection: E-UTRA is of higher priority

Editor's note: This Test case is incomplete for frequencies above 3GHz

- **The Test system uncertainties applicable above 3GHz are undefined**
- **The Test Tolerances and Test Requirements applicable above 3GHz are undefined**

8.2.2.6.1.1 Definition and application

8.2.2.6.1.1.1 3.84 Mcps Option

8.2.2.6.1.1.2 1.28Mcps Option

The cell reselection delay to higher priority is defined as the time from the beginning of time period T2, to the moment when the UE camps on cell2, and start to send preamble on the PRACH for the RRC CONNECTION REQUEST message on cell2.

This test is for case when the UE camps on a 1.28Mcps TDD cell and reselects to a E-UTRA TDD cell which is of higher priority.

The requirement and this test apply to release 9 and later releases UTRA 1.28Mcps TDD UEs that support release 8 and later releases E-UTRA TDD.

- 8.2.2.6.1.1.3 7.68Mcps Option
- 8.2.2.6.1.2 Minimum requirement
- 8.2.2.6.1.2.1 3.84 Mcps Option
- 8.2.2.6.1.2.2 1.28Mcps Option

The cell re-selection delay to higher priority shall be less than 81 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

NOTE: The cell re-selection delay to higher priority cell can be expressed as: $T_{\text{higher_priority_search}} + T_{\text{evaluateE-UTRA}} + T_{\text{SI}}$,

Where:

- $T_{\text{higher_priority_search}}$ 60s, See 25.123[2] section 4.2.2.5a
- $T_{\text{evaluateE-UTRA}}$ 19.2s, See 25.123[2] Table 4.2A in section 4.2.2.7
- T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell; 1280 ms is assumed in this test case.

This gives a total of 80.48 s, allow 81 s for higher priority cell reselection in the test case.

- 8.2.2.6.1.2.3 7.68Mcps Option
- 8.2.2.6.1.3 Test purpose

This test verifies the UE meet minimum requirement for the case where the UE camps on a TDD cell and reselects to a E-UTRA TDD cell which is of higher priority.

- 8.2.2.6.1.4 Method of test
- 8.2.2.6.1.4.1 3.84Mcps Option
- 8.2.2.6.1.4.2 1.28Mcps Option
- 8.2.2.6.1.4.2.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table J.2 in Annex J.

This test scenario comprised of 1UTRA TDD serving cell, and 1E-UTRA TDD cell to be re-selected. Test parameters are given in table 8.2.2.6.1.4.2.1-1, 8.2.2.6.1.4.2.1-2 and 8.2.2.6.1.4.2.1-3. The test consists of three successive time periods, with time duration of T1, T2 and T3 respectively. UTRA cell1 is already identified by the UE prior to the start of the test. At T1 the UE is camped on to cell1. Cell2 is of higher priority than cell1.

Table 8.2.2.6.1.4.2.1-1: General test parameters for UTRAN (1.28 Mcps TDD OPTION) to E-UTRAN TDD Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	UE is on cell 1 in the initialisation phase, so that reselection to cell 2 occurs during T2
T2 end condition	Active cell		Cell2	UE shall perform reselection to cell 2 during T2
	Neighbour cell		Cell1	UTRA 1.28 Mcps TDD OPTION cell
T3 end condition	Active cell		Cell 1	UE shall perform reselection to cell 1 during T3
	Neighbour cell		Cell 2	E-UTRA TDD cell
Uplink-downlink configuration of cell 2			1	As specified in table 4.2.2 in TS 36.211 [30]
Special subframe configuration of cell 2			6	As specified in table 4.2.1 in TS 36.211 [30]
PRACH configuration of cell 2			53	As specified in table 4.7.1-3 in TS 36.211 [30]
CP length of cell 2			Normal	
Time offset between cells			3 ms	Asynchronous cells
Access Barring Information		-	Not sent	No additional delays in random access procedure.
Treselection		s	0	
DRX cycle length		s	1,28	
HCS			Not used	
T1		s	>20	During T1, cell 2 shall be powered off, and during the off time its physical cell identity shall be changed. The intention is to ensure that cell 2 has not been detected by the UE prior to the start of period T2.
T2			85	T2 needs to be defined so that cell re-selection reaction time is taken into account.
T3		s	25	T3 needs to be defined so that cell re-selection reaction time is taken into account.

Table 8.2.2.6.1.4.2.1-2: Cell specific test parameters for cell re-selection UTRA TDD to E-UTRA TDD test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)					
		0			DwPTS		
Timeslot Number		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number (Note1)		Channel 1					
PCCPCH_Ec/Ior	dB	-3	-3	-3			
DwPCH_Ec/Ior	dB				0	0	0
OCNS_Ec/Ior	dB	-3	-3	-3			
\hat{I}_{or}/I_{oc}	dB	11	11	11	11	11	11
I_{oc}	dBm/1.28 MHz	-80					
PCCPCH RSCP	dBm	-72	-72	-72	n.a.		
Propagation Condition		AWGN					
Qrxlevmin	dBm	-103					
Qoffset1s,n	dB	C1, C2: 0					
Qhyst1s	dB	0					
Threshx, high (Note2)	dB	46 (-94dBm)					
Sprioritysearch1	dB	24					
Sprioritysearch2	dB	0					
SsearchE-UTRA	dB	Not sent					
Note1: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.							
Note2: This refers to the value of Threshx, high which is included in UTRA system information, and is a threshold for the E-UTRA target cell							

Table 8.2.2.6.1.4.2.1-3: Cell specific test parameters for cell re-selection UTRA TDD to E-UTRA TDD test case (cell 2)

Parameter	Unit	Cell 2		
		T1	T2	T3
E-UTRA RF Channel Number		2		
BWchannel	MHz	10		
OCNG Pattern defined in D.2.2 (OP.2 TDD) in TS 36.521-3 [33]		OP.2 TDD		
PBCH_RA	dB	0	0	0
PBCH_RB	dB			
PSS_RB	dB			
SSS_RB	dB			
PCFICH_RA	dB			
PHICH_RA	dB			
PHICH_RA	dB			
PDCCH_RA	dB			
PDCCH_RA	dB			
PDSCH_RA	dB			
PDSCH_RA	dB			
OCNG_RA (Note 1)	dB			
OCNG_RB (Note 1)	dB			
Qrxlevmin	dBm/15kHz	-140	-140	-140
N_{oc}	dBm/15kHz	-98		
\hat{E}_s/N_{oc}	dB	-inf	11	-3
RSRP	dBm/15kHz	-inf	-87	-101
$\hat{E}_s/I_{0.95}$	dB	-inf	11	-3
Snonintrasearch	dB	Not sent		
Threshserving, low	dB	46 (-94dBm)		
Threshx, low (Note2)	dB	24 (-79dBm)		
Propagation Condition		AWGN		
Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.				
Note2: This refers to the value of Threshx, low which is included in E-UTRA system information, and is a threshold for the UTRA target cell				

8.2.2.6.1.4.2.2 Procedure

- 1) The SS activates cell 1 and cell 2 with T1 defined parameters in tables 8.2.2.6.1.5.2-1 and 8.2.2.6.1.5.2-2 and monitors cell 1 and 2 for random access requests from the UE,
- 2) The UE is switched on,
- 3) The SS and the UE shall perform a location registration procedure on cell 1.
- 4) After T1 from the end of step 3), the parameters are changed as described for T2 in tables 8.2.2.6.1.5.2-1 and 8.2.2.6.1.5.2-2.
- 5) The SS waits for random access request information from the UE to perform cell re-selection procedure on cell 2.
- 6) If the UE camps on cell 2, and starts to send preambles on the PRACH for sending the RRC CONNECTION REQUEST message to perform a Tracking Area Update procedure on cell 2 within 81 s then the number of successful tests is increased by one. Otherwise, the number of failure tests is increased by one.
- 7) After the re-selection or when T2 expires, the parameters are changed as described for T3 as specified in tables 8.2.2.6.1.5.2-1 and 8.2.2.6.1.5.2-2.
- 8) The SS and the UE shall perform a location registration procedure on cell 1.

9) After the re-selection or when T3 expires, the parameters are changed as described for T1 in tables 8.2.2.6.1.5.2-1 and 8.2.2.6.1.5.2-2. During T1, Cell 2 shall be powered off and the SS shall set Cell 2 physical cell identity = ((current cell 2 physical cell identity +1) mod 14 + 2).

10) When T1 expires, the parameters are changed as described for T2 in tables 8.2.2.6.1.5.2-1 and 8.2.2.6.1.5.2-2.

11) Repeat steps 5) to 10) until the confidence level according to Tables G.2.3-1 in TS 36.521-3 [33] is achieved.

8.2.2.6.1.4.2.3 Message contents

All messages indicated above shall use the same content as described in the default message content in TS 36.508 [28] clause 4.4 and 4.6 with the following exceptions:

SystemInformationBlock Type 19: for inter-RAT UTRA TDD - EUTRAN TDD is of higher priority cell re-selection

Derivation Path: TS 36.508 [28] clause 4.4.4.1, Table 4.4.4.1-1 SystemInformationBlockType19			
Information Element	Value/remark	Comment	Condition
SystemInfoType19 ::= SEQUENCE {			
utra-TDD-FrequencyList SEQUENCE (SIZE (1..maxNumTDDFreqs)) OF SEQUENCE {			
Priority	3	UTRA is of lower priority	
s-PrioritySearch1	24		
s-PrioritySearch2	0		
}			
eutra-FrequencyAndPriorityInfoList SEQUENCE (SIZE (1..maxNumEUTRAFreqs)) OF SEQUENCE {		<i>n</i> denotes the index of the entry	
Priority	5	E-UTRA is of higher priority	
qRxLevMinEUTRA	-70 (-140 dBm)		
Thresh _x , high	46 dB		
}			
}			

PRACH-ConfCommonDEFAULT: (TDD) for Inter-RAT cell re-selection

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-7 PRACH-ConfCommonDEFAULT			
Information Element	Value/remark	Comment	Condition
PRACH-ConfigInfo SEQUENCE {			
prach-ConfigIndex	53		
}			

- 8.2.2.6.1.4.3 7.68Mcps Option
 8.2.2.6.1.5 Test requirement
 8.2.2.6.1.5.1 3.84Mcps Option
 8.2.2.6.1.5.2 1.28Mcps Option

Table 8.2.2.6.1.5.2-1: Cell specific test parameters for cell re-selection UTRA TDD to E-UTRA TDD test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)					
		0			DwPTS		
Timeslot Number		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number (Note1)		Channel 1					
PCCPCH_Ec/Ior	dB	-3	-3	-3			
DwPCH_Ec/Ior	dB				0	0	0
OCNS_Ec/Ior	dB	-3	-3	-3			
\hat{I}_{or}/I_{oc}	dB	11	11	11	11	11	11
I_{oc}	dBm/1.28 MHz	-80					
PCCPCH RSCP	dBm	-72	-72	-72	n.a.		
Propagation Condition		AWGN					
Qrxlevmin	dBm	-103					
Qoffset1s,n	dB	C1, C2: 0					
Qhyst1s	dB	0					
Threshx, high (Note2)	dB	46 (-94dBm)					
Sprioritysearch1	dB	24					
Sprioritysearch2	dB	0					
SsearchE-UTRA	dB	Not sent					
Note1: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.							
Note2: This refers to the value of Thresh _{x,high} which is included in UTRA system information, and is a threshold for the E-UTRA target cell							

Table 8.2.2.6.1.5.2-2: Cell specific test parameters for cell re-selection UTRA TDD to E-UTRA TDD test case (cell 2)

Parameter	Unit	Cell 2		
		T1	T2	T3
E-UTRA RF Channel Number		2		
BW_{channel}	MHz	10		
OCNG Pattern defined in D.2.2 (OP.2 TDD) in TS 36.521-3 [33]		OP.2 TDD		
PBCH_RA	dB	0	0	0
PBCH_RB	dB			
PSS_RA	dB			
SSS_RA	dB			
PCFICH_RB	dB			
PHICH_RA	dB			
PHICH_RB	dB			
PDCCH_RA	dB			
PDCCH_RB	dB			
PDSCH_RA	dB			
PDSCH_RB	dB			
OCNG_RA (Note 1)	dB			
OCNG_RB (Note 1)	dB			
$Q_{rxlevmin}$	dBm	-140	-140	-140
N_{oc}	dBm/15kHz	-98		
\hat{E}_s / N_{oc}	dB	-inf	11	-3
RSRP	dBm/15kHz	-inf	-87	-101
\hat{E}_s / I_{ot}	dB	-inf	11	-3
Snonintrasearch	dB	Not sent		
Thresh _{serving, low}	dB	46 (-94dBm)		
Thresh _{x, low} (Note2)	dB	24 (-79dBm)		
Propagation Condition		AWGN		
Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.				
Note2: This refers to the value of Thresh _{x, low} which is included in E-UTRA system information, and is a threshold for the UTRA target cell				

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95% .

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.6.1.5.3 7.68Mcps Option

8.2.2.6.2 UTRA to E-UTRA TDD cell reselection: E-UTRA is of lower priority

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.2.2.6.2.1 Definition and application

8.2.2.6.2.1.1 3.84 Mcps Option

8.2.2.6.2.1.2 1.28Mcps Option

The cell reselection delay to low priority is defined as the time from the beginning of time period T2, to the moment when the UE camps on cell2, and start to send preamble on the PRACH for the RRC CONNECTION REQUEST message on cell2.

This test is for case when the UE camps on a 1.28Mcps TDD cell and reselects to a E-UTRA TDD cell which is of lower priority.

The requirement and this test apply to release 9 and later releases UTRA 1.28Mcps TDD UEs that support release 8 and later releases E-UTRA TDD.

8.2.2.6.2.1.3 7.68Mcps Option

8.2.2.6.2.2 Minimum requirement

8.2.2.6.2.2.1 3.84 Mcps Option

8.2.2.6.2.2.2 1.28Mcps Option

The cell re-selection delay to lower priority shall be less than 21 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

NOTE: The cell re-selection delay to lower priority cell can be expressed as: $T_{\text{evaluateE-UTRA}} + T_{\text{SI}}$.

Where:

$T_{\text{evaluateE-UTRA}}$ 19.2s, See Table 4.2A in section 4.2.2.7 in 25.123

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell; 1280 ms is assumed in this test case.

This gives a total of 20.48 s, allow 21 s for lower priority cell reselection in the test case.

8.2.2.6.2.2.3 7.68Mcps Option

8.2.2.6.2.3 Test purpose

This test verifies the UE meet minimum requirement for the case where the UE camps on a TDD cell and reselects to a E-UTRA TDD cell which is of lower priority.

8.2.2.6.2.4 Method of test

8.2.2.6.2.4.1 3.84Mcps Option

8.2.2.6.2.4.2 1.28Mcps Option

8.2.2.6.2.4.2.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table J.2 in Annex J.

This test scenario comprised of 1 UTRA TDD serving cell ,and 1 E-UTRA TDD cell to be re-selected. Test parameters are given in table 8.2.2.6.2.4.2.1-1, 8.2.2.6.2.4.2.1-2 and 8.2.2.6.2.4.2.1-3. The test consists of two successive time periods, with time duration of T1 and T2 respectively. At T1 the UE is camped on to cell1. Cell2 is of lower priority than cell1.

Table 8.2.2.6.2.4.2.1-1: General test parameters for UTRAN (1.28 Mcps TDD OPTION) to E-UTRAN TDD Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell 1	UTRA 1.28 Mcps TDD option cell
T1 end condition	Active cell		Cell1	UE shall perform reselection to cell 1 during T1 for subsequent iterations of the test.
	Neighbour cell		Cell2	E-UTRA TDD cell
T2 end condition	Active cell		Cell2	UE shall perform reselection to cell 2 during T2
	Neighbour cell		Cell1	UTRA 1.28 Mcps TDD OPTION cell
Uplink-downlink configuration of cell 2			1	As specified in table 4.2.2 in TS 36.211 [30]
Special subframe configuration of cell 2			6	As specified in table 4.2.1 in TS 36.211 [30]
PRACH configuration of cell 2			53	As specified in table 4.7.1-3 in TS 36.211 [30]
CP length of cell 2			Normal	
Time offset between cells			3 ms	Asynchronous cells
Access Barring Information		-	Not sent	No additional delays in random access procedure.
Treselction		s	0	
DRX cycle length		s	1,28	
HCS			Not used	
T1		s	85	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	25	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.2.2.6.2.4.2.1-2: Cell specific test parameters for cell re-selection UTRA TDD to E-UTRA TDD test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
		0		DwPTS	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number (Note1)		Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3		
DwPCH_Ec/Ior	dB			0	0
OCNS_Ec/Ior	dB	-3	-3		
\hat{I}_{or} / I_{oc}	dB	11	-3	11	-3
I_{oc}	dBm/1.28 MHz	-80			
PCCPCH RSCP	dBm	-72	-86	n.a.	n.a.
Propagation Condition		AWGN			
Qrxlevmin	dBm	-103			
Qoffset1s,n	dB	C1, C2: 0			
Qhyst1s	dB	0			
Threshserving, low	dB	24 (-79dBm)			
Threshx, low (Note2)	dB	46 (-94dBm)			
Sprioritysearch1	dB	62			
Sprioritysearch2	dB	0			
SsearchE-UTRA	dB	Not send			
Note1: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number. Note2: This refers to the value of Threshx, low which is included in UTRA system information, and is a threshold for the E-UTRA target cell					

Table 8.2.2.6.2.4.2.1-3: Cell specific test parameters for cell re-selection UTRA TDD to E-UTRA TDD test case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2
E-UTRA RF Channel Number		2	
BWchannel	MHz	10	
OCNG Pattern defined in D.2.2 (OP.2 TDD) in TS 36.521-3 [33]		OP.2 TDD	
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RB	dB		
SSS_RB	dB		
PCFICH_RA	dB		
PHICH_RA	dB		
PHICH_RA	dB		
PDCCH_RA	dB		
PDCCH_RA	dB		
PDSCH_RA	dB		
PDSCH_RA	dB		
OCNG_RA (Note1)	dB		
OCNG_RB (Note1)	dB		
Qrxlevmin	dBm/15kHz	-140	-140
N_{oc}	dBm/15kHz	-98	
RSRP	dBm/15kHz	-87	-87
$\hat{E}_s/I_{0.9}$	dB	11	11
Threshx, high (Note2)	dB	24(-79dBm)	
Snonintrasearch	dB	46	
Propagation Condition		AWGN	
Note1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols. Note2: This refers to the value of Threshx, high which is included in E-UTRA system information, and is a threshold for the UTRA target cell			

8.2.2.6.2.4.2.2 Procedure

- 1) The SS activates cell1 with T1 defined parameters in tables 8.2.2.6.2.5.2-1 and 8.2.2.6.2.5.2-2 and monitors cell1 for random access requests from the UE,
- 2) The UE is switched on,
- 3) The SS and the UE shall perform a location registration procedure on cell1. T1 starts.
- 4) After the re-selection or when T1 expires, the parameters are changed as described for T2 in tables 8.2.2.6.2.5.2-1 and 8.2.2.6.2.5.2-2.
- 5) The SS waits for random access request information from the UE to perform cell re-selection procedure on cell 2.
- 6) If the UE camps on cell 2 and starts to send preambles on the PRACH for sending the RRC CONNECTION REQUEST message to perform a Tracking Area Update procedure on cell 2 within 21 s, then the number of successful tests is increased by one. Otherwise, the number of failure tests is increased by one.
- 7) After the re-selection or when T2 expires, the parameters are changed as defined for T1 in tables 8.2.2.6.2.5.2-1 and 8.2.2.6.2.5.2-2.
- 8) The SS and the UE shall perform a location registration procedure on cell 1.
- 9) Repeat steps 4) to 8) until the confidence level according to Tables G.2.3-1 in TS 36.521-3 [33] is achieved.

8.2.2.6.2.4.2.3 Message contents

All messages indicated above shall use the same content as described in the default message content in TS 36.508 [28] clause 4.4 and 4.6 with the following exceptions:

SystemInformationBlock Type 19: for inter-RAT UTRA TDD - EUTRAN TDD is of lower priority cell re-selection

Derivation Path: TS 36.508 [28] clause 4.4.4.1, Table 4.4.4.1-1 SystemInformationBlockType19			
Information Element	Value/remark	Comment	Condition
SystemInfoType19 ::= SEQUENCE {			
utra-PriorityInfoList SEQUENCE {			
utra-ServingCell SEQUENCE {			
Priority	5	UTRA is of higher priority	
s-PrioritySearch1	62	Maximum value	
s-PrioritySearch2	0		
threshServingLow	24 dB		
}			
eutra-FrequencyAndPriorityInfoList SEQUENCE (SIZE (1..maxNumEUTRAFreqs)) OF SEQUENCE			
priority	3	E-UTRA is of lower priority	
qRxLevMinEUTRA	-70 (-140 dBm)		
Threshx, low	46 dB		
}			
}			

PRACH-ConfCommonDEFAULT: (FDD) for Inter-RAT cell re-selection

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-7 PRACH-ConfCommonDEFAULT			
Information Element	Value/remark	Comment	Condition
PRACH-ConfigInfo SEQUENCE {			
prach-ConfigIndex	53		
}			

- 8.2.2.6.2.4.3 7.68Mcps Option
 8.2.2.6.2.5 Test requirement
 8.2.2.6.2.5.1 3.84Mcps Option
 8.2.2.6.2.5.2 1.28Mcps Option

Table 8.2.2.6.2.5.2-1: Cell specific test parameters for cell re-selection UTRA TDD to E-UTRA TDD test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
		0		DwPTS	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number (Note1)		Channel 1			
PCCPCH_Ec/lor	dB	-3	-3		
DwPCH_Ec/lor	dB			0	0
OCNS_Ec/lor	dB	-3	-3		
\hat{I}_{or}/I_{oc}	dB	11	-3	11	-3
I_{oc}	dBm/1.28 MHz	-80			
PCCPCH RSCP	dBm	-72	-86	n.a.	n.a.
Propagation Condition		AWGN			
Qrxlevmin	dBm	-103			
Qoffset1s,n	dB	C1, C2: 0			
Qhyst1s	dB	0			
Threshserving, low	dB	24 (-79dBm)			
Threshx, low (Note2)	dB	46 (-94dBm)			
Sprioritysearch1	dB	62			
Sprioritysearch2	dB	0			
SsearchE-UTRA	dB	Not send			
Note1: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.					
Note2: This refers to the value of Threshx, low which is included in UTRA system information, and is a threshold for the E-UTRA target cell					

Table 8.2.2.6.2.5.2-2: Cell specific test parameters for cell re-selection UTRA TDD to E-UTRA TDD test case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2
E-UTRA RF Channel Number		2	
BWchannel	MHz	10	
OCNG Pattern defined in D.2.2 (OP.2 TDD) in TS 36.521-3 [33]		OP.2 TDD	
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RA	dB		
SSS_RA	dB		
PCFICH_RB	dB		
PHICH_RA	dB		
PHICH_RB	dB		
PDCCH_RA	dB		
PDCCH_RB	dB		
PDSCH_RA	dB		
PDSCH_RB	dB		
OCNG_RA (Note1)	dB		
OCNG_RB (Note1)	dB		
Qrxlevmin	dBm	-140	-140
N_{oc}	dBm/15kHz	-98	
RSRP	dBm/15kHz	-87	-87
\hat{E}_s/I_{ot}	dB	11	11
Thresh _{x,high} (Note2)	dB	24(-79dBm)	
Snonintrasearch	dB	46	
Propagation Condition		AWGN	
Note1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols. Note2: This refers to the value of Thresh _{x,high} which is included in E-UTRA system information, and is a threshold for the UTRA target cell			

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95% .

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.6.2.5.3 7.68Mcps Option

8.2.2.7 Scenario 6: Inter-band Cell Re-selection for 1.28 Mcps TDD UE

8.2.2.7.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell parameters to the moment when the UE camps on a new cell, and starts to send SYNCH-UL sequence in the UpPTS for sending the RRC CONNECTION REQUEST to perform a Location Registration on the new cell.

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.2.2.7.2 Minimum requirement

The cell re-selection delay shall be less than 8 s.

8.2.2.7.3 Test purpose

This test is to verify the requirement for the cell re-selection delay in the cross frequency band case.

8.2.2.7.4 Method of test

8.2.2.7.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

Cell condition:

There are six cells. Two frequency points are in frequency band a and frequency band b respectively. (The cells are two service cells and four background cells. The service cells use different frequencies. Every two background cells use the same frequency.)

Signal propagation condition: AWGN

Test instrument: Noise source

Table 8.2.2.7.4.1-1 General test parameters for inter-frequency cell re-selection

Parameter		Unit	Value	Remarks
Initial conditions	Active cell		Cell1	
	Neighbour cell		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	
Qrxlevmin		dBm	-103	
Access Service Class (ASC#0) - Persistence value			1	
TSI		s	1.28	
DRX cycle length		s	1.28	
T1		s	30	
T2		s	15	

Table 8.2.2.7.4.1-2 Cell settings for inter-frequency cell re-selection

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		DWPTS		0		DWPTS		0		DWPTS	
Timeslot		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRARF Channel Number (Note 1)		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	10	4	10	4	4	10	4	10	-1	-1	-1	-1
PCCPCH RSCP	dBm	-63	-69			-69	-63			-74	-74		
Qoffset1s,n	dB	C1, C2:0; C1, C3:0; C1, C4:0 C1, C5:0; C1, C6:0				C2, C1:0; C2, C3:0; C2, C4:0C2, C5:0; C2, C6:0				C3, C1:0; C3, C2:0; C3, C4:0 C3, C5:0; C3, C6:0			
Qhyst1s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
Timeslot		Cell 4				Cell 5				Cell 6			
		0		DWPTS		0		DWPTS		0		DWPTS	
UTRARF Channel Number (Note 1)		Channel 1				Channel 2				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1s,n	dB	C4, C1:0; C4, C2:0; C4, C3:0 C4, C5:0; C4, C6:0				C5, C1:0; C5, C2:0; C5, C3:0 C5, C4:0; C5, C6:0				C6, C1:0; C6, C2:0; C6, C3:0 C6, C4:0; C6, C5:0			
Qhyst1s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/ 1.28 MHz	-70											
Propagation Condition		AWGN											
Note 1: Channel 1 is in frequency band a, and channel 2 is in frequency band f.													

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateNTDD} + T_{SI}$, where:

To evaluate NTDD: A DRX cycle length of 1280 ms is assumed for this test case, and this leads to a $T_{evaluateNTDD}$ of 6.4 s according to "Appendix F."

TSI: Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 7.68s, allow 8s in the test case.

8.2.2.7.4.2 Procedure

- 1) The SS activates cells 1–6 with T1 defined parameters and monitors cells 1 and 2 for RRC CONNECTION REQUEST messages from the UE.
- 2) The UE is switched on.
- 3) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- 4) After 15 seconds, the SS shall switch the power settings from T1 to T2.
- 5) The SS waits for SYNCH-UL sequence in the UpPTS for sending RRC CONNECTION REQUEST messages from the UE.
- 6) After another 15 seconds, the SS shall switch the power settings as described for T1.
- 7) The SS waits for SYNCH-UL sequence in the UpPTS for sending RRC CONNECTION REQUEST messages from the UE.
- 8) Repeat steps 2 to 7 until the required confidence level is achieved.

NOTE: T1 is initially 30s to allow enough time for the UE to search for cells.

8.2.2.7.5 Test Requirements

The cell re-selection delay shall be less than 8s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95%.

In step 3, after the UE has responded on cell 1, it shall not respond on any other cell.

In step 5, the UE shall respond on cell 2 within eight seconds.

In step 7, the UE shall respond on cell 1 within eight seconds.

8.3 UTRAN Connected Mode Mobility

8.3.1 TDD/TDD Handover for 3,84 Mcps Option

8.3.1.1 Handover to intra-frequency cell

8.3.1.1.1 Definition and applicability

Handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH.

The requirements and this test apply to the UTRA TDD UE.

8.3.1.1.2 Minimum requirement

The interruption time shall be less than 40 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/TDD intra-frequency handover is commanded, the interruption time shall be less than,

$$T_{\text{interrupt}} = T_{\text{offset}} + T_{\text{UL}} + 30 * F_{\text{SFN}} + 20 * KC + 180 * UC \text{ ms}$$

where,

T_{offset} Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel

T_{UL} Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell

F_{SFN}	Equal to 1 if SFN decoding is required and equal to 0 otherwise
KC	Equal to 1 if a known target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

An intra-frequency TDD target cell shall be considered as known by the UE, if either or both of the following conditions are true:

- the target cell has been measured during the last 5 seconds
- the UE has had a radio link connected to the target cell during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.1.

8.3.1.1.3 Test purpose

The purpose of this test is to verify the requirement for the intra-frequency handover delay in CELL_DCH state in the single carrier case.

8.3.1.1.4 Method of test

8.3.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1.1.1 and 8.3.1.1.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP and SFN-CFN observed time difference shall be reported together with Event 1G. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 12.

Table 8.3.1.1.1: General test parameters for Handover to intra-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	
HCS			Not used	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	
T1		s	10	
T2		s	10	
T3		s	10	

Table 8.3.1.1.2: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	Cell 1						Cell 2					
		0			4			0			5		
DL timeslot number		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1						Channel 1					
PCCPCH_Ec/I _{or}	dB	-3			n.a.			-3			n.a.		
SCH_Ec/I _{or}	dB	-9			n.a.			-9			n.a.		
SCH_t _{offset}	dB	0			n.a.			5			n.a.		
DPCH_Ec/I _{or}	dB	n.a.			Note 1		n.a.	n.a.			n.a.		Note 1
OCNS_Ec/I _{or}	dB	-3,12			Note 2		n.a.	n.a.	-3,12		n.a.		Note 2
\hat{I}_{or}/I_{oc}	dB	1						-Inf.	3		-Inf.	3	
PCCPCH RSCP	dBm	-72			n.a.			-Inf.	-70		n.a.		
I_{oc}	dBm/3, 84 MHz	-70											
Propagation Condition		AWGN											

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.

8.3.1.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 10 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.
- 8) After 10 seconds, the SS shall switch the power settings from T2 to T3

- 9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 10 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat step 1-10 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

Information Element/Group name	Value/Remark
Note 1:	The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.
Note 2:	Reporting interval = 0 ms means no periodical reporting

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	TDD
-CHOICE <i>mode</i>	Same UARFCN as used for cell 2
-UARFCN (Nt)	
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	3,84 Mcps TDD
-UL Target SIR	Not Present
-CHOICE <i>UL OL PC info</i>	Individually signalled
-CHOICE <i>TDD option</i>	3,84 Mcps TDD
-Individual Timeslot interference info	1
-Individual timeslot interference (10.3.6.38)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	3,84 Mcps TDD
-Timeslot number	12
-UL Timeslot Interference	-90 dBm
-CHOICE <i>mode</i>	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	3,84 Mcps
-Timeslot number	12
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-Choice <i>TDD option</i>	3,84 Mcps
-Choice Burst Type	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	3,84 Mcps
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots

Information Element	Value/Remark
Downlink radio resources	
-CHOICE <i>mode</i>	TDD
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE <i>mode</i>	TDD
-TPC Step size	1 dB
-CHOICE <i>mode</i>	TDD
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	3,84 Mcps
-TX Diversity mode (10.3.6.86)	None
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	3,84 Mcps
-CHOICE <i>sync case</i>	Case 2
-Timeslot	0
-Cell parameters ID	20
-SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	TDD
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	3,84 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE <i>TDD option</i>	3,84 Mcps
-CHOICE <i>Burst Type</i>	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	3,84 Mcps
-First timeslot channelisation codes (10.3.6.17)	
-CHOICE <i>codes representation</i>	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/2
-CHOICE <i>more timeslots</i>	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Checked that this IE is present
-CHOICE mode	TDD
-Cell parameters ID	20
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	40

8.3.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.1.2 Handover to inter-frequency cell

8.3.1.2.1 Definition and applicability

The handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH.

The requirements and this test apply to the UTRA TDD UE.

8.3.1.2.2 Minimum requirement

The interruption time shall be less than 40 ms in the dual carrier case when the cell is known by the UE and the SFN of the target cell needs to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/TDD inter-frequency handover is commanded, the interruption time shall be less than,

$$T_{\text{interrupt}} = T_{\text{offset}} + T_{\text{UL}} + 30 * F_{\text{SFN}} + 20 * KC + 180 * UC \text{ ms}$$

where,

T_{offset} Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel

T_{UL}	Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell
F_{SFN}	Equal to 1 if SFN decoding is required and equal to 0 otherwise
KC	Equal to 1 if a known target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

An inter-frequency TDD target cell shall be considered as known by the UE, if either or both of the following conditions are true:

- the target cell has been measured during the last 5 seconds
- the UE has had a radio link connected to the target cell during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

8.3.1.2.3 Test purpose

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL_DCH state in the dual carrier case.

8.3.1.2.4 Method of test

8.3.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1.2.1 and 8.3.1.2.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The PCCPCH RSCP and SFN-CFN observed time difference of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. The UL DPCH shall be transmitted in timeslot 12.

Table 8.3.1.2.1: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	
HCS			Not used	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-80	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T _{SI}		s	1,28	The value shall be used for all cells in the test.
T1		s	10	
T2		s	10	
T3		s	10	

Table 8.3.1.2.2: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1						Cell 2					
		0			4			2			5		
DL timeslot number		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1						Channel 2					
PCCPCH_Ec/I _{or}	dB	-3			n.a.			-3			n.a.		
SCH_Ec/I _{or}	dB	-9			n.a.			-9			n.a.		
SCH_t _{offset}	dB	0			n.a.			5			n.a.		
DPCH_Ec/I _{or}	dB	n.a.			Note 1		n.a.	n.a.			n.a.		Note 1
OCNS_Ec/I _{or}	dB	-3,12			Note 2		n.a.	n.a.	-3,12		n.a.		Note 2
\hat{I}_{or}/I_{oc}	dB	1						-Inf.	7		-Inf.	7	
PCCPCH RSCP	dBm	-72			n.a.			-Inf.	-66		n.a.		
I _{oc}	dBm/3, 84 MHz	-70											
Propagation Condition		AWGN											
Note 1: The DPCH level is controlled by the power control loop													
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or} .													

8.3.1.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]

- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 10 seconds, the SS shall switch the power settings from T1 to T2.

- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.
- 8) After 10 seconds, the SS shall switch the power settings from T2 to T3
- 9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 10 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat step 1-10 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	Not Present
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	Inter-frequency reporting criteria
-CHOICE <i>reporting criteria</i>	
-Inter-frequency reporting criteria	
-Filter coefficient	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	No Report
-SFN-SFN observed time difference reporting indicator	TRUE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	FALSE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report cells within monitored set on non-used frequency
-Maximum number of reported cells per reported non-used frequency	1
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE <i>report criteria</i>	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2C
-Threshold used frequency	Not Present
-W used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report cells within monitored set on non-used frequency
-Maximum number of reported cells per reported non-used frequency	1
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-80 dBm
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	TDD
-CHOICE <i>mode</i>	Same UARFCN as used for cell 2
-UARFCN (Nt)	
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	3,84 Mcps TDD
-UL Target SIR	Not Present
-CHOICE <i>UL OL PC info</i>	Individually signalled
-CHOICE <i>TDD option</i>	3,84 Mcps TDD
-Individual Timeslot interference info	1
-Individual timeslot interference (10.3.6.38)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	3,84 Mcps TDD
-Timeslot number	12
-UL Timeslot Interference	-90 dBm
-CHOICE <i>mode</i>	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	3,84 Mcps
-Timeslot number	12
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE <i>TDD option</i>	3,84 Mcps
-CHOICE <i>Burst Type</i>	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	3,84 Mcps
-First timeslot code list	1
-Channelisation code	8/1
-CHOICE <i>more timeslots</i>	No more timeslots

Information Element	Value/Remark
Downlink radio resources	
-CHOICE <i>mode</i>	TDD
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE <i>mode</i>	TDD
-TPC Step size	1 dB
-CHOICE <i>mode</i>	TDD
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	3,84 Mcps
-TX Diversity mode (10.3.6.86)	None
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
- CHOICE <i>mode</i>	TDD
- CHOICE <i>TDD option</i>	3,84 Mcps
- CHOICE <i>sync case</i>	Case 2
- Timeslot	2
- Cell parameters ID	20
- SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	TDD
- DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
- Downlink DPCH timeslots and codes (10.3.6.32)	
- First individual timeslot info (10.3.6.37)	
- Timeslot Number (10.3.6.84)	
- CHOICE <i>TDD option</i>	3,84 Mcps
- Timeslot number	5
- TFCl existence	True
- Midamble shift and burst type (10.3.6.41)	
- CHOICE <i>TDD option</i>	3,84 Mcps
- CHOICE <i>Burst Type</i>	Type 1
- Midamble Allocation Mode	Default
- Midamble configuration burst type 1 and 3	16
- Midamble shift	Not present
- CHOICE <i>TDD option</i>	3,84 Mcps
- First timeslot channelisation codes (10.3.6.17)	
- CHOICE <i>codes representation</i>	Consecutive codes
- First channelisation code	16/1
- Last channelisation code	16/2
- CHOICE <i>more timeslots</i>	No more timeslots
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2 in Table 8.6.2.4.1.2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Checked that this IE is present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2 in Table 8.6.2.4.1.2
-CHOICE mode	TDD
-Primary CCPCH Info	
-CHOICE mode	TDD
-CHOICE TDD Option	3,84 Mcps TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

8.3.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.1A TDD/TDD Handover for 1,28 Mcps Option

8.3.1A.1 Handover to intra-frequency cell

8.3.1A.1.1 Scenario 1

This test case is applicable for UE handovers in single frequency network and UE handovers from primary frequency to primary frequency in multi-frequency network

8.3.1A.1.1.1 Definition and applicability

Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCCH or the SYNC-UL in case that a handover with SYNCH uplink exchange is recommended, including the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE 1,28 Mcps option.

8.3.1A.1.1.2 Minimum requirement

The hard handover delay shall be less than 160 ms when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

8.3.1A.1.1.3 Test purpose

The purpose of this test is to verify the requirement for the intra-frequency handover delay in CELL_DCH state.

8.3.1A.1.1.4 Method of test

8.3.1A.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1A.1.1.1 and 8.3.1A.1.1.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP and SFN-CFN observed timed difference shall be reported together with Event 1G. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time "now" with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE during period T2, after the UE has reported event 1G. The starting point of T3 is defined as the end of the last TTI containing the physical channel reconfiguration message.

Table 8.3.1A.1.1.1: General test parameters for Handover to intra-frequency cell

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2.2 and A.2.1.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	In the case of multi-frequency network, the UE has a RRC connection on the primary frequency in cell 1.
	Neighbour cell	Cell 2	
Final condition	Active cell	Cell 2	In the case of multi-frequency network, UE will handover to the primary frequency in cell 2.
O	dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		6 TDD neighbours on Channel 1	
T1	s	5	
T2	s	5	
T3	s	5	

Table 8.3.1A.1.1.2: Cell specific test parameters for Handover to intra-frequency cell 1,28Mcps option

Parameter	Unit	Cell 1								
		0			DwPTS			5		
Timeslot Number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1								
PCCPCH_Ec/I _{or}	dB	-3						n.a.		
DwPCH_Ec/I _{or}					0					
DPCH_Ec/I _{or}	dB	n.a.			n.a.			Note1	n.a.	
OCNS_Ec/I _{or}	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	3			3			3		
I_{oc}	dBm/1, 28 MHz	-70								
PCCPCH_RSCP	dBm	-70			n.a.			n.a.		
Propagation Condition		AWGN								
Parameter	Unit	Cell 2								
Timeslot Number		0			DwPTS			5		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number(NOTE3)		Channel 1								
PCCPCH_Ec/I _{or}	dB	-3						n.a.		
DwPCH_Ec/I _{or}					0					
DPCH_Ec/I _{or}	dB	n.a.			n.a.			n.a.	Note1	
OCNS_Ec/I _{or}	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	-Inf.	6		-Inf.	6		-Inf.		6
I_{oc}	dBm/1, 28 MHz	-70								
PCCPCH_RSCP	dBm	-Inf.	-67		n.a.			n.a.		
Propagation Condition		AWGN								
Note 1:	The DPCH level is controlled by the power control loop									
Note 2:	The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or} .									
Note3:	In the case of multi-frequency network, the UTRA RF Channel Number is the primary frequency's channel number.									

8.3.1A.1.4.1.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time "now".
- 8) After 5 seconds, the SS shall switch the power settings from T2 to T3
- 9) If the UE transmits the UL DPCH to cell 2 less than 160 ms from the beginning of time period T3 then the number of successful tests is increased by one UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.
- 10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

Information Element/Group name	Value/Remark
Note 1:	The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.
Note 2:	Reporting interval = 0 ms means no periodical reporting

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	30 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	TDD
- <i>TDD</i>	1,28 Mcps TDD
-UL target SIR	Not Present
-CHOICE <i>UL OL PC info</i>	Individually signalled
-CHOICE <i>TDD option</i>	
--1,28 Mcps TDD	1
-TPC step size	1
-CHOICE <i>mode</i>	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
-UL Target SIR	9 dB
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	2
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-Choice <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots
Downlink radio resources	
-CHOICE <i>mode</i>	TDD

Information Element	Value/Remark
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE <i>mode</i>	TDD
-TPC Step size	1 dB
-CHOICE <i>mode</i>	TDD
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
- <i>TSTD indicator</i> (10.3.6.85a)	TRUE
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
<i>TSTD indicator</i>	TRUE
-Cell parameters ID	0
-SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	TDD
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot channelisation codes (10.3.6.17)	
-CHOICE <i>codes representation</i>	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/2
-CHOICE <i>more timeslots</i>	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.3.1A.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.1A.1.2 Scenario 2

This test case is applicable for UE handovers from primary frequency to secondary frequency in the case of multi-frequency network.

8.3.1A.1.2.1 Definition and applicability

Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCH or the SYNC-UL in case that a handover with SYNCH uplink exchange is recommended, including the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE 1,28 Mcps option.

8.3.1A.1.2.2 Minimum requirement

The hard handover delay shall be less than 160 ms when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

8.3.1A.1.2.3 Test purpose

The purpose of this test is to verify the requirement for the intra-frequency handover delay in CELL_DCH state.

8.3.1A.1.2.4 Method of test

8.3.1A.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1A.1.2.1 and 8.3.1A.1.2.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used, and that P-CCPCH RSCP and SFN-CFN observed timed difference shall be reported together with Event 2C. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time "now" with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE during period T2, after the UE has reported event 1G. The starting point of T3 is defined as the end of the last TTI containing the physical channel reconfiguration message.

Table 8.3.1A.1.2.1: General test parameters for Handover to intra-frequency cell

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2.2 and A.2.1.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	The UE has a RRC connection on the secondary frequency in cell 1.
	Neighbour cell	Cell 2	
Final condition	Active cell	Cell 2	The UE will handover to the primary frequency in cell 2.
Hysteresis	dB	0	
Threshold non-used frequency	dBm	-75	Absolute threshold RSCP for Event 2C
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		6 TDD neighbours on Channel 1	
T1	s	5	
T2	s	5	
T3	s	5	

Table 8.3.1A.1.2.2: Cell specific test parameters for Handover to intra-frequency cell 1,28Mcps option

Parameter	Unit	Cell 1								
		0			DwPTS			5		
Timeslot Number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number(Note 3)		Channel 1								
PCCPCH_Ec/Ior	dB	-3						n.a.		
DwPCH_Ec/Ior					0					
DPCH_Ec/Ior	dB	n.a.			n.a.			Note1	n.a.	
OCNS_Ec/Ior	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	3			3			3		
I_{oc}	dBm/1, 28 MHz	-70								
PCCPCH_RSCP	dBm	-70			n.a.			n.a.		
Propagation Condition		AWGN								
Parameter	Unit	Cell 2								
Timeslot Number		0			DwPTS			5		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number(NOTE3)		Channel 2								
UTRA RF Channel Number(NOTE4)		Channel 1								
PCCPCH_Ec/Ior	dB	-3						n.a.		
DwPCH_Ec/Ior					0					
DPCH_Ec/Ior	dB	n.a.			n.a.			n.a.	Note 1	
OCNS_Ec/Ior	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	-Inf.	4		-Inf.	4		-Inf.	4	
I_{oc}	dBm/1, 28 MHz	-70								
PCCPCH_RSCP	dBm	-Inf.	-69		n.a.			n.a.		
Propagation Condition		AWGN								
Note 1:	The DPCH level is controlled by the power control loop									
Note 2:	The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} .									
Note3:	In the case of multi-frequency network, the UTRA RF Channel Number is the primary frequency's channel number.									
Note 4:	In the case of multi-frequency network, the UTRA RF Channel Number is the secondary frequency's channel number									

8.3.1A.1.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time "now".
- 8) After 5 seconds, the SS shall switch the power settings from T2 to T3
- 9) If the UE transmits the UL DPCH to cell 2 less than 160 ms from the beginning of time period T3 then the number of successful tests is increased by one UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.

10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	Not Present
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	Inter-frequency reporting criteria
-CHOICE <i>reporting criteria</i>	
-Inter-frequency reporting criteria	0
-Filter coefficient	TDD
-CHOICE <i>mode</i>	Primary CCPCH RSCP
-Measurement quantity for frequency quality estimate	
-Inter-frequency reporting quantity (10.3.7.21)	FALSE
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	Type 1
-SFN-SFN observed time difference reporting indicator	TRUE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting cell status (10.3.7.61)	Report cells within monitored set on non-used frequency
-CHOICE <i>reported cell</i>	1
-Maximum number of reported cells per reported non-used frequency	Not Present
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Inter-frequency measurement reporting criteria
-CHOICE <i>report criteria</i>	
-Inter-frequency measurement reporting criteria (10.3.7.19)	1
-Parameters required for each event	Event 2C
-Inter-frequency event identity (10.3.7.14)	Not Present
-Threshold used frequency	Not Present
-W used frequency	0 dB
-Hysteresis	0 ms
-Time to trigger	
-Reporting cell status (10.3.7.61)	Report cells within monitored set on non-used frequency
-CHOICE <i>reported cell</i>	1
-Maximum number of reported cells per reported non-used frequency	1
-Parameters required for each non-used frequency	-75 dBm
-Threshold non-used frequency	1
-W non-used frequency	
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	30 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	TDD
- <i>TDD</i>	1,28 Mcps TDD
-UL target SIR	Not Present
-CHOICE <i>UL OL PC info</i>	Individually signalled
-CHOICE <i>TDD option</i>	
--1,28 Mcps TDD	1
-TPC step size	1
-CHOICE <i>mode</i>	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
-UL Target SIR	9 dB
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	2
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-Choice <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots
Downlink radio resources	
-CHOICE <i>mode</i>	TDD

Information Element	Value/Remark
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE <i>mode</i>	TDD
-TPC Step size	1 dB
-CHOICE <i>mode</i>	TDD
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
- <i>TSTD indicator</i> (10.3.6.85a)	TRUE
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
<i>TSTD indicator</i>	TRUE
-Cell parameters ID	0
-SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	TDD
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot channelisation codes (10.3.6.17)	
-CHOICE <i>codes representation</i>	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/2
-CHOICE <i>more timeslots</i>	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.3.1A.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.1A.2 Handover to inter-frequency cell

8.3.1A.2.1 Scenario 1

This test case is applicable for UE handovers in single frequency network and UE handovers from primary frequency to the primary frequency in multi-frequency network.

8.3.1A.2.1.1 Definition and applicability

Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCH or the SYNC-UL in case that a handover with SYNCH uplink exchange is recommended, including the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE 1,28 Mcps option.

8.3.1A.2.1.2 Minimum requirement

The hard handover delay shall be less than 160ms when the cell is known by the UE and the SFN of the target cell needs to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

8.3.1A.2.1.3 Test purpose

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL_DCH state.

8.3.1A.2.1.4 Method of test

8.3.1A.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1A.2.1.1 and 8.3.1A.2.1.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The PCCPCH RSCP and SFN-CFN observed time difference of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE during period T2, after the UE has reported event 2C, The starting point of T3 is defined as the end of the last TTI containing the physical channel reconfiguration message.

Table 8.3.1A.2.1.1: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2.2 and A.2.1.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	In the case of multi-frequency network, the UE has a RRC connection on the primary frequency in cell 1.
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	In the case of multi-frequency network, the UE will handover to the primary frequency in cell 2.
Threshold non-used frequency		dBm	-75	Absolute threshold RSCP for Event 2C
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		s	5	
T2		s	10	
T3		s	5	

Table 8.3.1A.2.1.2: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1								
		0			DwPTS			5		
Timeslot Number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number(Note 3)		Channel 1								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor					0					
DPCH_Ec/lor	dB	n.a.			n.a.			Note1	n.a.	
OCNS_Ec/lor	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	3			3			3		
I_{oc}	dBm/1, 28 MHz	-70								
PCCPCH_RSCP	dBm	-70			n.a.			n.a.		
Propagation Condition		AWGN								
Parameter	Unit	Cell 2								
Timeslot Number		0			DwPTS			5		
UTRA RF Channel Number(Note 3)		Channel 2								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor					0					
DPCH_Ec/lor	dB	n.a.			n.a.			n.a.	Note 1	
OCNS_Ec/lor	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	-Inf.	4		-Inf.	4		-Inf.	4	
I_{oc}	dBm/1, 28 MHz	-70								
PCCPCH_RSCP	dBm	-Inf.	-69		n.a.			n.a.		
Propagation Condition		AWGN								
Note 1:	The DPCH level is controlled by the power control loop									
Note 2:	The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} .									
Note3:	In the case of multi-frequency network, the UTRA RF Channel Number is the primary frequency's channel number.									

8.3.1A.2.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time "now".
- 8) After 10 seconds, the SS shall switch the power settings from T2 to T3
- 9) If the UE transmits the UL DPCH to cell 2 less than 160 ms from the beginning of time period T3 then the number of successful tests is increased by one. UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.
- 10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat steps 1-10 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	1 Modify AM RLC Event trigger Not Present
-CHOICE <i>Measurement type</i> -Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) -Inter-frequency measurement quantity (10.3.7.18) -CHOICE <i>reporting criteria</i> -Inter-frequency reporting criteria -Filter coefficient -CHOICE <i>mode</i> -Measurement quantity for frequency quality estimate	Inter-frequency measurement Not Present Inter-frequency reporting criteria 0 TDD Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21) -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE <i>mode</i> -Timeslot ISCP reporting indicator -Proposed TGSN reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	FALSE FALSE Type 1 TRUE TRUE TDD TRUE FALSE TRUE TRUE
-Reporting cell status (10.3.7.61) -CHOICE <i>reported cell</i> -Maximum number of reported cells per reported non-used frequency -Measurement validity (10.3.7.51) -Inter-frequency set update (10.3.7.22) -CHOICE <i>report criteria</i>	Report cells within monitored set on non-used frequency 1 Not Present Not Present Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event -Inter-frequency event identity (10.3.7.14) -Threshold used frequency -W used frequency -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -CHOICE <i>reported cell</i> -Maximum number of reported cells per reported non-used frequency -Parameters required for each non-used frequency -Threshold non-used frequency -W non-used frequency	1 Event 2C Not Present Not Present 0 dB 0 ms Report cells within monitored set on non-used frequency 1 1 -75 dBm 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	now
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	TDD
-CHOICE <i>mode</i>	Same UARFCN as used for cell 2
-UARFCN (Nt)	
Uplink radio resources	
-Maximum allowed UL TX power	30 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	
-UL target SIR	Not Present
-CHOICE <i>UL OL PC info</i>	Individually signalled
-CHOICE <i>TDD option</i>	
-1,28 Mcps TDD	
-TPC stepsize	1
-CHOICE <i>mode</i>	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
-UL Target SIR	9 dB
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	2
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot code list	1
-Channelisation code	8/1
-CHOICE <i>more timeslots</i>	No more timeslots
Downlink radio resources	
-CHOICE <i>mode</i>	TDD
-Downlink information common for all radio links (10.3.6.24)	

Information Element	Value/Remark
-Downlink DPCH info common for all RL (10.3.6.18)	Initialise
-Timing indicator	Not Present
-CFN-targetSFN frame offset	
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE <i>mode</i>	TDD
-TPC Step size	1 dB
-CHOICE <i>mode</i>	TDD
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
-TSTD indicator (10.3.6.85a)	TRUE
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
- CHOICE <i>mode</i>	TDD
- CHOICE <i>TDD option</i>	1,28 Mcps
<i>TSTD indicator</i>	TRUE
- Cell parameters ID	0
- SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	TDD
- DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
- Downlink DPCH timeslots and codes (10.3.6.32)	
- First individual timeslot info (10.3.6.37)	
- Timeslot Number (10.3.6.84)	
- CHOICE <i>TDD option</i>	1,28 Mcps
- Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
- CHOICE <i>TDD option</i>	1,28 Mcps
- Midamble Allocation Mode	Default
- Midamble configuration	16
- Midamble shift	Not present
- CHOICE <i>TDD option</i>	1,28 Mcps
- First timeslot channelisation codes (10.3.6.17)	
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
- CHOICE <i>codes representation</i>	Consecutive codes
- First channelisation code	16/1
- Last channelisation code	16/2
- CHOICE <i>more timeslots</i>	No more timeslots
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency TDD test cases in clause 8.7 and is described in Annex I.

8.3.1A.2.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.1A.2.2 Scenario 2

This test case is applicable for UE handovers in single frequency network and UE handovers from primary frequency to the secondary frequency in multi-frequency network.

8.3.1A.2.2.1 Definition and applicability

Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCH or the SYNC-UL in case that a handover with SYNCH uplink exchange is recommended, including the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE 1,28 Mcps option.

8.3.1A.2.2.2 Minimum requirement

The hard handover delay shall be less than 160ms when the cell is known by the UE and the SFN of the target cell needs to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

8.3.1A.2.2.3 Test purpose

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL_DCH state.

8.3.1A.2.2.4 Method of test

8.3.1A.2.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1A.2.2.1 and 8.3.1A.2.2.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used. The PCCPCH RSCP and SFN-CFN observed time difference of the best cell on the unused frequency shall be reported together with Event 1G reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE during period T2, after the UE has reported event 1G, The starting point of T3 is defined as the end of the last TTI containing the physical channel reconfiguration message.

Table 8.3.1A.2.2.1: General test parameters for Handover to inter-frequency cell

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2.2 and A.2.1.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	In the case of multi-frequency network, the UE has a RRC connection on the primary frequency in cell 1.
	Neighbour cell	Cell 2	

Final condition	Active cell		Cell 2	In the case of multi-frequency network, the UE will handover to the secondary frequency in cell 2.
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		s	5	
T2		s	10	
T3		s	5	

Table 8.3.1A.2.2.2: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1								
		0			DwPTS			5		
Timeslot Number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number(Note 3)		Channel 1								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor					0					
DPCH_Ec/lor	dB	n.a.			n.a.			Note1	n.a.	
OCNS_Ec/lor	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	3			3			3		
I_{oc}	dBm/1, 28 MHz	-70								
PCCPCH_RSCP	dBm	-70			n.a.			n.a.		
Propagation Condition		AWGN								
Parameter	Unit	Cell 2								
Timeslot Number		0			DwPTS			5		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number(Note 3)		Channel 1								
UTRA RF Channel Number(Note 4)		Channel 2								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor					0					
DPCH_Ec/lor	dB	n.a.			n.a.			n.a.	Note 1	
OCNS_Ec/lor	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	-Inf.	6		-Inf.	6		-Inf.	6	
I_{oc}	dBm/1, 28 MHz	-70								
PCCPCH_RSCP	dBm	-Inf.	-67		n.a.			n.a.		
Propagation Condition		AWGN								
Note 1: The DPCH level is controlled by the power control loop										
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} .										
Note3: In the case of multi-frequency network, the UTRA RF Channel Number is the primary frequency's channel number.										
Note 4: In the case of multi-frequency network, the UTRA RF Channel Number is the secondary frequency's channel number.										

8.3.1A.2.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.

- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time “now”.
- 8) After 10 seconds, the SS shall switch the power settings from T2 to T3
- 9) If the UE transmits the UL DPCH to cell 2 less than 160 ms from the beginning of time period T3 then the number of successful tests is increased by one. UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.
- 10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat steps 1-10 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

Information Element/Group name	Value/Remark
Note 1:	The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.
Note 2:	Reporting interval = 0 ms means no periodical reporting

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	30 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	TDD
- <i>TDD</i>	1,28 Mcps TDD
-UL target SIR	Not Present
-CHOICE <i>UL OL PC info</i>	Individually signalled
-CHOICE <i>TDD option</i>	
--1,28 Mcps TDD	1
-TPC step size	1
-CHOICE <i>mode</i>	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
-UL Target SIR	9 dB
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	2
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-Choice <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots
Downlink radio resources	
-CHOICE <i>mode</i>	TDD

Information Element	Value/Remark
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE <i>mode</i>	TDD
-TPC Step size	1 dB
-CHOICE <i>mode</i>	TDD
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
- <i>TSTD indicator</i> (10.3.6.85a)	TRUE
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
<i>TSTD indicator</i>	TRUE
-Cell parameters ID	0
-SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	TDD
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot channelisation codes (10.3.6.17)	
-CHOICE <i>codes representation</i>	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/2
-CHOICE <i>more timeslots</i>	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency TDD test cases in clause 8.7 and is described in Annex I.

8.3.1A.2.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.1A.3 Handover to inter-band cell

8.3.1A.3.1 Scenario 1

This test case is applicable for UE handovers from primary frequency to the primary frequency in multi-band network.

8.3.1A.3.1.1 Definition and applicability

Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying handover to the transmission of the SYNC-UL, including the RRC procedure delay as defined in [9].

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.3.1A.3.1.2 Minimum Requirements

The inter-frequency hard handover delay shall be less than 160 ms when the cell is known by the UE and the SFN of the target cell does not need to be decoded.

8.3.1A.3.1.3 Test purpose

The purpose of this test is to verify that the hard handover success rate from primary frequency to primary frequency of the UE in CELL_DCH state meets the requirements of the specifications. (Here, the handover success means that the handover delay meets the related requirements.)

8.3.1A.3.1.4 Method of test

8.3.1A.3.1.4.1 Initial conditions

Test environment: normal,; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

Cell condition: In cell 1, the primary frequency uses frequency b of band a, and the secondary frequency uses frequencies a and c. In cell 2, the primary frequency uses frequency e of band f, and the secondary frequency uses frequencies d and f.

Signal propagation condition: AWGN

Test instrument: Noise source

The test parameters are given in table 1 and table 2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP and SFN-CFN observed time difference of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time "now" with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE during period T2, after the UE has reported event 2C. The starting point of T3 is defined as the end of the last TTI containing the physical channel reconfiguration message.

Table 8.3.1A.3.1 General test parameters for TD-SCDMA/TD-SCDMA primary frequency -> primary frequency hard handover (cross frequency band)

Parameter	Unit	Value	Remarks
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbit/s	As specified in TS 25.102 clause A.2.2.2 and A.2.1.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	
	Neighbour cell	Cell 2	
Final condition	Active cell	Cell 2	
Threshold non-used frequency	dBm	-75	Threshold RSCP for Event 2C
O	dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		6 TD-SCDMA neighbours on Channel 1 6 TD-SCDMA neighbours on Channel 2	
T1	s	5	
T2	s	10	
T3	s	5	

Table 8.3.1A.3.2 Cell specific test parameters for TD-SCDMA/TD-SCDMA primary frequency -> primary frequency hard handover (cross frequency band)

Parameter	Unit	Cell 1								
		0			DwPTS			5		
Timeslot Number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number (Note 2)		Channel 1								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor					0					
DPCH_Ec/lor	dB	n.a.			n.a.			Note 1		n.a.
$\frac{DPCH_o - E_c}{I_{or}}$	dB	-3								
\hat{I}_{or}/I_{oc}	dB	3			3			3		
I_{oc}	dBm/1.28 MHz	-70								
PCCPCH_RSCP	dBm	-70			n.a.			n.a.		
Propagation Condition		AWGN								
Parameter	Unit	Cell 2								
Timeslot Number		0			DwPTS			5		
UTRA RF Channel Number (Note 2)		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number (Note 2)		Channel 2								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor					0					
DPCH_Ec/lor	dB	n.a.			n.a.			n.a.		Note 1
$\frac{DPCH_o - E_c}{I_{or}}$	dB	-3								
\hat{I}_{or}/I_{oc}	dB	-Inf.	4		-Inf.	4		-Inf.		4
I_{oc}	dBm/1.28 MHz	-70								
PCCPCH_RSCP	dBm	-Inf.	-69		n.a.			n.a.		
Propagation Condition		AWGN								
Note 1: The DPCH level is controlled by the power control loop.										
Note 2: In the case of multi-frequency network, the UTRA RF Channel Number is the channel number of the primary frequency.										

8.3.1A.3.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in 3GPP TS 34.108 [3] sub-clause 7.3.4.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After five seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time "now".
- 8) After 10 seconds, the SS shall switch the power settings from T2 to T3.
- 9) If the UE transmits the SYNC-UL to cell 2 less than 160 ms from the beginning of time period T3, then the number of successful tests is increased by one. UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.
- 10) After five seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat steps 1 to 10 until the required confidence level is achieved.

All messages indicated above shall use the same content as described in the default message content in clause 9 of TS34.108 with the following exceptions:

MEASUREMENT CONTROL message (step 4)

Information Element/Group Name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting/Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Inter-frequency reporting criteria	
-Filter coefficient	0
-CHOICE mode	TD-SCDMA
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	Type 1
-Cell synchronization information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TD-SCDMA
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within monitored set on non-used frequency
-Maximum number of reported cells per reported non-used frequency	1
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2C
-Threshold used frequency	Not Present
-W used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within monitored set on non-used frequency
-Maximum number of reported cells per reported non-used frequency	1
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-75 dBm
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7)

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	now
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronization info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE mode	TD-SCDMA
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	30 dBm
-CHOICE channel requirement	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE mode	TD-SCDMA
-CHOICE TD-SCDMA option	TD-SCDMA
-UL target SIR	-80 dBm
-CHOICE UL OL PC info	Individually signalled
-CHOICE TD-SCDMA option	TD-SCDMA
-TPC stepsize	1
- UL Timeslot Interference	-90 dBm
-CHOICE mode	TD-SCDMA
-Uplink timing advance control (10.3.6.96)	
- CHOICE Timing Advance	Enabled
- CHOICE TDD option	1.28 Mcps TDD
- Uplink synchronization parameters	
- Uplink synchronization step size	1
- Uplink synchronization frequency	1
- Synchronization parameters	
- SYNC_UL codes bitmap	01010101
- FPACH info	
- Timeslot number	0
- Channelisation code	16/15
- Midamble Shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default midamble
- Midamble configuration	16
- WT	4
- PRXUpPCHdes	-80 dBm
- SYNC_UL procedure	
- Max SYNC_UL Transmissions	2
- Power Ramp Step	2
- Frequency info	Not present
- UpPCH position info	0
-CHOICE Timing Advance	Disabled
-UL CCH list	1
-UL Target SIR	TBD dB

Information Element	Value/Remark
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE TD-SCDMA option	1.28 Mcps
-Timeslot number	2
-TFCl existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE TD-SCDMA option	1.28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE TD-SCDMA option	1.28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot code list	1
-Channelisation code	8/1
-CHOICE more timeslots	No more timeslots
Downlink radio resources	
-CHOICE mode	TD-SCDMA
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE mode	TD-SCDMA
-TPC Step size	1 dB
-CHOICE mode	TD-SCDMA
-CHOICE mode	TD-SCDMA
-CHOICE TD-SCDMA option	1.28 Mcps
-tstd_indicator	FALSE
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE mode	TD-SCDMA
-Primary CCPCH info (10.3.6.57)	
- CHOICE mode	TD-SCDMA
- CHOICE TD-SCDMA option	1.28 Mcps
TSTD indicator	TRUE
- Cell parameters ID	0
- SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE mode	TD-SCDMA
- DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
- Downlink DPCH timeslots and codes (10.3.6.32)	
- First individual timeslot info (10.3.6.37)	
- Timeslot Number (10.3.6.84)	
- CHOICE TD-SCDMA option	1.28 Mcps
- Timeslot number	5
- TFCl existence	True
- Midamble shift and burst type (10.3.6.41)	
- CHOICE TD-SCDMA option	1.28 Mcps
- Midamble Allocation Mode	Default

Information Element	Value/Remark
- Midamble configuration	16
- Midamble shift	Not present
- CHOICE TD-SCDMA option	1.28 Mcps
- First timeslot channelisation codes (10.3.6.17)	
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
- CHOICE codes representation	Consecutive codes
- First channelisation code	16/1
- Last channelisation code	16/2
- CHOICE more timeslots	No more timeslots
- SCCPCH information for FACH (10.3.6.70)	Not Present

8.3.1A.3.1.5 Test requirements

The inter-frequency hard handover delay shall be less than 160 ms when the cell is known by the UE and the SFN of the target cell does not need to be decoded (see the Note). The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95%.

NOTE: For the target cell and original cell, the SFNs are the same, but the DOFFs are different; therefore, the CFNs are different.

8.3.1A.3.2 Scenario 2

This test case is applicable for UE handovers from primary frequency to the secondary frequency in multi-band network.

8.3.1A.3.2.1 Definition and applicability

Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCH or the SYNC-UL in case that a handover with SYNCH uplink exchange is recommended, including the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE 1,28 Mcps option.

8.3.1A.3.2.2 Minimum requirement

The handover delay shall be less than 160ms when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

8.3.1A.3.2.3 Test purpose

The purpose of this test is to verify the requirement for the inter-band handover delay in CELL_DCH state.

8.3.1A.3.2.4 Method of test

8.3.1A.3.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

Cell condition: In cell 1, the primary frequency and the secondary frequencies are in band a. In cell 2, the primary frequency uses band a and the secondary frequencies are in band f.

Signal propagation condition: AWGN.

Test instrument: Noise source.

The test parameters are given in table 8.3.1A.3.2.1 and 8.3.1A.3.2.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The PCCPCH RSCP and SFN-CFN

observed time difference of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE during period T2, after the UE has reported event 2C, The starting point of T3 is defined as the end of the last TTI containing the physical channel reconfiguration message.

Table 8.3.1A.3.2.1: General test parameters for Handover to inter-band cell

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2.2 and A.2.1.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	In the case of multi-band network, the UE has a RRC connection on the primary frequency in cell 1.
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	In the case of multi-band network, the UE will handover to the secondary frequency in cell 2.
Threshold non-used frequency		dBm	-75	Threshold RSCP for Event 2C
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		s	5	
T2		s	10	
T3		s	5	

Table 8.3.1A.3.2.2: Cell Specific parameters for Handover to inter-band cell

Parameter	Unit	Cell 1								
		0			DwPTS			5		
Timeslot Number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number(Note 3)		Channel 1								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor					0					
DPCH_Ec/lor	dB	n.a.			n.a.			Note1		n.a.
OCNS_Ec/lor	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	3			3			3		
I_{oc}	dBm/1, 28 MHz	-70								
PCCPCH_RSCP	dBm	-70			n.a.			n.a.		
Propagation Condition		AWGN								
Parameter	Unit	Cell 2								
Timeslot Number		0			DwPTS			5		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number(Note 3)		Channel 1								
UTRA RF Channel Number(Note 4)		Channel 2								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor					0					
DPCH_Ec/lor	dB	n.a.			n.a.			n.a.		Note 1
OCNS_Ec/lor	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	-Inf.	6		-Inf.	6		-Inf.		6
I_{oc}	dBm/1, 28 MHz	-70								
PCCPCH_RSCP	dBm	-Inf.	-67		n.a.			n.a.		
Propagation Condition		AWGN								
Note 1: The DPCH level is controlled by the power control loop										
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} .										

8.3.1A.3.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time “now”.
- 8) After 10 seconds, the SS shall switch the power settings from T2 to T3
- 9) If the UE transmits the UL DPCH to cell 2 less than 160 ms from the beginning of time period T3 then the number of successful tests is increased by one. UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.
- 10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat steps 1-10 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	1 Modify AM RLC Event trigger Not Present
-CHOICE <i>Measurement type</i> -Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) -Inter-frequency measurement quantity (10.3.7.18) -CHOICE <i>reporting criteria</i> -Inter-frequency reporting criteria -Filter coefficient -CHOICE <i>mode</i> -Measurement quantity for frequency quality estimate	Inter-frequency measurement Not Present Inter-frequency reporting criteria 0 TDD Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21) -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE <i>mode</i> -Timeslot ISCP reporting indicator -Proposed TGSN reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	FALSE FALSE Type 1 TRUE TRUE TDD TRUE FALSE TRUE TRUE
-Reporting cell status (10.3.7.61) -CHOICE <i>reported cell</i> -Maximum number of reported cells per reported non-used frequency -Measurement validity (10.3.7.51) -Inter-frequency set update (10.3.7.22) -CHOICE <i>report criteria</i>	Report cells within monitored set on non-used frequency 1 Not Present Not Present Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event -Inter-frequency event identity (10.3.7.14) -Threshold used frequency -W used frequency -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -CHOICE <i>reported cell</i> -Maximum number of reported cells per reported non-used frequency -Parameters required for each non-used frequency -Threshold non-used frequency -W non-used frequency	1 Event 2C Not Present Not Present 0 dB 0 ms Report cells within monitored set on non-used frequency 1 1 -75 dBm 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Now
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	30 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	TDD
- <i>TDD</i>	1,28 Mcps TDD
-UL target SIR	Not Present
-CHOICE <i>UL OL PC info</i>	Individually signalled
-CHOICE <i>TDD option</i>	
--1,28 Mcps TDD	1
-TPC step size	1
-CHOICE <i>mode</i>	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
-UL Target SIR	9 dB
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	2
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-Choice <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots
Downlink radio resources	
-CHOICE <i>mode</i>	TDD

Information Element	Value/Remark
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE <i>mode</i>	TDD
-TPC Step size	1 dB
-CHOICE <i>mode</i>	TDD
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
- <i>TSTD indicator</i> (10.3.6.85a)	FALSE
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
<i>TSTD indicator</i>	TRUE
-Cell parameters ID	0
-SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	TDD
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot channelisation codes (10.3.6.17)	
-CHOICE <i>codes representation</i>	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/2
-CHOICE <i>more timeslots</i>	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency TDD test cases in clause 8.7 and is described in Annex I.

8.3.1A.3.2.5 Test requirements

The inter-band handover delay shall be less than 160 ms when the cell is known by the UE and the SFN of the target cell does not need to be decoded. For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.1A.3.3 Scenario 3

This test case is applicable for UE handovers from secondary frequency to secondary frequency in multi-band network.

8.3.1A.3.3.1 Definition and applicability

Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCH or the SYNC-UL in case that a handover with SYNCH uplink exchange is recommended, including the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE 1,28 Mcps option.

8.3.1A.3.3.2 Minimum requirement

The handover delay shall be less than 160ms when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

8.3.1A.3.3.3 Test purpose

The purpose of this test is to verify the requirement for the inter-band handover delay in CELL_DCH state.

8.3.1A.3.3.4 Method of test

8.3.1A.3.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

Cell condition: In cell 1, the primary frequency uses band a and the secondary frequencies are in band f. In cell 2, the primary frequency and the secondary frequencies are in band a.

Signal propagation condition: AWGN.

Test instrument: Noise source.

The test parameters are given in table 8.3.1A.3.3.1 and 8.3.1A.3.3.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The PCCPCH RSCP and SFN-CFN observed time difference of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE during period T2, after the UE has reported event 2C. The starting point of T3 is defined as the end of the last TTI containing the physical channel reconfiguration message.

Table 8.3.1A.3.3.1: General test parameters for Handover to inter-band cell

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2.2 and A.2.1.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	In the case of multi-band network, the UE has a RRC connection on the primary frequency in cell 1.
	Neighbour cell		Cell 2	

Final condition	Active cell		Cell 2	In the case of multi-band network, the UE will handover to the secondary frequency in cell 2.
Threshold non-used frequency		dBm	-75	Threshold RSCP for Event 2C
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		s	5	
T2		s	10	
T3		s	5	

Table 8.3.1A.3.3.2: Cell Specific parameters for Handover to inter-band cell

Parameter	Unit	Cell 1								
		0			DwPTS			5		
Timeslot Number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRARF Channel Number(Note 3)		Channel 1								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor					0					
DPCH_Ec/lor	dB	n.a.			n.a.			Note1		n.a.
OCNS_Ec/lor	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	3			3			3		
I_{oc}	dBm/1, 28 MHz	-70								
PCCPCH_RSCP	dBm	-70			n.a.			n.a.		
Propagation Condition		AWGN								
Parameter	Unit	Cell 2								
Timeslot Number		0			DwPTS			5		
UTRARF Channel Number(Note 3)		Channel 1								
UTRARF Channel Number(Note 4)		Channel 2								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor					0					
DPCH_Ec/lor	dB	n.a.			n.a.			n.a.		Note 1
OCNS_Ec/lor	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	-Inf.	6		-Inf.	6		-Inf.	6	
I_{oc}	dBm/1, 28 MHz	-70								
PCCPCH_RSCP	dBm	-Inf.	-67		n.a.			n.a.		
Propagation Condition		AWGN								
Note 1:	The DPCH level is controlled by the power control loop									
Note 2:	The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} .									

8.3.1A.3.3.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.

- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time “now”.
- 8) After 10 seconds, the SS shall switch the power settings from T2 to T3
- 9) If the UE transmits the UL DPCH to cell 2 less than 160 ms from the beginning of time period T3 then the number of successful tests is increased by one. UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.
- 10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat steps 1-10 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	Not Present
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	Inter-frequency reporting criteria
-CHOICE <i>reporting criteria</i>	
-Inter-frequency reporting criteria	
-Filter coefficient	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	Type 1
-SFN-SFN observed time difference reporting indicator	TRUE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report cells within monitored set on non-used frequency
-Maximum number of reported cells per reported non-used frequency	1
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE <i>report criteria</i>	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2C
-Threshold used frequency	Not Present
-W used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report cells within monitored set on non-used frequency
-Maximum number of reported cells per reported non-used frequency	1
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-75 dBm
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Now
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	30 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	TDD
- <i>TDD</i>	1,28 Mcps TDD
-UL target SIR	Not Present
-CHOICE <i>UL OL PC info</i>	Individually signalled
-CHOICE <i>TDD option</i>	
--1,28 Mcps TDD	1
-TPC step size	1
-CHOICE <i>mode</i>	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
-UL Target SIR	9 dB
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	2
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-Choice <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots
Downlink radio resources	
-CHOICE <i>mode</i>	TDD

Information Element	Value/Remark
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE <i>mode</i>	TDD
-TPC Step size	1 dB
-CHOICE <i>mode</i>	TDD
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
- <i>TSTD indicator</i> (10.3.6.85a)	FALSE
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
<i>TSTD indicator</i>	TRUE
-Cell parameters ID	0
-SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	TDD
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot channelisation codes (10.3.6.17)	
-CHOICE <i>codes representation</i>	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/2
-CHOICE <i>more timeslots</i>	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency TDD test cases in clause 8.7 and is described in Annex I.

8.3.1A.3.3.5 Test requirements

The inter-band handover delay shall be less than 160 ms when the cell is known by the UE and the SFN of the target cell does not need to be decoded. For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.1B TDD/TDD Handover for 7,68 Mcps Option

8.3.1B.1 Handover to intra-frequency cell

8.3.1B.1.1 Definition and applicability

Handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH.

The requirements and this test apply to the UTRA TDD UE 7,68 Mcps option.

8.3.1B.1.2 Minimum requirement

The interruption time shall be less than 40 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/TDD intra-frequency handover is commanded, the interruption time shall be less than,

$$T_{\text{interrupt}} = T_{\text{offset}} + T_{\text{UL}} + 30 * F_{\text{SFN}} + 20 * KC + 180 * UC \text{ ms}$$

where,

T_{offset}	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel
T_{UL}	Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell
F_{SFN}	Equal to 1 if SFN decoding is required and equal to 0 otherwise
KC	Equal to 1 if a known target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

An intra-frequency TDD target cell shall be considered as known by the UE, if either or both of the following conditions are true:

- the target cell has been measured during the last 5 seconds
- the UE has had a radio link connected to the target cell during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.3.

8.3.1B.1.3 Test purpose

The purpose of this test is to verify the requirement for the intra-frequency handover delay in CELL_DCH state in the single carrier case.

8.3.1B.1.4 Method of test

8.3.1B.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1B.1.1 and 8.3.1B.1.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP and SFN-CFN observed time difference shall be reported together with Event 1G. The test consists of three successive time periods, with a

time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 12.

Table 8.3.1B.1.1: General test parameters for Handover to intra-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2 and A.2.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	
HCS			Not used	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	
T1		s	10	
T2		s	10	
T3		s	10	

Table 8.3.1B.1.2: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	Cell 1						Cell 2						
		0			4			0			5			
DL timeslot number		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	
UTRA RF Channel Number		Channel 1						Channel 1						
PCCPCH_Ec/lor	dB	-3			n.a.			-3			n.a.			
SCH_Ec/lor	dB	-9			n.a.			-9			n.a.			
SCH_t _{offset}	dB	0			n.a.			5			n.a.			
DPCH_Ec/lor	dB	n.a.			Note 1	n.a.		n.a.			n.a.	Note 1		
OCNS_Ec/lor	dB	-3,12			Note 2	n.a.		n.a.	-3,12			n.a.	Note 2	
\hat{I}_{or}/I_{oc}	dB	1						-Inf.	3			-Inf.	3	
PCCPCH RSCP	dBm	-72			n.a.			-Inf.	-70			n.a.		
I_{oc}	dBm/7, 68 MHz	-70												
Propagation Condition		AWGN												
Note 1: The DPCH level is controlled by the power control loop														
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor .														

8.3.1B.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
- 4) SS shall transmit a MEASUREMENT CONTROL message.

- 5) After 10 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.
- 8) After 10 seconds, the SS shall switch the power settings from T2 to T3
- 9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 10 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	Not Present
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	0
-Filter coefficient (10.3.7.9)	TDD
-CHOICE <i>mode</i>	1
-Measurement quantity list	Primary CCPCH
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	TRUE (Note 1)
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	FALSE
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	TRUE (Note 1)
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	FALSE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Report all active set cells + cells within monitored set on used frequency
-CHOICE <i>reported cell</i>	2
-Maximum number of reported cells	Not Present
-Measurement validity (10.3.7.51)	Intra-frequency measurement reporting criteria
-CHOICE <i>report criteria</i>	1
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

Information Element/Group name	Value/Remark
Note 1:	The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.
Note 2:	Reporting interval = 0 ms means no periodical reporting

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-Delay restriction flag	Not present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-New DSCH-RNTI	Not Present
-New H-RNTI	Not Present
-CHOICE <i>mode</i>	TDD
-New E-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	TDD
-UL Target SIR	Not Present
-CHOICE <i>UL OL PC info</i>	Individually signalled
-CHOICE <i>TDD option</i>	7,68 Mcps TDD
-Individual Timeslot interference info	
-Individual timeslot interference (10.3.6.38)	1
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	7,68 Mcps TDD
-Timeslot number	12
-UL Timeslot Interference	-90 dBm
-CHOICE <i>mode</i>	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
-TFCS ID	1
-UL Target SIR	20 dB
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-CHOICE <i>TDD option</i>	7,68 Mcps TDD
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	7,68 Mcps
-Timeslot number	12
-TFCl existence	True
-Midamble shift and burst type (10.3.6.41)	
-Choice <i>TDD option</i>	7,68 Mcps
-Choice Burst Type	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16

Information Element	Value/Remark
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	7,68 Mcps
-First timeslot code list	1
-Channelisation code	16/1
-Choice more timeslots	No more timeslots
-E-DCH info	Not Present
Downlink radio resources	
-Downlink HS-PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
- Choice DPCH info	Downlink DPCH info common for all RL
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE <i>mode</i>	TDD
-TPC Step size	1 dB
-MAC-d HFN initial value	Not present
-CHOICE <i>mode</i>	TDD
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	7,68 Mcps
-TX Diversity mode (10.3.6.86)	None
-Default DPCH Offset Value (10.3.6.16)	0
-MAC-hs reset indicator	Not present
-Post-verification period	Not present
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	7,68 Mcps
-CHOICE <i>sync case</i>	Case 2
-Timeslot	0
-Cell parameters ID	20
-SCTD indicator	False
-CHOICE <i>DPCH info</i>	Downlink DPCH info for each RL
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	7.68 Mcps TDD
-DL CCTrCH list	1
-TFCS ID	1
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes VHCR (10.3.6.32a)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	7,68 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE <i>TDD option</i>	7,68 Mcps
-CHOICE <i>Burst Type</i>	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	7,68 Mcps
-First timeslot channelisation codes VHCR (10.3.6.17a)	
-CHOICE <i>codes representation</i>	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/1
-CHOICE <i>more timeslots</i>	No more timeslots
-UL CCTrCH TPC List	Not Present
- DL CCTrCH List to Remove	Not Present
- E-AGCH Info	Not Present
- CHOICE <i>mode</i>	TDD
- E-HICH information	Not Present
-MBMS PL Service Restriction Information	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Checked that this IE is present
-CHOICE mode	TDD
-Cell parameters ID	20
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE TDD option	7.68Mcps TDD
-CHOICE SyncCase	Not Present
-Cell parameters ID	40
-SCTD indicator	FALSE

8.3.1B.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.1B.2 Handover to inter-frequency cell

8.3.1B.2.1 Definition and applicability

The handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH.

The requirements and this test apply to the UTRA TDD UE.

8.3.1B.2.2 Minimum requirement

The interruption time shall be less than 40 ms in the dual carrier case when the cell is known by the UE and the SFN of the target cell needs to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/TDD inter-frequency handover is commanded, the interruption time shall be less than,

$$T_{\text{interrupt}} = T_{\text{offset}} + T_{\text{UL}} + 30 * F_{\text{SFN}} + 20 * KC + 180 * UC \text{ ms}$$

where,

T_{offset}	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel
T_{UL}	Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell
F_{SFN}	Equal to 1 if SFN decoding is required and equal to 0 otherwise
KC	Equal to 1 if a known target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

An inter-frequency TDD target cell shall be considered as known by the UE, if either or both of the following conditions are true:

- the target cell has been measured during the last 5 seconds
- the UE has had a radio link connected to the target cell during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.3.

8.3.1B.2.3 Test purpose

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL_DCH state in the dual carrier case.

8.3.1B.2.4 Method of test

8.3.1B.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1B.2.1 and 8.3.1B.2.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The PCCPCH RSCP and SFN-CFN observed time difference of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. The UL DPCH shall be transmitted in timeslot 12.

Table 8.3.1B.2.1: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2 and A.2.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	
HCS			Not used	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-80	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T _{SI}		s	1.28	The value shall be used for all cells in the test.
T1		s	10	
T2		s	10	
T3		s	10	

Table 8.3.1B.2.2: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1						Cell 2					
		0			4			2			5		
DL timeslot number		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRAN RF Channel Number		Channel 1						Channel 2					
PCCPCH_Ec/lor	dB	-3			n.a.			-3			n.a.		
SCH_Ec/lor	dB	-9			n.a.			-9			n.a.		
SCH_t _{offset}	dB	0			n.a.			5			n.a.		
DPCH_Ec/lor	dB	n.a.			Note 1		n.a.	n.a.			n.a.		Note 1
OCNS_Ec/lor	dB	-3,12			Note 2		n.a.	n.a.	-3,12		n.a.		Note 2
\hat{I}_{or}/I_{oc}	dB	1						-Inf.	7		-Inf.	7	
PCCPCH RSCP	dBm	-72			n.a.			-Inf.	-66		n.a.		
I_{oc}	dBm/7,68 MHz	-70											
Propagation Condition		AWGN											
Note 1: The DPCH level is controlled by the power control loop													
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor .													

8.3.1B.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 10 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C.

- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.
- 8) After 10 seconds, the SS shall switch the power settings from T2 to T3
- 9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 10 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved..

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	Not Present
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	Inter-frequency reporting criteria
-CHOICE <i>reporting criteria</i>	
-Inter-frequency reporting criteria	
-Filter coefficient	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	FALSE
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	No Report
-SFN-SFN observed time difference reporting indicator	TRUE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	FALSE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Report cells within monitored set on non-used frequency
-CHOICE <i>reported cell</i>	
-Maximum number of reported cells per reported non-used frequency	1
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE <i>report criteria</i>	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2C
-Threshold used frequency	Not Present
-W used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	Report cells within monitored set on non-used frequency
-CHOICE <i>reported cell</i>	
-Maximum number of reported cells per reported non-used frequency	1
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-80 dBm
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-Delay restriction flag	Not present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-New DSCH-RNTI	Not Present
-New H-RNTI	Not Present
-CHOICE <i>mode</i>	TDD
-New E-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	TDD
-UL Target SIR	Not Present
-CHOICE <i>UL OL PC info</i>	Individually signalled
-CHOICE <i>TDD option</i>	7,68 Mcps TDD
-Individual Timeslot interference info	
-Individual timeslot interference (10.3.6.38)	1
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	7,68 Mcps TDD
-Timeslot number	12
-UL Timeslot Interference	-90 dBm
-CHOICE <i>mode</i>	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
- TFCS ID	1
-UL Target SIR	20 dB
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-CHOICE <i>TDD option</i>	7,68 Mcps TDD
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	7,68 Mcps
-Timeslot number	12
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-Choice <i>TDD option</i>	7,68 Mcps
-Choice Burst Type	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16

Information Element	Value/Remark
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	7,68 Mcps
-First timeslot code list	1
-Channelisation code	16/1
-Choice more timeslots	No more timeslots
-E-DCH info	Not Present
Downlink radio resources	
-Downlink HS-PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Choice DPCH info	Downlink DPCH info common for all RL
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE <i>mode</i>	TDD
-TPC Step size	1 dB
-MAC-d HFN initial value	Not present
-CHOICE <i>mode</i>	TDD
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	7,68 Mcps
-TX Diversity mode (10.3.6.86)	None
-Default DPCH Offset Value (10.3.6.16)	0
-MAC-hs reset indicator	Not present
-Post-verification period	Not present
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	7,68 Mcps
-CHOICE <i>sync case</i>	Case 2
-Timeslot	0
-Cell parameters ID	20
-SCTD indicator	False
-CHOICE <i>DPCH info</i>	Downlink DPCH info for each RL
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	7.68 Mcps TDD
-DL CCTrCH list	1
-TFCS ID	1
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes VHCR (10.3.6.32a)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	7,68 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE <i>TDD option</i>	7,68 Mcps
-CHOICE <i>Burst Type</i>	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	7,68 Mcps
-First timeslot channelisation codes VHCR (10.3.6.17a)	
-CHOICE <i>codes representation</i>	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/1
-CHOICE <i>more timeslots</i>	No more timeslots
-UL CCTrCH TPC List	Not Present
- DL CCTrCH List to Remove	Not Present
- E-AGCH Info	Not Present
- CHOICE <i>mode</i>	TDD
- E=HICH information	Not Present
-MBMS PL Service Restriction Information	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2 in Table 8.6.2.4.1.2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Checked that this IE is present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2 in Table 8.6.2.4.1.2
-CHOICE mode	TDD
-Primary CCPCH Info	
-CHOICE mode	TDD
-CHOICE TDD Option	7,68 Mcps TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

8.3.1B.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.2 TDD/FDD Handover for 3,84 Mcps Option

8.3.2.1 Definition and applicability

The handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH.

The requirements and this test apply to the UTRA TDD / FDD UE.

8.3.2.2 Minimum requirement

The interruption time shall be less than 100 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/FDD handover is commanded, the interruption time shall be less than,

$$T_{\text{interrupt}} = T_{\text{offset}} + 40 + 50 * KC + 150 * UC \text{ ms}$$

where,

T_{offset}	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell.
KC	Equal to 1 if a known target cell is indicated in the RRC message implying TDD/FDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/FDD handover and equal to 0 otherwise

An inter-frequency FDD target cell shall be considered known by the UE, if the target cell has been measured by the UE during the last 5 seconds.

The phase reference is the Primary CPICH.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.2 and A.5.2.

8.3.2.3 Test purpose

The purpose of this test is to verify the requirement for the TDD/FDD handover delay in CELL_DCH state.

8.3.2.4 Method of test

8.3.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.2.1, 8.3.2.2 and 8.3.2.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G and 2B shall be used. The CPICH_RSCP of the best cell on the unused frequency shall be reported together with Event 2B reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

Table 8.3.2.1: General test parameters for TDD/FDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	TDD cell
	Neighbour cell		Cell 2	FDD cell
Final condition	Active cell		Cell 2	FDD cell
HCS			Not used	
O	dB		0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	3	Hysteresis parameter for event 2B
Time to Trigger		ms	0	
Absolute threshold used frequency		dBm	-71	Applicable for Event 2B
Threshold non-used frequency		dBm	-80	Applicable for Event 2B
W non-used frequency			1	Applicable for Event 2B
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 FDD neighbours on Channel 2	
T _{SI}	s		1,28	The value shall be used for all cells in the test.
T1	s		5	
T2	s		15	
T3	s		5	

Table 8.3.2.2: Cell 1 specific test parameters for TDD/FDD handover

Parameter	Unit	Cell 1					
		0			2		
DL timeslot number		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1					
PCCPCH_Ec/lor	dB	-3			n.a.		
SCH_Ec/lor	dB	-9			n.a.		
SCH_offset	dB	0			n.a.		
DPCH_Ec/lor	dB	n.a.			Note 1		n.a.
OCNS_Ec/lor	dB	-3,12			Note 2		n.a.
\hat{I}_{or}/I_{oc}	dB	5	-1		5	-1	
PCCPCH RSCP	dBm	-68	-74		n.a.		
I_{oc}	dBm/3, 84 MHz	-70					
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop							
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor.							

Table 8.3.2.3: Cell 2 specific test parameters for TDD/FDD handover

Parameter	Unit	Cell 2	
		T1, T2	T3
CPICH_Ec/I _{or}	dB	-10	
PCCPCH_Ec/I _{or}	dB	-12	
SCH_Ec/I _{or}	dB	-12	
PICH_Ec/I _{or}	dB	-15	
DPCH_Ec/I _{or}	dB	n.a.	Note 1
OCNS_Ec/I _{or}	dB	-0,941	Note 2
CPICH_RSCP	dBm	-83	-77
\hat{I}_{or}/I_{oc}	dB	-3	3
I_{oc}	dBm/3,8 4 MHz	-70	
Propagation Condition		AWGN	
Note 1: The DPCH level is controlled by the power control loop			
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or}			

8.3.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2B.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.
- 8) After 15 seconds, the SS shall switch the power settings from T2 to T3
- 9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCCH to cell 2 less than 100 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat step 1-10 [TBD] times.

Specific Message Contents

All messages indicated below shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message, event 2B (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	Not Present
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	Inter-frequency reporting criteria
-CHOICE <i>reporting criteria</i>	
-Inter-frequency reporting criteria	
-Filter coefficient	0
-CHOICE <i>mode</i>	FDD
-Measurement quantity for frequency quality estimate	CPICH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	FALSE
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	No Report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	FDD
-CHOICE <i>mode</i>	FALSE
-CPICH Ec/N0 reporting indicator	FALSE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Report cells within monitored set on non-used frequency
-CHOICE <i>reported cell</i>	
-Maximum number of reported cells per reported non-used frequency	1
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE <i>report criteria</i>	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2B
-Threshold used frequency	-71 dBm
-W used frequency	1
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	Report cells within monitored set on non-used frequency
-CHOICE <i>reported cell</i>	
-Maximum number of reported cells per reported non-used frequency	1
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-80 dBm
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	FDD
-UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
-UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE <i>mode</i>	FDD
-Scrambling code type	Long
-Scrambling code number	0 (0 to 16777215)
-Number of DPDCH	Not Present(1)
-Spreading factor	SF is reference to TS34.108 clause 6.10 Parameter Set
-TFCI existence	TRUE
-Number of FBI bit	Not Present(0)
-Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set
Downlink radio resources	
-CHOICE <i>mode</i>	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-DPC mode	0 (single)
-CHOICE <i>mode</i>	FDD
-Power offset $P_{\text{Pilot-DPCH}}$	TBD
-DL rate matching restriction information	Not Present
-Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
-Fixed or Flexible Position	Flexible
-TFCI existence	TRUE
-CHOICE <i>SF</i>	Not Present
-Number of bits for Pilot bits(SF=128,256)	Not Present
-CHOICE <i>mode</i>	FDD
-DPCH compressed mode info (10.3.6.33)	Not Present (Note 1)

Information Element	Value/Remark
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	350
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0 chips
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	1
-Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
-Code number	SF-1(SF is reference to TS34.108 clause 6.10 Parameter Set)
-Scrambling code change	No change
-TPC combination index	0
-SSDT Cell Identity	-a
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH (10.3.6.70)	Not Present
Note 1: IE "DPCH compressed mode info" is not needed as default values are applied that have previously been received in RADIO BEARER SETUP or RRC CONNECTION SETUP	

MEASUREMENT REPORT message for Inter frequency test cases

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2 in Table 8.3.2.3
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	FDD
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Not Present
-CPICH RSCP	Checked that this IE is present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2B
-Inter-frequency cells	1
-Frequency Info	
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2 in Table 8.3.2.3
-CHOICE mode	FDD
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

8.3.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.2A TDD/FDD Handover for 1,28 Mcps Option

8.3.2A.1 Definition and applicability

The handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH.

The requirements and this test apply to the UTRA 1,28Mcps TDD / FDD UE.

8.3.2A.2 Minimum requirement

The interruption time shall be less than 100 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/FDD handover is commanded, the interruption time shall be less than,

$$T_{\text{interrupt}} = T_{\text{offset}} + 40 + 50 * KC + 150 * UC \text{ ms}$$

where,

T_{offset}	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell.
KC	Equal to 1 if a known target cell is indicated in the RRC message implying TDD/FDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/FDD handover and equal to 0 otherwise

An inter-frequency FDD target cell shall be considered known by the UE, if the target cell has been measured by the UE during the last 5 seconds.

The phase reference is the Primary CPICH.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.2.2 and A.5.2.2

8.3.2A.3 Test purpose

The purpose of this test is to verify the requirement for the TDD/FDD handover delay in CELL_DCH state.

8.3.2A.4 Method of test

8.3.2A.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.2.1, 8.3.2.2 and 8.3.2.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G and 2B shall be used. The CPICH_RSCP of the best cell on the unused frequency shall be reported together with Event 2B reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

Table 8.3.2A.1: General test parameters for 1,28 Mcps TDD/FDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channels 12.2 kbps	As specified in TS 25.102 annex A and TS 25.101 annex A
Power Control			On	
Initial conditions	Active cell		Cell 1	TDD cell
	Neighbour cell		Cell 2	FDD cell
Final condition	Active cell		Cell 2	FDD cell
O	dB		0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis	dB		3	Hysteresis parameter for event 2B
Time to Trigger	ms		0	
Absolute threshold used frequency	dBm		-71	Applicable for Event 2B
Threshold non-used frequency	dBm		-80	Applicable for Event 2B
W non-used frequency			1	Applicable for Event 2B
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 FDD neighbours on Channel 2	
T _{SI}	s		1,28	The value shall be used for all cells in the test.
T1	s		5	
T2	s		15	
T3	s		5	

Table 8.3.2A.2: Cell 1 (1,28 Mcps TDD cell) specific test parameters for TDD/FDD handover

Parameter	Unit	Cell 1					
		0			5		
Timeslot number		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1					
PCCPCH_Ec/lor	dB	-3			n.a.		
DPCH_Ec/lor	dB	n.a.			Note 1		n.a.
OCNS_Ec/lor	dB	-3			Note 2		n.a.
\hat{I}_{or}/I_{oc}	dB	5	-1		5	-1	
PCCPCH RSCP	dBm	-68	-74		n.a.		
I_{oc}	dBm/ 1,28 MHz	-70					
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop							
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor .							

Table 8.3.2A.3: Cell 2 (FDD cell) specific test parameters for TDD/FDD handover

Parameter	Unit	Cell 2		
		T1	T2	T3
CPICH_Ec/I _{or}	dB		-10	
PCCPCH_Ec/I _{or}	dB		-12	
SCH_Ec/I _{or}	dB		-12	
PICH_Ec/I _{or}	dB		-15	
DPCH_Ec/I _{or}	dB	n.a.		Note 1
OCNS_Ec/I _{or}	dB	-0.941		Note 2
CPICH_RSCP	dBm	-Inf	-75	
\hat{I}_{or}/I_{oc}	dB	-Inf	5	
I_{oc}	dBm/ 3,84 MHz		-70	
Propagation Condition		AWGN		
Note 1: The DPCH level is controlled by the power control loop				
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or} .				

8.3.2A.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure to be specified in TS 34.108 [3] subclause 7.3.4.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2B.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.
- 8) After 15 seconds, the SS shall switch the power settings from T2 to T3
- 9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCCH to cell 2 less than 100 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved..

Specific Message Contents

All messages indicated below shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message, event 2B (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	Not Present
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	Inter-frequency reporting criteria
-CHOICE <i>reporting criteria</i>	
-Inter-frequency reporting criteria	
-Filter coefficient	0
-CHOICE <i>mode</i>	FDD
-Measurement quantity for frequency quality estimate	CPICH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	FALSE
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	No Report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	FDD
-CHOICE <i>mode</i>	FALSE
-CPICH Ec/N0 reporting indicator	FALSE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Report cells within monitored set on non-used frequency
-CHOICE <i>reported cell</i>	
-Maximum number of reported cells per reported non-used frequency	1
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE <i>report criteria</i>	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2B
-Threshold used frequency	-71 dBm
-W used frequency	1
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	Report cells within monitored set on non-used frequency
-CHOICE <i>reported cell</i>	
-Maximum number of reported cells per reported non-used frequency	1
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-80 dBm
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	FDD
-UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
-UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE <i>mode</i>	FDD
-Scrambling code type	Long
-Scrambling code number	0 (0 to 16777215)
-Number of DPDCH	Not Present(1)
-Spreading factor	SF is reference to TS34.108 clause 6.10 Parameter Set
-TFCI existence	TRUE
-Number of FBI bit	Not Present(0)
-Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set
Downlink radio resources	
-CHOICE <i>mode</i>	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-DPC mode	0 (single)
-CHOICE <i>mode</i>	FDD
-Power offset $P_{Pilot-DPCH}$	TBD
-DL rate matching restriction information	Not Present
-Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
-Fixed or Flexible Position	Flexible
-TFCI existence	TRUE
-CHOICE <i>SF</i>	Not Present
-Number of bits for Pilot bits(SF=128,256)	Not Present
-CHOICE <i>mode</i>	FDD
-DPCH compressed mode info (10.3.6.33)	Not Present (Note 1)

Information Element	Value/Remark
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	350
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0 chips
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	1
-Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
-Code number	SF-1(SF is reference to TS34.108 clause 6.10 Parameter Set)
-Scrambling code change	No change
-TPC combination index	0
-SSDT Cell Identity	-a
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH (10.3.6.70)	Not Present
Note 1: IE "DPCH compressed mode info" is not needed as default values are applied that have previously been received in RADIO BEARER SETUP or RRC CONNECTION SETUP	

MEASUREMENT REPORT message for Inter frequency test cases

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2 in Table 8.3.2.3
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	FDD
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Not Present
-CPICH RSCP	Checked that this IE is present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2B
-Inter-frequency cells	1
-Frequency Info	
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2 in Table 8.3.2.3
-CHOICE mode	FDD
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

8.3.2A.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.2B TDD/FDD Handover for 7,68 Mcps Option

8.3.2B.1 Definition and applicability

The handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH.

The requirements and this test apply to the UTRA TDD / FDD UE.

8.3.2B.2 Minimum requirement

The interruption time shall be less than 100 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/FDD handover is commanded, the interruption time shall be less than,

$$T_{\text{interrupt}} = T_{\text{offset}} + 40 + 50 * KC + 150 * UC \text{ ms}$$

where,

T_{offset}	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell.
KC	Equal to 1 if a known target cell is indicated in the RRC message implying TDD/FDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/FDD handover and equal to 0 otherwise

An inter-frequency FDD target cell shall be considered known by the UE, if the target cell has been measured by the UE during the last 5 seconds.

The phase reference is the Primary CPICH.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.2 and A.5.3.

8.3.2B.3 Test purpose

The purpose of this test is to verify the requirement for the TDD/FDD handover delay in CELL_DCH state.

8.3.2B.4 Method of test

8.3.2B.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.2B.1, 8.3.2B.2 and 8.3.2B.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G and 2B shall be used. The CPICH_RSCP of the best cell on the unused frequency shall be reported together with Event 2B reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

Table 8.3.2B.1: General test parameters for TDD/FDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 annex A.2.2 and TS 25.101 annex A
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	TDD cell
	Neighbour cell		Cell 2	FDD cell
Final condition	Active cell		Cell 2	FDD cell
HCS			Not used	
O	dB		0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	3	Hysteresis parameter for event 2B
Time to Trigger		ms	0	
Absolute threshold used frequency		dBm	-71	Applicable for Event 2B
Threshold non-used frequency		dBm	-80	Applicable for Event 2B
W non-used frequency			1	Applicable for Event 2B
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 FDD neighbours on Channel 2	
T _{SI}	s		1.28	The value shall be used for all cells in the test.
T1	s		5	
T2	s		15	
T3	s		5	

Table 8.3.2B.2: Cell 1 specific test parameters for TDD/FDD handover

Parameter	Unit	Cell 1					
		0			2		
DL timeslot number		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1					
PCCPCH_Ec/lor	dB	-3			n.a.		
SCH_Ec/lor	dB	-9			n.a.		
SCH_t _{offset}	dB	0			n.a.		
DPCH_Ec/lor	dB	n.a.			Note 1		n.a.
OCNS_Ec/lor	dB	-3,12			Note 2		n.a.
\hat{I}_{or}/I_{oc}	dB	5	-1		5	-1	
PCCPCH RSCP	dBm	-68	-74		n.a.		
I_{oc}	dBm/7, 68 MHz	-70					
Propagation Condition		AWGN					
The DPCH level is controlled by the power control loop The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}							

Table 8.3.2B.3: Cell 2 specific test parameters for TDD/FDD handover

Parameter	Unit	Cell 2	
		T1, T2	T3
CPICH_Ec/I _{or}	dB	-10	
PCCPCH_Ec/I _{or}	dB	-12	
SCH_Ec/I _{or}	dB	-12	
PICH_Ec/I _{or}	dB	-15	
DPCH_Ec/I _{or}	dB	n.a.	Note 1
OCNS_Ec/I _{or}	dB	-0.941	Note 2
CPICH_RSCP	dBm	-83	-77
\hat{I}_{or}/I_{oc}	dB	-3	3
I_{oc}	dBm/7.6 8 MHz	-70	
Propagation Condition		AWGN	
Note 1: The DPCH level is controlled by the power control loop			
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or} .			

8.3.2B.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2B.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.
- 8) After 15 seconds, the SS shall switch the power settings from T2 to T3
- 9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCCH to cell 2 less than 100 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved..

Specific Message Contents

All messages indicated below shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message, event 2B (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	Not Present
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	Inter-frequency reporting criteria
-CHOICE <i>reporting criteria</i>	
-Inter-frequency reporting criteria	
-Filter coefficient	0
-CHOICE <i>mode</i>	FDD
-Measurement quantity for frequency quality estimate	CPICH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	FALSE
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	No Report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	FDD
-CHOICE <i>mode</i>	FALSE
-CPICH Ec/N0 reporting indicator	FALSE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Report cells within monitored set on non-used frequency
-CHOICE <i>reported cell</i>	
-Maximum number of reported cells per reported non-used frequency	1
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE <i>report criteria</i>	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2B
-Threshold used frequency	-71 dBm
-W used frequency	1
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	Report cells within monitored set on non-used frequency
-CHOICE <i>reported cell</i>	
-Maximum number of reported cells per reported non-used frequency	1
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-80 dBm
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	FDD
-UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
-UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE <i>mode</i>	FDD
-Scrambling code type	Long
-Scrambling code number	0 (0 to 16777215)
-Number of DPDCH	Not Present(1)
-Spreading factor	SF is reference to TS34.108 clause 6.10 Parameter Set
-TFCI existence	TRUE
-Number of FBI bit	Not Present(0)
-Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set
Downlink radio resources	
-CHOICE <i>mode</i>	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-DPC mode	0 (single)
-CHOICE <i>mode</i>	FDD
-Power offset $P_{Pilot-DPCH}$	TBD
-DL rate matching restriction information	Not Present
-Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
-Fixed or Flexible Position	Flexible
-TFCI existence	TRUE
-CHOICE <i>SF</i>	Not Present
-Number of bits for Pilot bits(SF=128,256)	Not Present
-CHOICE <i>mode</i>	FDD
-DPCH compressed mode info (10.3.6.33)	Not Present (Note 1)

Information Element	Value/Remark
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	350
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0 chips
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	1
-Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
-Code number	SF-1(SF is reference to TS34.108 clause 6.10 Parameter Set)
-Scrambling code change	No change
-TPC combination index	0
-SSDT Cell Identity	-a
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH (10.3.6.70)	Not Present
Note 1: IE "DPCH compressed mode info" is not needed as default values are applied that have previously been received in RADIO BEARER SETUP or RRC CONNECTION SETUP	

MEASUREMENT REPORT message for Inter frequency test cases

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2 in Table 8.3.2.3
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	FDD
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Not Present
-CPICH RSCP	Checked that this IE is present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2B
-Inter-frequency cells	1
-Frequency Info	
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2 in Table 8.3.2.3
-CHOICE mode	FDD
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

8.3.2B.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.3 TDD/GSM Handover

8.3.3.1 Definition and applicability

8.3.3.1.1 3,84 Mcps option

The UTRAN to GSM cell handover interruption time is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to the combined TDD (3,84 Mcps option) and GSM UE.

8.3.3.1.2 1,28 Mcps option

The UTRAN to GSM cell handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to the combined TDD (1,28 Mcps option) and GSM UE

8.3.3.1.3 7,68 Mcps option

The UTRAN to GSM cell handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to the combined TDD (7,68 Mcps option) and GSM UE.

8.3.3.2 Minimum requirement

8.3.3.2.1 3,84 Mcps option

The interruption time shall be less than 40 ms in the case where the UE has synchronised to the GSM cell before the HANOVER FROM UTRAN COMMAND is received. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%. .

The normative reference for this requirement is TS 25.123 [2] clauses 5.3.2 and A.5.3.

8.3.3.2.2 1,28 Mcps option

The handover delay shall be less than 90 ms in the case where the UE has synchronised to the GSM cell before the HANOVER FROM UTRAN COMMAND is received. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95% .

The normative reference for this requirement is TS 25.123 [2] clauses 5.3.2 and A.5.3.

8.3.3.2.3 7,68 Mcps option

The handover delay shall be less than 90 ms in the case where the UE has synchronised to the GSM cell before the HANOVER FROM UTRAN COMMAND is received. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95% .

The normative reference for this requirement is TS 25.123 [2] clauses 5.3.2 and A.5.3.

8.3.3.3 Test purpose

8.3.3.3.1 3,84 Mcps option

To verify that the UE meets the minimum requirement.

8.3.3.3.2 1,28 Mcps option

To verify that the UE meets the minimum requirement.

8.3.3.4 Method of test

8.3.3.4.1 3,84 Mcps option

8.3.3.4.1.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4 for TDD conditions, and clause A1.2 of TS 51.010-1 [23] for the corresponding GSM conditions.

The test parameters are given in Table 8.3.3.1, 8.3.3.2 and 8.3.3.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a HANOVER FROM UTRAN COMMAND message with activation time at beginning of T3 with one active cell, cell 2. The HANOVER FROM UTRAN COMMAND message shall be sent to the UE such that the delay between the last the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [9]. In the GSM Handover command contained in this message, IE starting time shall not be included.

Cell 1 is a UTRA TDD cell and cell 2 is a GSM cell. The Beacon timeslot shall be transmitted in timeslot 0 for cell 1 and no second Beacon timeslot shall be provided for cell 1. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3.

Table 8.3.3.1: General test parameters for TDD/GSM handover

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	UTRA TDD cell
	Neighbour cell	Cell 2	GSM cell
Final condition	Active cell	Cell 2	GSM cell
Inter-RAT measurement quantity		GSM carrier RSSI	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for Event 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		12 TDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the start of time period T1.
T _{identify abort}	s	5	
T _{reconfirm abort}	s	5	
T1	s	10	
T2	s	10	
T3	s	10	

Table 8.3.3.2: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1					
		0			1		
DL timeslot number		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1					
PCCPCH_Ec/I _{or}	dB	-3			n.a.		
SCH_Ec/I _{or}	dB	-9			n.a.		
SCH _{offset}	dB	0			n.a.		
DPCH_Ec/I _{or}	dB	n.a.			Note 1		n.a.
OCNS_Ec/I _{or}	dB	-3,12			Note 2		n.a.
\hat{I}_{or}/I_{oc}	dB	6			6		
PCCPCH RSCP	dBm	-68			n.a.		
I_{oc}	dBm/3, 84 MHz	-70					
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop							
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or} .							

Table 8.3.3.3: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2, T3
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-85	-75

8.3.3.4.1.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1.
- 2) The UE is switched on
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 4) The RF parameters for cell 2 are set up according to T1 and the SS configures a traffic channel
- 5) SS shall transmit a MEASUREMENT CONTROL message to cell 1
- 6) After 10 seconds, the SS shall switch the power settings from T1 to T2
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C
- 8) SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time at T3 and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell.
- 9) After 10 seconds, the SS shall switch the power settings from T2 to T3
- 10) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3, then the number of successful tests is increased by one.
[Editor's note: TS 34.108, 7.3.4 shall specify the messages HANDOVER ACCESS, PHYSICAL INFORMATION, SABM, UA and HANDOVER COMPLETE]
- 11) After 10 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 12) Repeat step 1-11 [TBD] times

Specific Message Contents

All messages indicated below above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

- Note: Numbers in brackets after an item e.g “Message Type (10.2.17)” in the IE description are references to clause numbers in TS 25.331 [9] describing that item in more detail.

MEASUREMENT CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	4
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate (10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	1
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	Value/remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Activation time	At T3
RB information elements	
-RAB information list	1
-RAB Info	Not present
Other information elements	
-CHOICE System type	GSM
-Frequency Band	GSM/DCS 1800 Band
-GSM message	
-Single GSM message	[TBD]
-GSM message List	GSM HANDOVER COMMAND formatted as BIT STRING(1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of TS 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 3

MEASUREMENT REPORT message (step 7)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-RAT Measured results list
-Inter-RAT-frequency measured results (10.3.7.26)	1
-CHOICE System	GSM
-Measured GSM cells	1
-GSM Carrier RSSI	Checked that this IE is present
-CHOICE BSIC	Verified BSIC
-inter-RAT cell id	Checked that this IE is present
-Observed Time difference to GSM cell	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-RAT measurement event results
-Inter-RAT event identity	3C
-Cells to report	1
-CHOICE BSIC	Verified BSIC
-inter-RAT cell id	Checked that this IE is present

8.3.3.4.2 1,28 Mcps option

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4 for TDD conditions, and clause A1.2 of TS 51.010-1 [24] for the corresponding GSM conditions.

The test parameters are given in Table 8.3.4.1, 8.3.4.2 and 8.3.4.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a HANDOVER FROM UTRAN COMMAND message with activation time "now" with one active cell, cell 2. The HANDOVER FROM UTRAN COMMAND message shall be sent to the UE during period T2. The starting point of T3 is defined as the end of the last TTI containing the HANDOVER COMMAND. In the GSM Handover command contained in this message, IE starting time shall not be included.

Cell 1 is a UTRA TDD cell and cell 2 is a GSM cell. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

Table 8.3.3.4.1: General test parameters for 1,28Mcps TDD/GSM handover

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	UTRA TDD cell
	Neighbour cell	Cell 2	GSM cell
Final condition	Active cell	Cell 2	GSM cell
Inter-RAT measurement quantity		GSM carrier RSSI	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for Event 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		12 TDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the start of time period T1.
T _{identify abort}	s	5	As specified in section 8.1A.2.5
T _{reconfirm abort}	s	5	As specified in section 8.1A.2.5
T1	s	10	
T2	s	10	
T3	s	10	

Table 8.3.3.4.2: Cell 1 (1,28Mcps)specific test parameters for TDD/GSM handover

Parameter	Unit	Cell 1					
		0			DwPTS		
DL timeslot number		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1					
PCCPCH_Ec/lor	dB	-3					
DwPCH_Ec/lor	dB				0		
OCNS_Ec/lor	dB	-3					
\hat{I}_{or}/I_{oc}	dB	5			5		
I_{oc}	dBm/1.28 MHz	-70					
Propagation Condition		AWGN					

Table 8.3.3.4.3: Cell 2 (GSM)specific test parameters for TDD/GSM handover

Parameter	Unit	Cell 2	
		T1	T2, T3
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-85	-75

8.3.3.4.2.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1.
- 2) The UE is switched on
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 4) The RF parameters for cell 2 are set up according to T1 and the SS configures a traffic channel

- 5) SS shall transmit a MEASUREMENT CONTROL message to cell 1
- 6) After 10 seconds, the SS shall switch the power settings from T1 to T2
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C
- 8) SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time “now” and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The start of T3 is defined as the end of the last TTI, containing the HANDOVER COMMAND.
- 10) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 90 ms from the beginning of time period T3, then the number of successful tests is increased by one.
- 11) At the end of T3 the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 12) Repeat step 1-11 until the confidence level according to annex F.6.2A is achieved

Specific Message Contents

All messages shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

Note: 10.x.y.z in the IE description refers to clauses in TS 25.331 [9].

MEASUREMENT CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	4
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate (10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	1
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	Value/remark
Message Type(10.2.15)	
UE information elements -RRC transaction identifier -Integrity check info -Activation time	0 Not Present now
RB information elements -RAB information list -RAB Info	1 Not present
- RAB identity	0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	CS domain
- NAS Synchronization Indicator	Not present
- Re-establishment timer	Use T315
Other information elements -CHOICE System type -Frequency Band -CHOICE GSM message - Single GSM message	GSM Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" GSM HANDOVER COMMAND formatted and coded according to GSM specifications as BIT STRING (1..512). The first/ <i>leftmost/ most significant</i> bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Information Element (GSM)	Value/remark	Version
Protocol Discriminator	RR Management.	
Skip Indicator	0000	
Message Type	00101011	
Cell Description		
- Network Colour Code	1	
- Base station Colour Code	5	
- BCCH Carrier Number	1	
Channel Description 2		
- Channel Type and TDMA offset	TCH/F + ACCHs	
- Timeslot Number	Chosen arbitrarily by the test house, but not Zero.	
- Training Sequence Code	Chosen arbitrarily by the test house.	
- Hopping	Single RF channel.	
- ARFCN	1	
Handover Reference		
- Handover Reference Value	Chosen arbitrarily by the test house.	
Power Command and ACCESS Type		
- ATC	0	
- EPC_mode	0	REL-5
- FPC	0	R99 and REL-4 only
- EPC_FPC	0	REL-5
- Power level	Chosen arbitrarily by the test house.	
Synchronization Indication	Not present.	
Channel Mode	speech full rate or half rate version 1	
All other information elements	Not present.	

MEASUREMENT REPORT message (step 7)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-RAT Measured results list
-Inter-RAT-frequency measured results (10.3.7.26)	1
-CHOICE System	GSM
-Measured GSM cells	1
-GSM Carrier RSSI	Checked that this IE is present
-CHOICE BSIC	Verified BSIC
-inter-RAT cell id	Checked that this IE is present
-Observed Time difference to GSM cell	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-RAT measurement event results
-Inter-RAT event identity	3C
-Cells to report	1
-CHOICE BSIC	Verified BSIC
-inter-RAT cell id	Checked that this IE is present

8.3.3.4.3 7,68 Mcps option

8.3.3.4.3.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4 for TDD conditions, and clause A.1.2 of TS 51.010-1 [23] for the corresponding GSM conditions.

The test parameters are given in Table 8.3.3.4.1B, 8.3.3.4.2B and 8.3.3.4.3B below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a HANOVER FROM UTRAN COMMAND message with activation time at beginning of T3 with one active cell, cell 2. The HANOVER FROM UTRAN COMMAND message shall be sent to the UE such that the delay between the last the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [9]. In the GSM Handover command contained in this message, IE starting time shall not be included.

Cell 1 is a UTRA TDD cell and cell 2 is a GSM cell. The Beacon timeslot shall be transmitted in timeslot 0 for cell 1 and no second Beacon timeslot shall be provided for cell 1. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3.

Table 8.3.3.4.1B: General test parameters for TDD/GSM handover

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	UTRA TDD cell
	Neighbour cell	Cell 2	GSM cell
Final condition	Active cell	Cell 2	GSM cell
Inter-RAT measurement quantity		GSM carrier RSSI	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for Event 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		12 TDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the start of time period T1.
T _{identify abort}	s	5	As specified in section 8.1.2.5
T _{reconfirm abort}	s	5	As specified in section 8.1.2.5
T1	s	10	
T2	s	10	
T3	s	10	

Table 8.3.3.4.2B: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1					
		0			1		
DL timeslot number		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1					
PCCPCH_Ec/I _{or}	dB	-3			n.a.		
SCH_Ec/I _{or}	dB	-9			n.a.		
SCH_t _{offset}	dB	0			n.a.		
DPCH_Ec/I _{or}	dB	n.a.			Note 1		n.a.
OCNS_Ec/I _{or}	dB	-3,12			Note 2		n.a.
\hat{I}_{or}/I_{oc}	dB	6			6		
PCCPCH RSCP	dBm	-68			n.a.		
I _{oc}	dBm/7,6 8 MHz	-70					
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop							
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or} .							

Table 8.3.3.4.3B: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2, T3
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-85	-75

8.3.3.4.3.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1.
- 2) The UE is switched on

- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 4) The RF parameters for cell 2 are set up according to T1 and the SS configures a traffic channel
- 5) SS shall transmit a MEASUREMENT CONTROL message to cell 1
- 6) After 10 seconds, the SS shall switch the power settings from T1 to T2
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C
- 8) SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time at T3 and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell.
- 9) After 10 seconds, the SS shall switch the power settings from T2 to T3
- 10) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3, then the number of successful tests is increased by one.
[Editor's note: TS 34.108, 7.3.4 shall specify the messages HANDOVER ACCESS, PHYSICAL INFORMATION, SABM, UA and HANDOVER COMPLETE]
- 11) After 10 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 12) Repeat step 1-11 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated below above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

- Note: Numbers in brackets after an item e.g “Message Type (10.2.17)” in the IE description are references to clause numbers in TS 25.331 [9] describing that item in more detail.

MEASUREMENT CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	4 Setup AM RLC Event trigger Not Present
-CHOICE <i>Measurement type</i> -Inter-RAT measurement (10.3.7.27) -Inter-RAT measurement objects list (10.3.7.23) -Inter-RAT measurement quantity (10.3.7.29) -Measurement quantity for UTRAN quality estimate (10.3.7.38) -Filter coefficient -CHOICE mode -Measurement quantity list -Measurement quantity -CHOICE system -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE reported cell -Maximum number of reported cells -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24) -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61)	Inter-RAT measurement Not Present 0 TDD 1 Primary CCPCH RSCP GSM GSM Carrier RSSI 0 Required Not Present Report cells within active set or within virtual active set or of the other RAT 2 Inter-RAT measurement reporting criteria 1 Event 3C Not Present Not Present -80 dBm 0 dB 0 ms Not Present
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	Value/remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -Activation time	0 Not Present At T3
RB information elements -RAB information list -RAB Info	1 Not present
Other information elements -CHOICE System type -Frequency Band -GSM message -Single GSM message -GSM message List	GSM GSM/DCS 1800 Band [TBD] GSM HANDOVER COMMAND formatted as BIT STRING(1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of TS 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 3

MEASUREMENT REPORT message (step 7)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-RAT Measured results list
-Inter-RAT-frequency measured results (10.3.7.26)	1
-CHOICE System	GSM
-Measured GSM cells	1
-GSM Carrier RSSI	Checked that this IE is present
-CHOICE BSIC	Verified BSIC
-inter-RAT cell id	Checked that this IE is present
-Observed Time difference to GSM cell	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-RAT measurement event results
-Inter-RAT event identity	3C
-Cells to report	1
-CHOICE BSIC	Verified BSIC
-inter-RAT cell id	Checked that this IE is present

8.3.3.5 Test requirements

8.3.3.5.1 3,84 Mcps option

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.3.5.2 1,28 Mcps option

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.3.5.3 7,68 Mcps option

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.3a UTRA TDD to E-UTRA FDD Handover

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined

- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.3.3a.1 Definition and applicability

8.3.3a.1.1 3,84 Mcps option

8.3.3a.1.2 1,28 Mcps option

The UTRAN TDD to E-UTRAN FDD cell handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to release 9 and later releases UTRA 1.28Mcps TDD UEs that support release 8 and later releases E-UTRA FDD.

8.3.3a.1.3 7,68 Mcps option

8.3.3a.2 Minimum requirement

8.3.3a.2.1 3,84 Mcps option

8.3.3a.2.2 1,28 Mcps option

The UE shall start to transmit the PRACH to target cell less than 85 ms from the beginning of time period T3.

The rate of correct handovers observed during repeated tests shall be at least 90% .

NOTE:

When the UE receives a RRC HANDOVER FROM UTRAN COMMAND message with activation time "now" or earlier than RRC procedure delay seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink PRACH channel within D_{handover} seconds from the end of the last TTI containing the RRC command, where:

D_{handover} equals the maximum RRC procedure delay defined plus the interruption time

The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms, which is noted as RRC procedure delay.

If the access is delayed to an indicated activation time later than RRC procedure delay seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink PRACH channel at the designated activation time + interruption time.

The interruption time is the time between end of the last TTI in which the UE has received the handover command and the time the UE starts transmission of the PRACH in the new E-UTRA cell, excluding the RRC procedure delay. This requirement applies when UE is not required to perform any synchronisation procedure before transmitting on the new PRACH. When inter-RAT handover to E-UTRAN is commanded, the interruption time shall be less than $T_{\text{interrupt}}$:

$$T_{\text{interrupt}} = T_{\text{search}} + T_{\text{IU}} + 20 \text{ ms}$$

where

T_{search} is the time required to search the target cell when the target cell is not already known when the handover command is received by the UE. If the target cell is known, then $T_{\text{search}} = 0$ ms.

T_{IU} is the interruption uncertainty in acquiring the first available PRACH occasion in the new cell. T_{IU} can be up to 30 ms. It is 15 ms in the test case since the PRACH configuration used in the target cell (E-UTRAN FDD) is assumed to be 4 as specified in table 5.7.1-2 in TS 36.211 [30].

The total interruption time is 35 ms.

Thus the total HO delay is 85 ms.

The normative reference for this requirement is TS 25.123 [2] clauses 5.3a and A.5.3a.

8.3.3a.2.3 7,68 Mcps option

8.3.3a.3 Test purpose

8.3.3a.3.1 3,84 Mcps option

8.3.3a.3.2 1,28 Mcps option

To verify that the UE meets the minimum requirement.

8.3.3a.3.3 7,68 Mcps option

8.3.3a.4 Method of test

8.3.3a.4.1 3,84 Mcps option

8.3.3a.4.2 1,28 Mcps option

8.3.3a.4.2.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table J.2 in Annex J.

The test scenario comprises of 1 UTRAN TDD cell and 1 E-UTRAN FDD cell as given in Table 8.3.3a.4.2.1-1, Table 8.3.3a.4.2.1-2, and Table 8.3.3a.4.2.1-3. Idle interval of 80ms period as defined in TS25.331 is configured before T2 begins to enable E-UTRAN monitoring.

The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively.

A RRC message implying handover shall be sent to the UE during period T2, after the UE has reported Event 3a. The end of the last TTI containing handover message is begin of T3 duration.

Table 8.3.3a.4.2.1-1: General test parameters for UTRAN TDD to E-UTRAN FDD handover test case

Parameter		Unit	Value	Comment
DPCH parameters active cell			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0.
PDSCH parameters			DL Reference Measurement Channel R.0 FDD	As specified in TS 36.133 section A.3.1.1.1
PCFICH/PDCCH/PHICH parameters			DL Reference Measurement Channel R.6 FDD	As specified in TS 36.133 section A.3.1.2.1
Initial conditions	Active cell		Cell 1	UTRA 1.28Mcps TDD cell
	Neighbour cell		Cell 2	E-UTRA FDD cell

Final conditions	Active cell		Cell 2	E-UTRA FDD cell
CP length of cell 2			normal	
PRACH configuration			4	As specified in table 5.7.1-2 in 3GPP TS 36.211
Idle intervals period	ms		80	As specified in TS 25.331
Handover activation time			now	
Access Barring Information			Not Sent	No additional delays in random access procedure.
CIO_{other_RAT}	dB		0	Cell individual offset
H_{3c}	dB		0	Hysteresis parameter for event 3a
T_{Used}	dBm		-80	UTRA event 3a threshold
T_{other_RAT}	dBm		-93	Absolute RSRP threshold for event 3a
TimeToTrigger	dB		0	
Filter coefficient			0	L3 filtering is not used
T1	s		5	
T2	s		≤10	
T3	s		1	

Table 8.3.3a.4.2.1-2: Cell specific test parameters for UTRAN TDD to E-UTRAN FDD handover test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)					
		DwPTS			DwPTS		
Timeslot Number		0			DwPTS		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number ^{Note 1}		Channel 1					
PCCPCH_Ec/lor	dB	-3					
DwPCH_Ec/lor	dB				0		
OCNS_Ec/lor	dB	-3					
\hat{I}_{or}/I_{oc}	dB	11	-3	-3	11	-3	-3
I_{oc}	dBm/1.28 MHz	-80					
PCCPCH_RSCP ^{Note 2}	dBm	-72	-86	-86	n.a.		
I_o ^{Note 2}	dBm/1.28 MHz	-68.67	-78.24	-78.24			
Propagation Condition		AWGN					
Note 1: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number. Note 2: PCCPCH_RSCP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.							

Table 8.3.3a.4.2.1-3: Cell specific test parameters for UTRAN TDD to E-UTRAN FDD handover test case (cell 2)

Parameter	Unit	Cell 2		
		T1	T2	T3

E-UTRA RF Channel Number		2		
BW _{channel}	MHz	10		
OCNG Patterns defined in TS 36.521-3 D.1.1 (OP.1 FDD) and in D.1.2 (OP.2 FDD)		OP.2 FDD	OP.2 FDD	OP.1 FDD
PBCH_RA	dB	0	0	0
PBCH_RB	dB			
PSS_RA	dB			
SSS_RA	dB			
PCFICH_RA	dB			
PHICH_RA	dB			
PHICH_RB	dB			
PDCCH_RA	dB			
PDCCH_RB	dB			
PDSCH_RA	dB			
PDSCH_RB	dB			
OCNG_RA ^{Note 1}	dB			
OCNG_RB ^{Note 1}	dB			
\hat{E}_s / N_{oc}	dB			
N_{oc}	dBm/15kHz	-98		
\hat{E}_s / I_{ot}	dB	-3	13	13
RSRP ^{Note 2}	dBm/15kHz	-101	-85	-85
SCH_RP ^{Note 2}	dBm/15 kHz	-101	-85	-85
I_o ^{Note 2}	dBm/9MHz	-68.45	-57.01	-57.01
Propagation Condition		AWGN		
<p>Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: RSRP, SCH_RP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p>				

8.3.3a.4.2.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1 in table 8.3.3a.5.2-1
- 2) The UE is switched on
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 4) The RF parameters for cell 2 are set up according to T1 in table 8.3.3a.5.2-2 and the SS configures a traffic channel
- 5) SS shall transmit a MEASUREMENT CONTROL message on cell 1
- 6) After 5 seconds, the SS shall switch the power settings from T1 to T2.
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event 3A
- 8) SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time “now” and indicating the traffic channel of the target E-UTRAN cell to the UE through DCCH of the serving UTRAN cell. The start of T3 is defined as the end of the last TTI, containing the HANDOVER COMMAND.
- 9) The UE shall transmit a PRACH to cell 2 implying that it has switched to the E-UTRAN FDD cell. If the UE transmits the PRACH to cell2 less than 85 ms from the beginning of time period T3, then the number of successful tests is increased by one
- 10) At the end of T3 SS shall end the call and UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat step 1-10 until the confidence level according to Tables G.2.3-1 in TS 36.521-3 [33] is achieved

Specific Message Contents

All messages shall use the same content as described in the default message content in clause 9 of TS 34.108 [3] and clause 4.4, 4.6 and 4.7B.1 of TS 36.508 [28], with the following exceptions:

MEASUREMENT CONTROL message (step 5):

Derivation Path: 36.508 [28], clause 4.7B.1 Table 4.7B.1-3: MEASUREMENT CONTROL			
Information Element	Value/remark	Comment	Condition
Message Type			
RRC transaction identifier	0		
Measurement Identity	2		
CHOICE Measurement type	Inter-RAT measurement		
- CHOICE report criteria	Inter-RAT measurement reporting criteria		
- Parameters required for each event	1 entry		
- Inter-RAT event identity	3a		
- Threshold own system	-80 dBm		
- W	0		
- Threshold other system	-68 (-93 dBm)	When measurement quantity is RSRP, range should be (-115..-19), the actual value = Threshold other system - 25 [dBm]	
- Hysteresis	0 dB		
- Time to trigger	0 ms		
- Reporting cell status			
- CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT		
- Maximum number of reported cells	2		
- Idle Interval Information			
- k	3 (80 ms)	The actual idle interval period equal to 2 ^k radio frames.	
- offset	Not present	Default value is 0.	

HANDOVER FROM UTRAN COMMAND message (step 8):

Defined by TS 36.508 Table 4.7B.1-2.

RRCConnectionReconfiguration

Derivation Path: TS 36.508 [28] clause 4.6.1, Table 4.6.1-8 RRCConnectionReconfiguration			
Information Element	Value/remark	Comment	Condition
RRCConnectionReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE{			
rrcConnectionReconfiguration-r8 SEQUENCE {			
mobilityControlInfo	MobilityControlInfo-HO		HO-TO-EUTRA
dedicatedInfoNASList	Not present		
radioResourceConfigDedicated	RadioResourceConfigDedicated-HO-TO-EUTRA(n, m)		HO-TO-EUTRA(n, m)
securityConfigHO	SecurityConfigHO-DEFAULT		HO-TO-EUTRA
}			
}			
}			
}			

SecurityConfigHO-DEFAULT

Derivation Path: 36.508[28] clause 4.6.4, Table 4.6.4-1: SecurityConfigHO-DEFAULT			
Information Element	Value/remark	Comment	Condition
SecurityConfigHO-DEFAULT ::= SEQUENCE {			
handoverType CHOICE {	interRAT		
interRAT SEQUENCE {			
securityAlgorithmConfig SEQUENCE {			
cipheringAlgorithm	Set according to PIXIT parameter for default ciphering algorithm		
integrityProtAlgorithm	Set according to PIXIT parameter for default integrity protection algorithm		
}			
nas-SecurityParamToEUTRA	OCTET STRING (SIZE(6))	This field is used to activate NAS security after inter-RAT handover to E-UTRA. The content is defined in TS 24.301.	
}			
}			

MobilityControlInfo-HO

Derivation Path: 36.508[28] clause 4.6.5, Table 4.6.5-1: MobilityControlInfo-HO			
Information Element	Value/remark	Comment	Condition
MobilityControlInfo-HO ::= SEQUENCE {			
targetPhysCellId	Set according to specific message content		
carrierFreq	Set according to the frequency used for E-UTRA cell under test		
carrierBandwidth ::= SEQUENCE {			
dl-Bandwidth	Set according to the bandwidth used for E-UTRA cell under test		
ul-Bandwidth	Not present		
}			
additionalSpectrumEmission	1		
t304	ms1000		
newUE-Identity	SS arbitrarily selects a value between '003C'H and 'FFF2'H.		
radioResourceConfigCommon	RadioResourceConfigCommon-DEFAULT		
rach-ConfigDedicated	Not present		
}			

RadioResourceConfigCommon-DEFAULT

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-13 RadioResourceConfigCommon-DEFAULT			
Information Element	Value/remark	Comment	Condition
RadioResourceConfigCommon-DEFAULT ::= SEQUENCE {			
rach-ConfigCommon	RACH-ConfigCommon-DEFAULT		
prach-Config	PRACH-Config-DEFAULT		
pdsch-ConfigCommon	PDSCH-ConfigCommon-DEFAULT		
pusch-ConfigCommon	PUSCH-ConfigCommon-DEFAULT		
phich-Config	PHICH-Config-DEFAULT		
pucch-ConfigCommon	PUCCH-ConfigCommon-DEFAULT		
soundingRSUL-ConfigCommon	SoundingRS-UL-ConfigCommon-DEFAULT		
uplinkPowerControlCommon	UplinkPowerControlCommon-DEFAULT		
antennaInfoCommon SEQUENCE {			
antennaPortsCount	an1		
}			
p-Max	Not present		
tdd-Config	Not present		FDD
ul-CyclicPrefixLength	len1		
}			

PRACH-ConfCommonDEFAULT

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-7 PRACH-ConfCommonDEFAULT			
Information Element	Value/remark	Comment	Condition
PRACH-ConfigInfo SEQUENCE {			
prach-ConfigIndex	4		

RadioResourceConfigDedicated-HO-TO-EUTRA(n,m)

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-18 RadioResourceConfigDedicated-HO-TO-EUTRA(n,m)			
Information Element	Value/remark	Comment	Condition
RadioResourceConfigDedicated-HO-TO-EUTRA(n,m) ::= SEQUENCE {			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SEQUENCE {	2 entries		
srb-ToAddMod[1]	SRB-ToAddMod-DEFAULT using condition SRB1		
srb-ToAddMod[2]	SRB-ToAddMod-DEFAULT using condition SRB2		
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF SEQUENCE {	1 entry		
drb-ToAddMod[1]	DRB-ToAddMod-DEFAULT using condition AM		
}			
drb-ToReleaseList	Not present		
mac-MainConfig CHOICE {			
explicitValue	MAC-MainConfig-RBC		
}			
sps-Config	Not present		
physicalConfigDedicated	PhysicalConfigDedicated - DEFAULT using condition RBC		
}			

MAC-MainConfig-RBC

Derivation Path: TS 36.508 [28] clause 4.8.2, Table 4.8.2.1.5-1 MAC-MainConfig-RBC			
Information Element	Value/remark	Comment	Condition
MAC-MainConfig-RBC ::= SEQUENCE {			
ul-SCH-Config SEQUENCE {			
maxHARQ-Tx	n5		
periodicBSR-Timer	sf20		
retxBSR-Timer	sf320		
ttiBundling	FALSE		
}			
drx-Config	Not present		
timeAlignmentTimerDedicated	sf750		
phr-Config CHOICE {			
setup SEQUENCE {			
periodicPHR-Timer	sf500		
prohibitPHR-Timer	sf200		
dl-PathlossChange	dB3		
}			
}			
}			

PhysicalConfigDedicated-DEFAULT

Derivation Path: TS 36.508 [28] clause 4.8.2, Table 4.8.2.1.6-1: PhysicalConfigDedicated-DEFAULT			
Information Element	Value/remark	Comment	Condition
PhysicalConfigDedicated-DEFAULT ::= SEQUENCE {			
pdsch-ConfigDedicated	Not present		HO-TO-EUTRA
pucch-ConfigDedicated	Not present		HO-TO-EUTRA
pusch-ConfigDedicated	Not present		HO-TO-EUTRA
uplinkPowerControlDedicated	Not present		HO-TO-EUTRA
soundingRS-LU-ConfigDedicated	SoundingRS-UI-ConfigDedicated-DEFAULT		HO-TO-EUTRA
schedulingRequestConfig	Not present		HO-TO-EUTRA

Note: Default values are defined in TS 36.331 [31] section 9.2.4.

8.3.3a.4.3 7,68 Mcps option

8.3.3a.5 Test Requirments

8.3.3a.5.1 3,84 Mcps option

8.3.3a.5.2 1,28 Mcps option

Table 8.3.3a.5.2-1: Cell specific test parameters for UTRAN TDD to E-UTRAN FDD handover test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)					
		0			DwPTS		
Timeslot Number		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number ^{Note 1}		Channel 1					
PCCPCH_Ec/lor	dB	-3					
DwPCH_Ec/lor	dB				0		
OCNS_Ec/lor	dB	-3					
\hat{I}_{or}/I_{oc}	dB	12.6	-3	-3	12.6	-3	-3
I_{oc}	dBm/1.28 MHz	-80.8					
PCCPCH RSCP ^{Note 2}	dBm	-71.2	-86.8	-86.8	n.a.		
I_o ^{Note 2}	dBm/1.28 MHz	-67.97	-79.04	-79.04			
Propagation Condition		AWGN					
Note 1:	In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.						
Note 2:	PCCPCH_RSCP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.						

Table 8.3.3a.5.2-2: Cell specific test parameters for UTRAN TDD to E-UTRAN FDD handover test case (cell 2)

Parameter	Unit	Cell 2		
		T1	T2	T3
E-UTRA RF Channel Number		2		
BW_{channel}	MHz	10		
OCNG Patterns defined in TS 36.521-3 D.1.1 (OP.1 FDD) and in D.1.2 (OP.2 FDD)		OP.2 FDD	OP.2 FDD	OP.1 FDD
PBCH_RA	dB	0	0	0
PBCH_RB	dB			
PSS_RA	dB			
SSS_RA	dB			
PCFICH_RA	dB			
PHICH_RA	dB			
PHICH_RB	dB			
PDCCH_RA	dB			
PDCCH_RB	dB			
PDSCH_RA	dB			
PDSCH_RB	dB			
OCNG_RA ^{Note 1}	dB			
OCNG_RB ^{Note 1}	dB			
\hat{E}_s / N_{oc}	dB			
N_{oc}	dBm/15kHz	-98.8		
\hat{E}_s / I_{ot}	dB	-3	14.6	14.6
RSRP ^{Note 2}	dBm/15kHz	-101.8	-84.2	-84.2
SCH_RP ^{Note 2}	dBm/15 kHz	-101.8	-84.2	-84.2
I_o ^{Note 2}	dBm/9MHz	-69.25	-56.27	-56.27
Propagation Condition		AWGN		
Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols. Note 2: RSRP, SCH_RP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.				

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.3a.5.3 7,68 Mcps option

8.3.3b UTRA TDD to E-UTRA TDD Handover

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.3.3b.1 Definition and applicability

8.3.3b.1.1 3,84 Mcps option

8.3.3b.1.2 1,28 Mcps option

The UTRAN TDD to E-UTRAN TDD cell handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to release 9 and later releases UTRA 1.28Mcps TDD UEs that support release 8 and later releases E-UTRA TDD.

8.3.3b.1.3 7,68 Mcps option

8.3.3b.2 Minimum requirement

8.3.3b.2.1 3,84 Mcps option

8.3.3b.2.2 1,28 Mcps option

The UE shall start to transmit the PRACH to target cell less than 80 ms from the beginning of time period T3.

The rate of correct handovers observed during repeated tests shall be at least 90% .

NOTE:

When the UE receives a RRC HANDOVER FROM UTRAN COMMAND message with activation time "now" or earlier than RRC procedure delay seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink UpPTS or PRACH channel within D_{handover} seconds from the end of the last TTI containing the RRC command, where:

- D_{handover} equals the maximum RRC procedure delay defined plus the interruption time

The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms, which is noted as RRC procedure delay.

If the access is delayed to an indicated activation time later than RRC procedure delay seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink PRACH channel at the designated activation time + interruption time.

The interruption time is the time between end of the last TTI in which the UE has received the handover command and the time the UE starts transmission of the PRACH in the new E-UTRA cell, excluding the RRC procedure delay. This requirement applies when UE is not required to perform any synchronisation procedure before transmitting on the new PRACH.

When inter-RAT handover to E-UTRAN is commanded, the interruption time shall be less than $T_{\text{interrupt}}$:

$$T_{\text{interrupt}} = T_{\text{search}} + T_{\text{IU}} + 20 \text{ ms}$$

where

T_{search} is the time required to search the target cell when the target cell is not already known when the handover command is received by the UE. If the target cell is known, then $T_{\text{search}} = 0$ ms.

T_{IU} is the interruption uncertainty in acquiring the first available UpPTS or PRACH occasion in the new cell. T_{IU} can be up to 30 ms. It is 10 ms in the test case since the PRACH configuration used in the target cell (E-UTRAN TDD) is assumed to be 53 as specified in tables 5.7.1-3 and 5.7.1-4 in TS 36.211 [30].

The total interruption time is 30 ms.

Thus the total HO delay is 80 ms.

The normative reference for this requirement is TS 25.123 [2] clauses 5.3b and A.5.3b.

8.3.3b.2.3 7,68 Mcps option

8.3.3b.3 Test purpose

8.3.3b.3.1 3,84 Mcps option

8.3.3b.3.2 1,28 Mcps option

To verify that the UE meets the minimum requirement.

8.3.3b.3.3 7,68 Mcps option

8.3.3b.4 Method of test

8.3.3b.4.1 3,84 Mcps option

8.3.3b.4.2 1,28 Mcps option

8.3.3b.4.2.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table J.2 in Annex J.

The test scenario comprises of 1 UTRAN TDD cell and 1 E-UTRAN TDD cell as given in Table 8.3.3b.4.2.1-1, Table 8.3.3b.4.2.1-2, and Table 8.3.3b.4.2.1-3. Idle interval of 80ms period as defined in TS25.331 is configured before T2 begins to enable E-UTRAN monitoring.

The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively.

A RRC message implying handover shall be sent to the UE during period T2, after the UE has reported Event 3a. The end of the last TTI containing handover message is begin of T3 duration.

Table 8.3.3b.4.2.1-1: General test parameters for UTRAN TDD to E-UTRAN TDD handover test case

Parameter		Unit	Value	Comment
DPCH parameters active cell			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0.
PDSCH parameters			DL Reference Measurement Channel R.0 TDD	As specified in section A.3.1.1.2 in TS 36.133 [26]
PCFICH/PDCCH/PHICH parameters			DL Reference Measurement Channel R.6 TDD	As specified in section A.3.1.2.2 in TS 36.133 [26]
Initial conditions	Active cell		Cell 1	UTRA 1.28Mcps TDD cell
	Neighbour cell		Cell 2	E-UTRA TDD cell

Final conditions	Active cell		Cell 2	E-UTRA TDD cell
CP length of cell 2			normal	
Uplink-downlink configuration			1	As specified in table 4.2-2 in 3GPP TS 36.211
Special subframe configuration			6	As specified in table 4.2-1 in 3GPP TS 36.211
PRACH configuration			53	As specified in table 5.7.1-3 in 3GPP TS 36.211
Idle intervals period	ms		80	As specified in TS 25.331
Handover activation time			now	
Access Barring Information			Not Sent	No additional delays in random access procedure.
CIO_{other_RAT}	dB		0	Cell individual offset
H_{3c}	dB		0	Hysteresis parameter for event 3a
T_{Used}	dBm		-80	UTRA event 3a threshold
T_{other_RAT}	dBm		-93	Absolute RSRP threshold for event 3a
TimeToTrigger	dB		0	
Filter coefficient			0	L3 filtering is not used
T1	s		5	
T2	s		≤10	
T3	s		1	

Table 8.3.3b.4.2.1-2: Cell specific test parameters for UTRAN TDD to E-UTRAN TDD handover test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)					
		0			DwPTS		
Timeslot Number		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number ^{Note 1}		Channel 1					
PCCPCH_Ec/Ior	dB	-3					
DwPCH_Ec/Ior	dB	0					
OCNS_Ec/Ior	dB	-3					
\hat{I}_{or}/I_{oc}	dB	11	-3	-3	11	-3	-3
I_{oc}	dBm/1.28 MHz	-80					
PCCPCH_RSCP ^{Note 2}	dBm	-72	-86	-86	n.a.		
I_o ^{Note 2}	dBm/1.28 MHz	-68.67	-78.24	-78.24			
Propagation Condition		AWGN					
Note 1: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.							
Note 2: PCCPCH_RSCP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.							

Table 8.3.3b. 4.2.1-3: Cell specific test parameters for UTRAN TDD to E-UTRAN TDD handover test case (cell 2)

Parameter	Unit	Cell 2		
		T1	T2	T3

E-UTRA RF Channel Number		2		
BW _{channel}	MHz	10		
OCNG Patterns defined in TS 36.521-3 D.2.1 (OP.1 TDD) and in D.2.2 (OP.2 TDD)		OP.2 TDD	OP.2 TDD	OP.1 TDD
PBCH_RA	dB	0	0	0
PBCH_RB	dB			
PSS_RA	dB			
SSS_RA	dB			
PCFICH_RA	dB			
PHICH_RA	dB			
PHICH_RB	dB			
PDCCH_RA	dB			
PDCCH_RB	dB			
PDSCH_RA	dB			
PDSCH_RB	dB			
OCNG_RA ^{Note 1}	dB			
OCNG_RB ^{Note 1}	dB			
\hat{E}_s / N_{oc}	dB			
N_{oc}	dBm/15kHz	-98		
\hat{E}_s / I_{ot}	dB	-3	13	13
RSRP ^{Note 2}	dBm/15 kHz	-101	-85	-85
SCH_RP ^{Note 2}	dBm/15 kHz	-101	-85	-85
I_o ^{Note 2}	dBm/9MHz	-68.45	-57.01	-57.01
Propagation Condition		AWGN		
<p>Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: RSRP, SCH_RP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p>				

8.3.3b.4.2.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1 in table 8.3.3b.5.2-1
- 2) The UE is switched on
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 4) The RF parameters for cell 2 are set up according to T1 in table 8.3.3b.5.2-2 and the SS configures a traffic channel. T1 Starts.
- 5) SS shall transmit a MEASUREMENT CONTROL message on cell 1
- 6) After T1 expired, the SS shall switch the power settings from T1 to T2.
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event 3A
- 8) SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time “now” and indicating the traffic channel of the target E-UTRAN cell to the UE through DCCH of the serving UTRAN cell. The start of T3 is defined as the end of the last TTI, containing the HANDOVER COMMAND, at that instant the SS shall switch the power setting from T2 to T3 as specified in Table 8.3.3b.5.2-1 and Table 8.3.3b.5.2-2.
- 9) The UE shall transmit a PRACH to cell 2 implying that it has switched to the E-UTRAN TDD cell. If the UE transmits the PRACH to cell2 less than 80 ms from the beginning of time period T3, then the number of successful tests is increased by one
- 10) At the end of T3 SS shall end the call and UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat step 1-10 until the confidence level according to Tables G.2.3-1 in TS 36.521-3 [33] is achieved

Specific Message Contents

All messages shall use the same content as described in the default message content in clause 9 of TS 34.108 [3] and clause 4.4, 4.6 and 4.7B.1 of TS 36.508 [28], with the following exceptions:

MEASUREMENT CONTROL message (step 5):

Derivation Path: 36.508 [28], clause 4.7B.1 Table 4.7B.1-3: MEASUREMENT CONTROL			
Information Element	Value/remark	Comment	Condition
Message Type			
RRC transaction identifier	0		
Measurement Identity	2		
CHOICE Measurement type	Inter-RAT measurement		
- CHOICE report criteria	Inter-RAT measurement reporting criteria		
- Parameters required for each event	1 entry		
- Inter-RAT event identity	3a		
- Threshold own system	-80 dBm		
- W	0		
- Threshold other system	-68 (-93 dBm)	When measurement quantity is RSRP, range should be (-115..-19), the actual value = Threshold other system - 25 [dBm]	
- Hysteresis	0 dB		
- Time to trigger	0 ms		
- Reporting cell status			
- CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT		
- Maximum number of reported cells	2		
- Idle Interval Information			
- k	3 (80 ms)	The actual idle interval period equal to 2 ^k radio frames.	
- offset	Not present	Default value is 0.	

HANDOVER FROM UTRAN COMMAND message (step 8):

Defined by TS 36.508 Table 4.7B.1-2.

RRCConnectionReconfiguration

Derivation Path: TS 36.508 [28] clause 4.6.1, Table 4.6.1-8 RRCConnectionReconfiguration			
Information Element	Value/remark	Comment	Condition
RRCConnectionReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE{			
rrcConnectionReconfiguration-r8 SEQUENCE {			
mobilityControlInfo	MobilityControlInfo-HO		HO-TO-EUTRA
dedicatedInfoNASList	Not present		
radioResourceConfigDedicated	RadioResourceConfigDedicated-HO-TO-EUTRA(n, m)		HO-TO-EUTRA(n, m)
securityConfigHO	SecurityConfigHO-DEFAULT		HO-TO-EUTRA
}			
}			
}			
}			

SecurityConfigHO-DEFAULT

Derivation Path: 36.508[28] clause 4.6.4, Table 4.6.4-1: SecurityConfigHO-DEFAULT			
Information Element	Value/remark	Comment	Condition
SecurityConfigHO-DEFAULT ::= SEQUENCE {			
handoverType CHOICE {	interRAT		
interRAT SEQUENCE {			
securityAlgorithmConfig SEQUENCE {			
cipheringAlgorithm	Set according to PIXIT parameter for default ciphering algorithm		
integrityProtAlgorithm	Set according to PIXIT parameter for default integrity protection algorithm		
}			
nas-SecurityParamToEUTRA	OCTET STRING (SIZE(6))	This field is used to activate NAS security after inter-RAT handover to E-UTRA. The content is defined in TS 24.301.	
}			
}			
}			
}			

MobilityControlInfo-HO

Derivation Path: 36.508[28] clause 4.6.5, Table 4.6.5-1: MobilityControlInfo-HO			
Information Element	Value/remark	Comment	Condition
MobilityControlInfo-HO ::= SEQUENCE {			
targetPhysCellId	Set according to specific message content		
carrierFreq	Set according to the frequency used for E-UTRA cell under test		
carrierBandwidth ::= SEQUENCE {			
dl-Bandwidth	Set according to the bandwidth used for E-UTRA cell under test		
ul-Bandwidth	Not present		
}			
additionalSpectrumEmission	1		
t304	ms1000		
newUE-Identity	SS arbitrarily selects a value between '003C'H and 'FFF2'H.		
radioResourceConfigCommon	RadioResourceConfigCommon-DEFAULT		
rach-ConfigDedicated	Not present		
}			

RadioResourceConfigCommon-DEFAULT

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-13 RadioResourceConfigCommon-DEFAULT			
Information Element	Value/remark	Comment	Condition
RadioResourceConfigCommon-DEFAULT ::= SEQUENCE {			
rach-ConfigCommon	RACH-ConfigCommon-DEFAULT		
prach-Config	PRACH-Config-DEFAULT		
pdsch-ConfigCommon	PDSCH-ConfigCommon-DEFAULT		
pusch-ConfigCommon	PUSCH-ConfigCommon-DEFAULT		
phich-Config	PHICH-Config-DEFAULT		
pucch-ConfigCommon	PUCCH-ConfigCommon-DEFAULT		
soundingRSUL-ConfigCommon	SoundingRS-UL-ConfigCommon-DEFAULT		
uplinkPowerControlCommon	UplinkPowerControlCommon-DEFAULT		
antennaInfoCommon SEQUENCE {			
antennaPortsCount	an1		
}			
p-Max	Not present		
tdd-Config	TDD-Config-DEFAULT		TDD
ul-CyclicPrefixLength	len1		
}			

PRACH-ConfCommonDEFAULT

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-7 PRACH-ConfCommonDEFAULT			
Information Element	Value/remark	Comment	Condition
PRACH-ConfigInfo SEQUENCE {			
prach-ConfigIndex	53		

RadioResourceConfigDedicated-HO-TO-EUTRA(n,m)

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-18 RadioResourceConfigDedicated-HO-TO-EUTRA(n,m)			
Information Element	Value/remark	Comment	Condition
RadioResourceConfigDedicated-HO-TO-EUTRA(n,m) ::= SEQUENCE {			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SEQUENCE {	2 entries		
srb-ToAddMod[1]	SRB-ToAddMod-DEFAULT using condition SRB1		
srb-ToAddMod[2]	SRB-ToAddMod-DEFAULT using condition SRB2		
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF SEQUENCE {	1 entry		
drb-ToAddMod[1]	DRB-ToAddMod-DEFAULT using condition AM		
}			
drb-ToReleaseList	Not present		
mac-MainConfig CHOICE {			
explicitValue	MAC-MainConfig-RBC		
}			
sps-Config	Not present		
physicalConfigDedicated	PhysicalConfigDedicated - DEFAULT using condition RBC		
}			

MAC-MainConfig-RBC

Derivation Path: TS 36.508 [28] clause 4.8.2, Table 4.8.2.1.5-1 MAC-MainConfig-RBC			
Information Element	Value/remark	Comment	Condition
MAC-MainConfig-RBC ::= SEQUENCE {			
ul-SCH-Config SEQUENCE {			
maxHARQ-Tx	n5		
periodicBSR-Timer	sf20		
retxBSR-Timer	sf320		
ttiBundling	FALSE		
}			
drx-Config	Not present		
timeAlignmentTimerDedicated	sf750		
phr-Config CHOICE {			
setup SEQUENCE {			
periodicPHR-Timer	sf500		
prohibitPHR-Timer	sf200		
dl-PathlossChange	dB3		
}			
}			
}			

PhysicalConfigDedicated-DEFAULT

Derivation Path: TS 36.508 [28] clause 4.8.2, Table 4.8.2.1.6-1: PhysicalConfigDedicated-DEFAULT			
Information Element	Value/remark	Comment	Condition
PhysicalConfigDedicated-DEFAULT ::= SEQUENCE {			
pdsch-ConfigDedicated	Not present		HO-TO-EUTRA
pucch-ConfigDedicated	Not present		HO-TO-EUTRA
pusch-ConfigDedicated	Not present		HO-TO-EUTRA
uplinkPowerControlDedicated	Not present		HO-TO-EUTRA
soundingRS-LU-ConfigDedicated	SoundingRS-UI-ConfigDedicated-DEFAULT		HO-TO-EUTRA
schedulingRequestConfig	Not present		HO-TO-EUTRA

Note: Default values are defined in TS 36.331 [31] section 9.2.4.

8.3.3b.4.3 7,68 Mcps option

8.3.3b.5 Test Requirments

8.3.3b.5.1 3,84 Mcps option

8.3.3b.5.2 1,28 Mcps option

Table 8.3.3b.5.2-1: Cell specific test parameters for UTRAN TDD to E-UTRAN TDD handover test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)					
		0			DwPTS		
Timeslot Number		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number ^{Note 1}		Channel 1					
PCCPCH_Ec/lor	dB	-3					
DwPCH_Ec/lor	dB				0		
OCNS_Ec/lor	dB	-3					
\hat{I}_{or}/I_{oc}	dB	12.6	-3	-3	12.6	-3	-3
I_{oc}	dBm/1.28 MHz	-80.8					
PCCPCH RSCP ^{Note 2}	dBm	-71.2	-86.8	-86.8	n.a.		
I_o ^{Note 2}	dBm/1.28 MHz	-67.97	-79.04	-79.04			
Propagation Condition		AWGN					
Note 1:	In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.						
Note 2:	PCCPCH_RSCP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.						

Table 8.3.3b.5.2-2: Cell specific test parameters for UTRAN TDD to E-UTRAN TDD handover test case (cell 2)

Parameter	Unit	Cell 2		
		T1	T2	T3
E-UTRA RF Channel Number		2		
$BW_{channel}$	MHz	10		
OCNG Patterns defined in TS 36.521-3 D.2.1 (OP.1 TDD) and in D.2.2 (OP.2 TDD)		OP.2 TDD	OP.2 TDD	OP.1 TDD
PBCH_RA	dB	0	0	0
PBCH_RB	dB			
PSS_RA	dB			
SSS_RA	dB			
PCFICH_RA	dB			
PHICH_RA	dB			
PHICH_RB	dB			
PDCCH_RA	dB			
PDCCH_RB	dB			
PDSCH_RA	dB			
PDSCH_RB	dB			
OCNG_RA ^{Note 1}	dB			
OCNG_RB ^{Note 1}	dB			
\hat{E}_s / N_{oc}	dB			
N_{oc}	dBm/15kHz	-98.8		
\hat{E}_s / I_{ot}	dB	-3	14.6	14.6
RSRP ^{Note 2}	dBm/15 kHz	-101.8	-84.2	-84.2
SCH_RP ^{Note 2}	dBm/15 kHz	-101.8	-84.2	-84.2
I_o ^{Note 2}	dBm/9MHz	-69.25	-56.27	-56.27
Propagation Condition		AWGN		
Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols. Note 2: RSRP, SCH_RP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.				

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.3b.5.3 7,68 Mcps option

8.3.3c UTRA TDD to E-UTRA FDD Handover: unknown target cell

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.3.3c.1 Definition and applicability

8.3.3c.1.1 3,84 Mcps option

8.3.3c.1.2 1,28 Mcps option

The UTRAN TDD to E-UTRAN FDD cell handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to release 9 and later releases UTRA 1.28Mcps TDD UEs that support release 8 and later releases E-UTRA FDD.

8.3.3c.1.3 7,68 Mcps option

8.3.3c.2 Minimum requirement

8.3.3c.2.1 3,84 Mcps option

8.3.3c.2.2 1,28 Mcps option

The UE shall start to transmit the PRACH to Cell 2 less than 165 ms from the beginning of time period T2.

The rate of correct handovers observed during repeated tests shall be at least 90%.

NOTE: When the UE receives a RRC HANDOVER FROM UTRAN COMMAND message with activation time "now" or earlier than RRC procedure delay seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink PRACH channel within D_{handover} seconds from the end of the last TTI containing the RRC command, where:

D_{handover} equals the maximum RRC procedure delay defined plus the interruption time

The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms, which is noted as RRC procedure delay.

If the access is delayed to an indicated activation time later than RRC procedure delay seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink PRACH channel at the designated activation time + interruption time.

The interruption time is the time between end of the last TTI in which the UE has received the handover command and the time the UE starts transmission of the PRACH in the new E-UTRA cell, excluding the RRC procedure delay. This requirement applies when UE is not required to perform any synchronisation procedure before transmitting on the new PRACH. When inter-RAT handover to E-UTRAN is commanded, the interruption time shall be less than $T_{\text{interrupt}}$:

$$T_{\text{interrupt}} = T_{\text{search}} + T_{\text{IU}} + 20 \text{ ms}$$

where

T_{search} is the time required to search the target cell when the target cell is not already known when the handover command is received by the UE. If the target cell is known, then $T_{\text{search}} = 0$ ms. If the target cell is unknown and signal quality is sufficient for successful cell detection on the first attempt, then $T_{\text{search}} = 80$ ms.

T_{IU} is the interruption uncertainty in acquiring the first available PRACH occasion in the new cell. T_{IU} can be up to 30 ms. It is 15 ms in the test case since the PRACH configuration used in the target cell (E-UTRAN FDD) is assumed to be 4 as specified in table 5.7.1-2 in TS 36.211 [30].

The total interruption time is 115 ms.

Thus the total HO delay is 165 ms.

The normative reference for this requirement is TS 25.123 [2] clauses 5.3a and A.5.3c.

8.3.3c.2.3 7,68 Mcps option

8.3.3c.3 Test purpose

8.3.3c.3.1 3,84 Mcps option

8.3.3c.3.2 1,28 Mcps option

To verify that the UE meets the minimum requirement.

8.3.3c.3.3 7,68 Mcps option

8.3.3c.4 Method of test

8.3.3c.4.1 3,84 Mcps option

8.3.3c.4.2 1,28 Mcps option

8.3.3c.4.2.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table J.2 in Annex J.

The test scenario comprises of 1 UTRAN TDD cell and 1 E-UTRAN FDD cell as given in Table 8.3.3c.1, Table 8.3.3c.2, and Table 8.3.3c.3.

The test consists of three successive time periods, with time durations of T1, T2 respectively.

During time duration T1, a RRC HANDOVER FROM UTRAN COMMAND message shall be sent to the UE with activation time "now" with a new active E-UTRA FDD cell, cell2. The end of the last TTI containing handover message is the beginning of T2 duration. At the start of time duration T2, the UE does not have any timing information of Cell 2.

Table 8.3.3c.1: General test parameters for UTRAN TDD to unknown E-UTRA FDD handover test case

Parameter		Unit	Value	Comment
DPCH parameters active cell			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0.
PDSCH parameters			DL Reference Measurement Channel R.0 FDD	As specified in TS 36.133 section A.3.1.1.1
PCFICH/PDCCH/PHICH parameters			DL Reference Measurement Channel R.6 FDD	As specified in TS 36.133 section A.3.1.2.1
Initial conditions	Active cell		Cell 1	UTRA 1.28Mcps TDD cell
	Neighbour cell		Cell 2	E-UTRA FDD cell
Final conditions	Active cell		Cell 2	E-UTRA FDD cell
CP length of cell 2			Normal	
PRACH configuration			4	As specified in table 5.7.1-2 in 3GPP TS 36.211
Handover activation time			Now	
Access Barring Information			Not Sent	No additional delays in random access procedure.
TimeToTrigger		ms	0	
Filter coefficient			0	L3 filtering is not used
Hysteresis		dB	0	
T1		s	5	During T1, cell 2 shall be powered off, and during the off time the physical layer cell identity shall be changed.
T2		s	1	

Table 8.3.3c.2: Cell specific test parameters for UTRAN TDD to unknown E-UTRA FDD handover test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
		0		DwPTS	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number*		Channel 1			
PCCPCH_Ec/lor	dB	-3			
DwPCH_Ec/lor	dB			0	
OCNS_Ec/lor	dB	-3			
\hat{I}_{or}/I_{oc}	dB	4	4	4	4
I_{oc}	dBm/1.28 MHz	-80			
PCCPCH RSCP	dBm	-79	-79	n.a.	
Propagation Condition		AWGN			
* Note: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.					

Table 8.3.3c.3: Cell specific test parameters for UTRAN TDD to unknown E-UTRA FDD handover test case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2
E-UTRA RF Channel Number		2	
$BW_{channel}$	MHz	10	
OCNG Patterns defined in TS 36.521-3 D.2.1 (OP.1 FDD) and in D.2.2(OP.2 FDD)		OP.2 FDD	OP.1 FDD
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RA	dB		
SSS_RA	dB		
PCFICH_RA	dB		
PHICH_RA	dB		
PHICH_RB	dB		
PDCCH_RA	dB		
PDCCH_RB	dB		
PDSCH_RA	dB		
PDSCH_RB	dB		
OCNG_RA ^{NOTE1}	dB		
OCNG_RB ^{NOTE1}	dB		
\hat{E}_s/N_{oc}	dB	-Infinity	0
N_{oc}	dBm/15kHz	-98	
\hat{E}_s/I_{ot}	dB	-Infinity	0
RSRP	dBm/15kHz	-Infinity	-98
SCH_RP	dBm/15kHz	-Infinity	-98
Propagation Condition		AWGN	
Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.			
Note 2: RSRP levels have been derived from other parameters for information purposes. They are not settable parameters themselves.			

8.3.3c.4.2.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1 in table 8.3.3c.4
- 2) The UE is switched on

- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 4) SS shall transmit a HANOVER FROM UTRAN COMMAND message with activation time “now” and indicating the traffic channel of the target E-UTRAN cell to the UE through DCCH of the serving UTRAN cell. At that instant the SS shall switch the power settings from T1 to T2 as specified in Tables 8.3.3c.4 and 8.3.3c.5 T2 starts.
- 5) The UE shall transmit a PRACH to cell 2 implying that it has switched to the E-UTRAN FDD cell. If the UE transmits the PRACH to cell2 less than 165 ms from the beginning of time period T2, then the number of successful tests is increased by one
- 6) At the end of T2 SS shall end the call and UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 7) Repeat step 1-6 until the confidence level according to Tables G.2.3-1 in TS 36.521-3 [33] is achieved

Specific Message Contents

All messages shall use the same content as described in the default message content in clause 9 of TS 34.108 [3] and clause 4.4, 4.6 and 4.7B.1 of TS 36.508 [28], with the following exceptions:

HANOVER FROM UTRAN COMMAND message (step 4):

Information Element	Value/remark
Message Type (10.2.15 in TS25.331)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Activation time	Now
RB information elements	
-RAB information list	1
-RAB Info	
- RAB identity	0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	CS domain
- NAS Synchronization Indicator	Not present
- Re-establishment timer	Use T315
Other information elements	
-CHOICE System type	E-UTRA
-E-UTRA message	Formatted and coded according to E-UTRA specifications. The first/leftmost/most significant bit of the octet string contains bit 8 of the first octet of the E-UTRA message.

RRCConnectionReconfiguration

Derivation Path: TS 36.508 [28] clause 4.6.1, Table 4.6.1-8 RRCConnectionReconfiguration			
Information Element	Value/remark	Comment	Condition
RRCConnectionReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE{			
rrcConnectionReconfiguration-r8 SEQUENCE {			
mobilityControlInfo	MobilityControlInfo-HO		HO-TO-EUTRA
dedicatedInfoNASList	Not present		
radioResourceConfigDedicated	RadioResourceConfigDedicated-HO-TO-EUTRA(n, m)		HO-TO-EUTRA(n,m)
securityConfigHO	SecurityConfigHO-DEFAULT		HO-TO-EUTRA
}			
}			
}			
}			

SecurityConfigHO-DEFAULT

Derivation Path: 36.508[28] clause 4.6.4, Table 4.6.4-1: SecurityConfigHO-DEFAULT			
Information Element	Value/remark	Comment	Condition
SecurityConfigHO-DEFAULT ::= SEQUENCE {			
handoverType CHOICE {	interRAT		
interRAT SEQUENCE {			
securityAlgorithmConfig SEQUENCE {			
cipheringAlgorithm	Set according to PIXIT parameter for default ciphering algorithm		
integrityProtAlgorithm	Set according to PIXIT parameter for default integrity protection algorithm		
}			
nas-SecurityParamToEUTRA	OCTET STRING (SIZE(6))	This field is used to activate NAS security after inter-RAT handover to E-UTRA. The content is defined in TS 24.301.	
}			
}			
}			

MobilityControlInfo-HO

Derivation Path: 36.508[28] clause 4.6.5, Table 4.6.5-1: MobilityControlInfo-HO			
Information Element	Value/remark	Comment	Condition
MobilityControlInfo-HO ::= SEQUENCE {			
targetPhysCellId	Set according to specific message content		
carrierFreq	Set according to the frequency used for E-UTRA cell under test		
carrierBandwidth ::= SEQUENCE {			
dl-Bandwidth	Set according to the bandwidth used for E-UTRA cell under test		
ul-Bandwidth	Not present		
}			
additionalSpectrumEmission	1		
t304	ms1000		
newUE-Identity	SS arbitrarily selects a value between '003C'H and 'FFF2'H.		
radioResourceConfigCommon	RadioResourceConfigCommon-DEFAULT		
rach-ConfigDedicated	Not present		
}			

RadioResourceConfigCommon-DEFAULT

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-13 RadioResourceConfigCommon-DEFAULT			
Information Element	Value/remark	Comment	Condition
RadioResourceConfigCommon-DEFAULT ::= SEQUENCE {			
rach-ConfigCommon	RACH-ConfigCommon-DEFAULT		
prach-Config	PRACH-Config-DEFAULT		
pdsch-ConfigCommon	PDSCH-ConfigCommon-DEFAULT		
pusch-ConfigCommon	PUSCH-ConfigCommon-DEFAULT		
phich-Config	PHICH-Config-DEFAULT		
pucch-ConfigCommon	PUCCH-ConfigCommon-DEFAULT		
soundingRSUL-ConfigCommon	SoundingRS-UL-ConfigCommon-DEFAULT		
uplinkPowerControlCommon	UplinkPowerControlCommon-DEFAULT		
antennaInfoCommon SEQUENCE {			
antennaPortsCount	an1		
}			
p-Max	Not present		
tdd-Config	Not present		FDD
ul-CyclicPrefixLength	len1		
}			

PRACH-ConfCommonDEFAULT

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-7 PRACH-ConfCommonDEFAULT			
Information Element	Value/remark	Comment	Condition
PRACH-ConfigInfo SEQUENCE {			
prach-ConfigIndex	4		

RadioResourceConfigDedicated-HO-TO-EUTRA(n,m)

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-18 RadioResourceConfigDedicated-HO-TO-EUTRA(n,m)			
Information Element	Value/remark	Comment	Condition
RadioResourceConfigDedicated-HO-TO-EUTRA(n,m) ::= SEQUENCE {			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SEQUENCE {	2 entries		
srb-ToAddMod[1]	SRB-ToAddMod-DEFAULT using condition SRB1		
srb-ToAddMod[2]	SRB-ToAddMod-DEFAULT using condition SRB2		
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF SEQUENCE {	1 entry		
drb-ToAddMod[1]	DRB-ToAddMod-DEFAULT using condition AM		
}			
drb-ToReleaseList	Not present		
mac-MainConfig CHOICE {			
explicitValue	MAC-MainConfig-RBC		
}			
sps-Config	Not present		
physicalConfigDedicated	PhysicalConfigDedicated - DEFAULT using condition RBC		
}			

MAC-MainConfig-RBC

Derivation Path: TS 36.508 [28] clause 4.8.2, Table 4.8.2.1.5-1 MAC-MainConfig-RBC			
Information Element	Value/remark	Comment	Condition
MAC-MainConfig-RBC ::= SEQUENCE {			
ul-SCH-Config SEQUENCE {			
maxHARQ-Tx	n5		
periodicBSR-Timer	sf20		
retxBSR-Timer	sf320		
ttiBundling	FALSE		
}			
drx-Config	Not present		
timeAlignmentTimerDedicated	sf750		
phr-Config CHOICE {			
setup SEQUENCE {			
periodicPHR-Timer	sf500		
prohibitPHR-Timer	sf200		
dl-PathlossChange	dB3		
}			
}			
}			

PhysicalConfigDedicated-DEFAULT

Derivation Path: TS 36.508 [28] clause 4.8.2, Table 4.8.2.1.6-1: PhysicalConfigDedicated-DEFAULT			
Information Element	Value/remark	Comment	Condition
PhysicalConfigDedicated-DEFAULT ::= SEQUENCE {			
pdsch-ConfigDedicated	Not present		HO-TO-EUTRA
pucch-ConfigDedicated	Not present		HO-TO-EUTRA
pusch-ConfigDedicated	Not present		HO-TO-EUTRA
uplinkPowerControlDedicated	Not present		HO-TO-EUTRA
soundingRS-LU-ConfigDedicated	SoundingRS-UI-ConfigDedicated-DEFAULT		HO-TO-EUTRA
schedulingRequestConfig	Not present		HO-TO-EUTRA

Note: Default values are defined in TS 36.331 [31] section 9.2.4.

8.3.3c.4.3 7,68 Mcps option

8.3.3c.5 Test Requirments

8.3.3c.5.1 3,84 Mcps option

8.3.3c.5.2 1,28 Mcps option

Table 8.3.3c.4: Cell specific test parameters for UTRAN TDD to unknown E-UTRA FDD handover test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
		0		DwPTS	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number*		Channel 1			
PCCPCH_Ec/Ior	dB	-3			
DwPCH_Ec/Ior	dB			0	
OCNS_Ec/Ior	dB	-3			
\hat{I}_{or}/I_{oc}	dB	4	4	4	4
I_{oc}	dBm/1.28 MHz	-80			
PCCPCH RSCP	dBm	-79	-79	n.a.	
Propagation Condition		AWGN			
* Note: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.					

Table 8.3.3c.5: Cell specific test parameters for UTRAN TDD to unknown E-UTRA FDD handover test case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2
E-UTRA RF Channel Number		2	
BW_{channel}	MHz	10	
OCNG Patterns defined in TS 36.521-3 D.2.1 (OP.1 FDD) and in D.2.2(OP.2 FDD)		OP.2 FDD	OP.1 FDD
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RA	dB		
SSS_RA	dB		
PCFICH_RA	dB		
PHICH_RA	dB		
PHICH_RB	dB		
PDCCH_RA	dB		
PDCCH_RB	dB		
PDSCH_RA	dB		
PDSCH_RB	dB		
OCNG_RA ^{NOTE1}	dB		
OCNG_RB ^{NOTE1}	dB		
\hat{E}_s/N_{oc}	dB		
N_{oc}	dBm/15kHz	-98	
\hat{E}_s/I_{ot}	dB	-Infinity	0
RSRP	dBm/15kHz	-Infinity	-98
SCH_RP	dBm/15kHz	-Infinity	-98
Propagation Condition		AWGN	
Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols. Note 2: RSRP levels have been derived from other parameters for information purposes. They are not settable parameters themselves.			

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.3c.5.3 7,68 Mcps option

8.3.3d UTRA TDD to E-UTRA TDD Handover: unknown target cell

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.3.3d.1 Definition and applicability

8.3.3d.1.1 3,84 Mcps option

8.3.3d.1.2 1,28 Mcps option

The UTRAN TDD to E-UTRAN TDD cell handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to release 9 and later releases UTRA 1.28Mcps TDD UEs that support release 8 and later releases E-UTRA TDD.

8.3.3d.1.3 7,68 Mcps option

8.3.3d.2 Minimum requirement

8.3.3d.2.1 3,84 Mcps option

8.3.3d.2.2 1,28 Mcps option

The UE shall start to transmit the PRACH to Cell 2 less than 160 ms from the beginning of time period T2.

The rate of correct handovers observed during repeated tests shall be at least 90% .

NOTE: When the UE receives a RRC HANDOVER FROM UTRAN COMMAND message with activation time "now" or earlier than RRC procedure delay seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink PRACH channel within D_{handover} seconds from the end of the last TTI containing the RRC command, where:

D_{handover} equals the maximum RRC procedure delay defined plus the interruption time

The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms, which is noted as RRC procedure delay.

If the access is delayed to an indicated activation time later than RRC procedure delay seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink PRACH channel at the designated activation time + interruption time.

The interruption time is the time between end of the last TTI in which the UE has received the handover command and the time the UE starts transmission of the PRACH in the new E-UTRA cell, excluding the RRC procedure delay. This requirement applies when UE is not required to perform any synchronisation procedure before transmitting on the new PRACH. When inter-RAT handover to E-UTRAN is commanded, the interruption time shall be less than $T_{\text{interrupt}}$:

$$T_{\text{interrupt}} = T_{\text{search}} + T_{\text{IU}} + 20 \text{ ms}$$

where

T_{search} is the time required to search the target cell when the target cell is not already known when the handover command is received by the UE. If the target cell is known, then $T_{\text{search}} = 0$ ms. If the target cell is unknown and signal quality is sufficient for successful cell detection on the first attempt, then $T_{\text{search}} = 80$ ms.

T_{IU} is the interruption uncertainty in acquiring the first available PRACH occasion in the new cell. T_{IU} can be up to 30 ms. It is 10 ms in the test case since the PRACH configuration used in the target cell (E-UTRAN TDD) is assumed to be 53 as specified in tables 5.7.1-3 and 5.7.1-4 in TS 36.211 [30].

The total interruption time is 110 ms.

Thus the total HO delay is 160 ms.

The normative reference for this requirement is TS 25.123 [2] clauses 5.3b and A.5.3d.

8.3.3d.2.3 7,68 Mcps option

8.3.3d.3 Test purpose

8.3.3d.3.1 3,84 Mcps option

8.3.3d.3.2 1,28 Mcps option

To verify that the UE meets the minimum requirement.

- 8.3.3d.3.3 7,68 Mcps option
- 8.3.3d.4 Method of test
- 8.3.3d.4.1 3,84 Mcps option
- 8.3.3d.4.2 1,28 Mcps option
- 8.3.3d.4.2.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table J.2 in Annex J.

The test scenario comprises of 1 UTRAN TDD cell and 1 E-UTRAN TDD cell as given in Table 8.3.3d.1, Table 8.3.3d.2, and Table 8.3.3d.3.

The test consists of two successive time periods, with time durations of T1, T2 respectively.

During time duration T1, a RRC HANDOVER FROM UTRAN COMMAND message shall be sent to the UE with activation time "now" with a new active E-UTRA TDD cell, cell2. The end of the last TTI containing handover message is the beginning of T2 duration. At the start of time duration T2, the UE does not have any timing information of Cell 2.

Table 8.3.3d.1: General test parameters for UTRAN TDD to unknown E-UTRAN TDD handover test case

Parameter		Unit	Value	Comment
DPCH parameters active cell			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0.
PDSCH parameters			DL Reference Measurement Channel R.0 TDD	As specified in section A.3.1.1.2 in TS 36.133 [26]
PCFICH/PDCCH/PHICH parameters			DL Reference Measurement Channel R.6 TDD	As specified in section A.3.1.2.2 in TS 36.133 [26]
Initial conditions	Active cell		Cell 1	UTRA 1.28Mcps TDD cell
	Neighbour cell		Cell 2	E-UTRA TDD cell
Final conditions	Active cell		Cell 2	E-UTRA TDD cell
CP length of cell 2			Normal	
Uplink-downlink configuration			1	As specified in table 4.2-2 in 3GPP TS 36.211
Special subframe configuration			6	As specified in table 4.2-1 in 3GPP TS 36.211
PRACH configuration			53	As specified in table 5.7.1-3 in 3GPP TS 36.211
Handover activation time			now	
Access Barring Information			Not Sent	No additional delays in random access procedure.
TimeToTrigger		ms	0	
Filter coefficient			0	L3 filtering is not used
Hysteresis		dB	0	
T1		s	5	During T1, cell 2 shall be powered off, and during the off time the physical layer cell identity shall be changed.
T2		s	1	

Table 8.3.3d.2: Cell specific test parameters for UTRAN TDD to unknown E-UTRAN TDD handover test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
		0		DwPTS	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number*		Channel 1			
PCCPCH_Ec/lor	dB	-3			
DwPCH_Ec/lor	dB			0	
OCNS_Ec/lor	dB	-3			
\hat{I}_{or}/I_{oc}	dB	4	4	4	4
I_{oc}	dBm/1.28 MHz	-80			
PCCPCH RSCP	dBm	-79	-79	n.a.	
Propagation Condition		AWGN			
* Note: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.					

Table 8.3.3d.3: Cell specific test parameters for UTRAN TDD to unknown E-UTRAN TDD handover test case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2
E-UTRA RF Channel Number		2	
BWchannel	MHz	10	
OCNG Patterns defined in TS 36.521-3 D.2.1 (OP.1 TDD) and in D.2.2(OP.2 TDD)		OP.2 TDD	OP.1 TDD
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RA	dB		
SSS_RA	dB		
PCFICH_RA	dB		
PHICH_RA	dB		
PHICH_RB	dB		
PDCCH_RA	dB		
PDCCH_RB	dB		
PDSCH_RA	dB		
PDSCH_RB	dB		
OCNG_RA ^{NOTE1}	dB		
OCNG_RB ^{NOTE1}	dB		
\hat{E}_s/N_{oc}	dB	-Infinity	0
N_{oc}	dBm/15kHz	-98	
\hat{E}_s/I_{ot}	dB	-Infinity	0
RSRP	dBm/15kHz	-Infinity	-98
SCH_RP	dBm/15kHz	-Infinity	-98
Propagation Condition		AWGN	
Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.			
Note 2: RSRP levels have been derived from other parameters for information purposes. They are not settable parameters themselves.			

8.3.3d.4.2.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1 in table 8.3.3d.4.
- 2) The UE is switched on.

- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
- 4) The RF parameters for cell 2 are set up according to T1 in Table 8.3.3d.5. T1 starts.
- 5) After T1 expired, SS shall transmit a HANOVER FROM UTRAN COMMAND message with activation time “now” and indicating the traffic channel of the target E-UTRAN cell to the UE through DCCH of the serving UTRAN cell. The start of T2 is defined as the end of the last TTI, containing the HANOVER COMMAND, at that instant the SS shall switch the power setting from T1 to T2 as specified in Table 8.3.3d.4 and Table 8.3.3d.5.
- 6) The UE shall transmit a PRACH to cell 2 implying that it has switched to the E-UTRAN TDD cell. If the UE transmits the PRACH to cell2 less than 160 ms from the beginning of time period T2, then the number of successful tests is increased by one.
- 7) At the end of T2 SS shall end the call and UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 8) Repeat step 1-7 until the confidence level according to Tables G.2.3-1 in TS 36.521-3 [33] is achieved.

Specific Message Contents

All messages shall use the same content as described in the default message content in clause 9 of TS 34.108 [3] and clause 4.4, 4.6 and 4.7B.1 of TS 36.508 [28], with the following exceptions:

HANOVER FROM UTRAN COMMAND message (step 4):

Defined by TS 36.508 Table 4.7B.1-2.

RRCConnectionReconfiguration

Derivation Path: TS 36.508 [28] clause 4.6.1, Table 4.6.1-8 RRCConnectionReconfiguration			
Information Element	Value/remark	Comment	Condition
RRCConnectionReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE{			
rrcConnectionReconfiguration-r8 SEQUENCE {			
mobilityControlInfo	MobilityControlInfo-HO		HO-TO-EUTRA
dedicatedInfoNASList	Not present		
radioResourceConfigDedicated	RadioResourceConfigDedicated-HO-TO-EUTRA(n, m)		HO-TO-EUTRA(n, m)
securityConfigHO	SecurityConfigHO-DEFAULT		HO-TO-EUTRA
}			
}			
}			
}			

SecurityConfigHO-DEFAULT

Derivation Path: 36.508[28] clause 4.6.4, Table 4.6.4-1: SecurityConfigHO-DEFAULT			
Information Element	Value/remark	Comment	Condition
SecurityConfigHO-DEFAULT ::= SEQUENCE {			
handoverType CHOICE {	interRAT		
interRAT SEQUENCE {			
securityAlgorithmConfig SEQUENCE {			
cipheringAlgorithm	Set according to PIXIT parameter for default ciphering algorithm		
integrityProtAlgorithm	Set according to PIXIT parameter for default integrity protection algorithm		
}			
nas-SecurityParamToEUTRA	OCTET STRING (SIZE(6))	This field is used to activate NAS security after inter-RAT handover to E-UTRA. The content is defined in TS 24.301.	
}			
}			
}			
}			

MobilityControlInfo-HO

Derivation Path: 36.508[28] clause 4.6.5, Table 4.6.5-1: MobilityControlInfo-HO			
Information Element	Value/remark	Comment	Condition
MobilityControlInfo-HO ::= SEQUENCE {			
targetPhysCellId	Set according to specific message content		
carrierFreq	Set according to the frequency used for E-UTRA cell under test		
carrierBandwidth ::= SEQUENCE {			
dl-Bandwidth	Set according to the bandwidth used for E-UTRA cell under test		
ul-Bandwidth	Not present		
}			
additionalSpectrumEmission	1		
t304	ms1000		
newUE-Identity	SS arbitrarily selects a value between '003C'H and 'FFF2'H.		
radioResourceConfigCommon	RadioResourceConfigCommon-DEFAULT		
rach-ConfigDedicated	Not present		
}			

RadioResourceConfigCommon-DEFAULT

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-13 RadioResourceConfigCommon-DEFAULT			
Information Element	Value/remark	Comment	Condition
RadioResourceConfigCommon-DEFAULT ::= SEQUENCE {			
rach-ConfigCommon	RACH-ConfigCommon-DEFAULT		
prach-Config	PRACH-Config-DEFAULT		
pdsch-ConfigCommon	PDSCH-ConfigCommon-DEFAULT		
pusch-ConfigCommon	PUSCH-ConfigCommon-DEFAULT		
phich-Config	PHICH-Config-DEFAULT		
pucch-ConfigCommon	PUCCH-ConfigCommon-DEFAULT		
soundingRSUL-ConfigCommon	SoundingRS-UL-ConfigCommon-DEFAULT		
uplinkPowerControlCommon	UplinkPowerControlCommon-DEFAULT		
antennaInfoCommon SEQUENCE {			
antennaPortsCount	an1		
}			
p-Max	Not present		
tdd-Config	TDD-Config-DEFAULT		TDD
ul-CyclicPrefixLength	len1		
}			

PRACH-ConfCommonDEFAULT

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-7 PRACH-ConfCommonDEFAULT			
Information Element	Value/remark	Comment	Condition
PRACH-ConfigInfo SEQUENCE {			
prach-ConfigIndex	53		

RadioResourceConfigDedicated-HO-TO-EUTRA(n,m)

Derivation Path: TS 36.508 [28] clause 4.6.3, Table 4.6.3-18 RadioResourceConfigDedicated-HO-TO-EUTRA(n,m)			
Information Element	Value/remark	Comment	Condition
RadioResourceConfigDedicated-HO-TO-EUTRA(n,m) ::= SEQUENCE {			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SEQUENCE {	2 entries		
srb-ToAddMod[1]	SRB-ToAddMod-DEFAULT using condition SRB1		
srb-ToAddMod[2]	SRB-ToAddMod-DEFAULT using condition SRB2		
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF SEQUENCE {	1 entry		
drb-ToAddMod[1]	DRB-ToAddMod-DEFAULT using condition AM		
}			
drb-ToReleaseList	Not present		
mac-MainConfig CHOICE {			
explicitValue	MAC-MainConfig-RBC		
}			
sps-Config	Not present		
physicalConfigDedicated	PhysicalConfigDedicated - DEFAULT using condition RBC		
}			

MAC-MainConfig-RBC

Derivation Path: TS 36.508 [28] clause 4.8.2, Table 4.8.2.1.5-1 MAC-MainConfig-RBC			
Information Element	Value/remark	Comment	Condition
MAC-MainConfig-RBC ::= SEQUENCE {			
ul-SCH-Config SEQUENCE {			
maxHARQ-Tx	n5		
periodicBSR-Timer	sf20		
retxBSR-Timer	sf320		
ttiBundling	FALSE		
}			
drx-Config	Not present		
timeAlignmentTimerDedicated	sf750		
phr-Config CHOICE {			
setup SEQUENCE {			
periodicPHR-Timer	sf500		
prohibitPHR-Timer	sf200		
dl-PathlossChange	dB3		
}			
}			
}			

PhysicalConfigDedicated-DEFAULT

Derivation Path: TS 36.508 [28] clause 4.8.2, Table 4.8.2.1.6-1: PhysicalConfigDedicated-DEFAULT			
Information Element	Value/remark	Comment	Condition
PhysicalConfigDedicated-DEFAULT ::= SEQUENCE {			
pdsch-ConfigDedicated	Not present		HO-TO-EUTRA
pucch-ConfigDedicated	Not present		HO-TO-EUTRA
pusch-ConfigDedicated	Not present		HO-TO-EUTRA
uplinkPowerControlDedicated	Not present		HO-TO-EUTRA
soundingRS-LU-ConfigDedicated	SoundingRS-UI-ConfigDedicated-DEFAULT		HO-TO-EUTRA
schedulingRequestConfig	Not present		HO-TO-EUTRA
Note: Default values are defined in TS 36.331 [31] section 9.2.4.			

8.3.3d.4.3 7,68 Mcps option

8.3.3d.5 Test Requirments

8.3.3d.5.1 3,84 Mcps option

8.3.3d.5.2 1,28 Mcps option

Table 8.3.3d.4: Cell specific test parameters for UTRAN TDD to unknown E-UTRAN TDD handover test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
		0		DwPTS	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number*		Channel 1			
PCCPCH_Ec/Ior	dB	-3			
DwPCH_Ec/Ior	dB			0	
OCNS_Ec/Ior	dB	-3			
\hat{I}_{or}/I_{oc}	dB	4	4	4	4
I_{oc}	dBm/1.28 MHz	-80			
PCCPCH RSCP	dBm	-79	-79	n.a.	
Propagation Condition		AWGN			
* Note: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.					

Table 8.3.3d.5: Cell specific test parameters for UTRAN TDD to unknown E-UTRAN TDD handover test case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2
E-UTRA RF Channel Number		2	
BWchannel	MHz	10	
OCNG Patterns defined in TS 36.521-3 D.2.1 (OP.1 TDD) and in D.2.2(OP.2 TDD)		OP.2 TDD	OP.1 TDD
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RA	dB		
SSS_RA	dB		
PCFICH_RA	dB		
PHICH_RA	dB		
PHICH_RB	dB		
PDCCH_RA	dB		
PDCCH_RB	dB		
PDSCH_RA	dB		
PDSCH_RB	dB		
OCNG_RA ^{NOTE1}	dB		
OCNG_RB ^{NOTE1}	dB		
\hat{E}_s/N_{oc}	dB		
N_{oc}	dBm/15kHz	-98	
\hat{E}_s/I_{ot}	dB	-Infinity	0
RSRP	dBm/15kHz	-Infinity	-98
SCH_RP	dBm/15kHz	-Infinity	-98
Propagation Condition		AWGN	
Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.			
Note 2: RSRP levels have been derived from other parameters for information purposes. They are not settable parameters themselves.			

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.3d.5.3 7,68 Mcps option

8.3.3e TDD/GSM Handover: non-synchronization target cell

8.3.3e.1 Definition and applicability

8.3.3e.1.2 1,28 Mcps option

The UTRAN to GSM cell handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to the combined TDD (1,28 Mcps option) and GSM UE

8.3.3e.2 Minimum requirement

8.3.3e.2.2 1,28 Mcps option

The handover delay shall be less than 200 ms in the case where the UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.3.2 and A.5.3.

NOTE: The test requirement in this test case is expressed as:

$$T_{\text{Handover delay}} = 190 \text{ ms} + T_{\text{offset}} + T_{\text{UL}}$$

T_{offset} : Equal to 4.65 ms, GSM timing uncertainty between the time from when the UE is ready to transmit until the start of the next timeslot in GSM 26 multiframe structure

T_{UL} : Equal to 4.65 ms, the time the UE has to wait in case the next timeslot is an idle frame or a SACCH frame.

This gives a total of 199.3 ms, allow 200 ms in the test case.

8.3.3e.3 Test purpose

8.3.3e.3.2 1,28 Mcps option

To verify that the UE meets the minimum requirement.

8.3.3e.4 Method of test

8.3.3e.4.2 1,28 Mcps option

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4 for TDD conditions, and clause A1.2 of TS 51.010-1 [24] for the corresponding GSM conditions.

The test parameters are given in Table 8.3.3e.4.2-1, 8.3.3e.4.2-2 and 8.3.3e.4.2-3 below. The test consists of two successive time periods, with a time duration of T1 and T2 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

The starting point of T2 is defined as the end of the last TTI containing the HANDOVER COMMAND. In the GSM Handover command contained in this message, IE starting time shall not be included.

Cell 1 is a UTRA TDD cell and cell 2 is a GSM cell. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 2.

Table 8.3.3e.4.2-1: General test parameters for 1,28Mcps TDD/GSM handover

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	UTRA TDD cell
	Neighbour cell	Cell 2	GSM cell
Final condition	Active cell	Cell 2	GSM cell
T1	s	10	
T2	s	1	

Table 8.3.3e.4.2-2: Cell 1 (1,28Mcps)specific test parameters for TDD/GSM handover

Parameter	Unit	Cell 1			
		0		DwPTS	
DL timeslot number		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1			
PCCPCH_Ec/lor	dB	-3			
DwPCH_Ec/lor	dB			0	
OCNS_Ec/lor	dB	-3			
\hat{I}_{or}/I_{oc}	dB	5		5	
I_{oc}	dBm/1.28 MHz	-70			
Propagation Condition		AWGN			

Table 8.3.3e.4.2-3: Cell 2 (GSM)specific test parameters for TDD/GSM handover

Parameter	Unit	Cell 2	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-infinity	-75

8.3.3e.4.2.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1.
- 2) The UE is switched on
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 3) After 10 seconds, the SS shall switch the power settings for cell 2 from T1 to T2.
- 4) SS shall transmit a HANOVER FROM UTRAN COMMAND message with activation time “now” and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The start of T2 is defined as the end of the last TTI, containing the HANOVER COMMAND.
- 5) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 200 ms from the beginning of time period T2, then the number of successful tests is increased by one.
- 6) At the end of T2 the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 7) Repeat step 1-6 until the confidence level according to annex F.6.2A is achieved

Specific Message Contents

All messages shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

Note: 10.x.y.z in the IE description refers to clauses in TS 25.331 [9].

HANDOVER FROM UTRAN COMMAND message (step 4):

Information Element	Value/remark
Message Type(10.2.15)	
UE information elements -RRC transaction identifier -Integrity check info -Activation time	0 Not Present now
RB information elements -RAB information list -RAB Info	1 Not present
- RAB identity	0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	CS domain
- NAS Synchronization Indicator	Not present
- Re-establishment timer	Use T315
Other information elements -CHOICE System type -Frequency Band -CHOICE GSM message - Single GSM message	GSM Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" GSM HANDOVER COMMAND formatted and coded according to GSM specifications as BIT STRING (1..512). The first/ <i>leftmost/ most significant</i> bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Information Element (GSM)	Value/remark	Version
Protocol Discriminator	RR Management.	
Skip Indicator	0000	
Message Type	00101011	
Cell Description		
- Network Colour Code	1	
- Base station Colour Code	5	
- BCCH Carrier Number	1	
Channel Description 2		
- Channel Type and TDMA offset	TCH/F + ACCHs	
- Timeslot Number	Chosen arbitrarily by the test house, but not Zero.	
- Training Sequence Code	Chosen arbitrarily by the test house.	
- Hopping	Single RF channel.	
- ARFCN	1	
Handover Reference		
- Handover Reference Value	Chosen arbitrarily by the test house.	
Power Command and ACCESS Type		
- ATC	0	
- EPC_mode	0	REL-5
- FPC	0	R99 and REL-4 only
- EPC_FPC	0	REL-5
- Power level	Chosen arbitrarily by the test house.	
Synchronization Indication	Not present.	
Channel Mode	speech full rate or half rate version 1	
All other information elements	Not present.	

8.3.3e.5 Test requirements

8.3.3e.5.2 1,28 Mcps option

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.4 Cell Re-selection in CELL_FACH

8.3.4.1 Scenario 1: TDD/TDD cell re-selection single carrier case

8.3.4.1.1 Definition and applicability

8.3.4.1.1.1 3,84 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the 3,84 Mcps TDD UE.

8.3.4.1.1.2 1,28 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send SYNCH-UL sequence in the UpPTS for sending the CELL UPDATE with cause value "cell reselection".

The requirements and this test apply to the 1,28 Mcps TDD UE.

8.3.4.1.1.3 7,68 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the 7,68 Mcps TDD UE.

8.3.4.1.2 Minimum requirement

8.3.4.1.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than 2.5 s. The rate of correct cell re-selections observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.4.2 and A.5.4.1.

8.3.4.1.2.2 1,28 Mcps TDD option

The cell re-selection delay shall be less than 1.6s. The rate of correct cell re-selections observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.4.3 and A.5.4.2.

8.3.4.1.2.3 7,68 Mcps TDD option

The cell re-selection delay shall be less than 2.5 s. The rate of correct cell re-selections observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.4.4 and A.5.4.3.

8.3.4.1.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in CELL_FACH for the single carrier case

8.3.4.1.4 Method of test

8.3.4.1.4.1 3,84 Mcps TDD option

8.3.4.1.4.1.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.4.1.1.1, 8.3.4.1.1.2, 8.3.4.1.1.3, and 8.3.4.1.1.4.

Table 8.3.4.1.1.1: General test parameters for Cell Re-selection in CELL_FACH

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		s	1,28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.3.4.1.1.2: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	Kbps	24,4
Channel symbol rate	Ksps	12,2
Slot Format #	-	0
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Default Midamble

Table 8.3.4.1.1.3: Transport channel parameters for S-CCPCH

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	20 ms
Type of Error Protection	Convolutional Coding
Coding Rate	1/2
Rate Matching attribute	256
Size of CRC	16

Table 8.3.4.1.1.4: Cell specific test parameters for Cell Re-selection in CELL_FACH

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection		0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
FACH measurement occasion info		not sent				not sent				not sent			
I_{oc}	dBm/3,8 4 MHz	-70											
Propagation Condition		AWGN											
		Cell 4				Cell 5				Cell 6			
Timeslot		0		8		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection		0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			

FACH measurement occasion info		not sent	not sent	not sent
I_{oc}	dBm/3,8 4 MHz	-70		
Propagation Condition		AWGN		

Note: S-CCPCH shall not be located in TS0.

8.3.4.1.4.1.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclauses 7.3.3 and 7.4.2 to place the UE in CELL_FACH.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues.
- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues.
- h) Repeat steps d) to g) [TBD] times.

8.3.4.1.4.2 1,28 Mcps TDD option

8.3.4.1.4.2.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.4.1.4.2.1, 8.3.4.1.4.2.2, 8.3.4.1.4.2.3, and 8.3.4.1.4.2.4.

Table 8.3.4.1.4.2.1: General test parameters for 1,28 Mcps Cell Re-selection in CELL_FACH

Parameter		Unit	Value	Comment
initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-103	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		s	1,28	The value shall be used for all cells in the test.
T1		s	15 (initial), 15(repetition)	
T2		s	15	

Table 8.3.4.1.4.2.2: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	kbps	35.2
Channel symbol rate	ksps	17.6
Slot Format #	-	0; 2
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Common Midamble

Table 8.3.4.1.4.2.3: Transport channel parameters for S-CCPCH

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	20 ms
Type of Error Protection	Convolution Coding
Coding Rate	$\frac{1}{2}$
Rate Matching attribute	256
Size of CRC	16

Table 8.3.4.1.4.2.4: Cell specific test parameters for 1,28 Mcps Cell Re-selection in CELL_FACH

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		DWPTS		0		DWPTS		0		DWPTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRAN Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/Ior	dB			0	0			0	0			0	0
OCNS_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	10	7	10	7	7	10	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-63	-66			-66	-63			-74	-74		
Qoffset _{1s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst _{1s}	dB	0				0				0			
Treselection		0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
FACH measurement occasion info		not sent				not sent				not sent			
		Cell 4				Cell 5				Cell 6			
		0		DWPTS		0		DWPTS		0		DWPTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRAN Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/Ior	dB			0	0			0	0			0	0
OCNS_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset _{1s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst _{1s}	dB	0				0				0			
Treselection		0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
FACH measurement occasion info		not sent				not sent				not sent			
I_{oc}	dBm/1,2 8 MHz	-70											
Propagation Condition		AWGN											

NOTE: S-CCPCH is located in an other downlink TS than TS0. Void.

8.3.4.1.4.2.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.

- b) The UE is switched on.
- c) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclauses 7.3.3 and 7.4.2 to place the UE in CELL_FACH.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for SYNCH-UL sequence in the UpPTS for sending CELL UPDATE message with cause value "cell reselection" from the UE. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues.
- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for SYNCH-UL sequence in the UpPTS for sending CELL UPDATE message with cause value "cell reselection" from the UE. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues.
- h) After another 15 s, the UE shall be switched off.
- i) Repeat step a) to h) until the confidence level according to annex F.6.2 is achieved.

8.3.4.1.4.3 7,68 Mcps TDD option

8.3.4.1.4.3.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.4.1.4.3.1, 8.3.4.1.4.3.2, 8.3.4.1.4.3.3 and 8.3.4.1.4.3.4.

Table 8.3.4.1.4.3.1: General test parameters for Cell Re-selection in CELL_FACH

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	
	Neighbour cells	Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell	Cell2	
HCS		Not used	
UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value	-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}	s	1,28	The value shall be used for all cells in the test.
T1	s	15 (initial), 5 (repetition)	
T2	s	5	

Table 8.3.4.1.4.3.2: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	Kbps	24,4
Channel symbol rate	Ksps	12,2
Slot Format #	-	0
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Default Midamble

Table 8.3.4.1.4.3.3: Transport channel parameters for S-CCPCH

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	20 ms
Type of Error Protection	Convolutional Coding
Coding Rate	$\frac{1}{2}$
Rate Matching attribute	256
Size of CRC	16

Table 8.3.4.1.4.3.4: Cell specific test parameters for Cell Re-selection in CELL_FACH

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_offset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3

OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset _{1s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst _{1s}	dB	0				0				0			
Treselection		0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
FACH measurement occasion info		not sent				not sent				not sent			
I_{oc}	dBm/7,68 MHz	-70											
Propagation Condition		AWGN											
		Cell 4				Cell 5				Cell 6			
Timeslot		0		8		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset _{1s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst _{1s}	dB	0				0				0			
Treselection		0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
FACH measurement occasion info		not sent				not sent				not sent			
I_{oc}	dBm/7,68 MHz	-70											
Propagation Condition		AWGN											

Note: S-CCPCH shall not be located in TS0.

8.3.4.1.4.3.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclauses 7.3.3 and 7.4.2 to place the UE in CELL_FACH.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues.
- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues.
- h) Repeat steps d) to g) until the confidence level according to annex F.6.2 is achieved..

8.3.4.1.5 Test Requirements

8.3.4.1.5.1 3,84 Mcps TDD option

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 2.5 s.
- 3) In step g), the UE shall respond on cell 1 within 2.5 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.4.1.5.2 1,28 Mcps TDD option

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 1.6 s.
- 3) In step g), the UE shall respond on cell 1 within 1.6 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.4.1.5.3 7,68 Mcps TDD option

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 2.5 s.
- 3) In step g), the UE shall respond on cell 1 within 2.5 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than 90% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4. 8.3.4.2 Scenario 2: TDD/TDD cell re-selection multi carrier case.

8.3.4.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

8.3.4.2.1 Definition and applicability

8.3.4.2.1.1 3,84 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the 3,84 Mcps TDD UE.

8.3.4.2.1.2 1,28 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send SYNCH-UL sequence in the UpPTS for sending the CELL UPDATE with cause value "cell reselection".

The requirements and this test apply to the 1,28 Mcps TDD UE.

8.3.4.2.1.3 7,68 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the 7,68 Mcps TDD UE.

8.3.4.2.2 Minimum requirement

8.3.4.2.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than 3 s. The rate of correct cell re-selections observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.4.2 and A.5.4.2.

8.3.4.2.2.2 1,28 Mcps TDD option

The cell re-selection delay shall be less than 2 s. The rate of correct cell re-selections observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.4.3 and A.5.4.2.2.

8.3.4.2.2.3 7,68 Mcps TDD option

The cell re-selection delay shall be less than 3 s. The rate of correct cell re-selections observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.4.4 and A.5.4.3.2.

8.3.4.2.3 Test purpose

This test verifies that the UE meets the requirement for the cell re-selection delay in CELL_FACH for the multi carrier case.

8.3.4.2.4 Method of test

8.3.4.2.4.1 3,84 Mcps TDD option

8.3.4.2.4.1.1 Initial conditions

This scenario contains 6 cells and 2 carrier frequencies. The test parameters are given in Tables 8.3.4.2.1.1, 8.3.4.2.1.2, 8.3.4.2.1.3, and 8.3.4.2.1.4.

Table 8.3.4.2.1.1: General test parameters for Cell Re-selection in CELL_FACH

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	
	Neighbour cells	Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell	Cell2	
HCS		Not used	
UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value	-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}	s	1,28	The value shall be used for all cells in the test.
T1	s	15	
T2	s	15	

Table 8.3.4.2.1.2: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	Kbps	24,4
Channel symbol rate	Ksps	12,2
Slot Format #	-	0
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Default Midamble

Table 8.3.4.2.1.3: Transport channel parameters for S-CCPCH

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	20 ms
Type of Error Protection	Convolutional Coding
Coding Rate	1/2
Rate Matching attribute	256
Size of CRC	16

Table 8.3.4.2.1.4: Cell specific test parameters for Cell Re-selection in CELL_FACH

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	9	3	9	3	3	9	3	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-70			-70	-64			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection		0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
FACH measurement occasion info		not sent				not sent				not sent			
Inter-frequency TDD measurement indicator		TRUE				TRUE				TRUE			
I_{oc}	dBm/3,8 4 MHz	-70											
Propagation Condition		AWGN											
		Cell 4				Cell 5				Cell 6			
Timeslot		0		8		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			

Treselection		0	0	0
Sintrasearch	dB	not sent	not sent	not sent
Sintersearch	dB	not sent	not sent	not sent
FACH measurement occasion info		not sent	not sent	not sent
Inter-frequency TDD measurement indicator		TRUE	TRUE	TRUE
I_{oc}	dBm/3,8 4 MHz	-70		
Propagation Condition		AWGN		

NOTE: S-CCPCH shall not be located in TS0.

8.3.4.2.4.1.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclauses 7.3.3 and 7.4.2 to place the UE in CELL_FACH. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.
- f) After another 15 s, the parameters are changed as described for T1. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues.
- g) The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.
- h) Repeat steps d) to g) [TBD] times.

8.3.4.2.4.2 1,28 Mcps TDD option

8.3.4.2.4.2.1 Initial conditions

This scenario contains 6 cells and 2 carrier frequencies. The test parameters are given in Tables 8.3.4.2.4.2.1, 8.3.4.2.4.2.2, 8.3.4.2.4.2.3, and 8.3.4.2.4.2.4.

Table 8.3.4.2.4.2.1: General test parameters for 1,28Mcps Cell Re-selection in CELL_FACH

Parameter		Unit	Value	Comment
initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		DBm	21	The value shall be used for all cells in the test.
Qrxlevmin		DBm	-103	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		S	1,28	The value shall be used for all cells in the test.
T1		S	15(initial), 15 (repetition)	
T2		S	15	

Table 8.3.4.2.4.2 Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	kbps	35.2
Channel symbol rate	ksps	17.6
Slot Format #	-	0; 2
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Common Midamble

Table 8.3.4.2.4.2.3 Transport channel parameters for S-CCPCH

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	20 ms
Type of Error Protection	Convolution Coding
Coding Rate	$\frac{1}{2}$
Rate Matching attribute	256
Size of CRC	16

Table 8.3.4.2.4.2.4: Cell specific test parameters for 1,28Mcps Cell re-selection in CELL_FACH state

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		DWPTS		0		DWPTS		0		DWPTS	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	10	4	10	4	4	10	4	10	-1	-1	-1	-1
PCCPCH RSCP	dBm	-63	-69			-69	-63			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2:C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3:C6:0			
Qhyst1 _s	dBm	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
FACH measurement occasion info		not sent				not sent				not sent			
FACH measurement occasion cycle length		4				4				4			
Inter-frequency TDD measurement indicator		TRUE				TRUE				TRUE			
Inter-frequency FDD measurement indicator		FALSE				FALSE				FALSE			
		Cell 4				Cell 5				Cell 6			
Timeslot		0		DWPTS		0		DWPTS		0		DWPTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4:C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5:C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6:C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
FACH measurement occasion info		not sent				not sent				not sent			
FACH measurement occasion cycle length		4				4				4			
Inter-frequency TDD measurement indicator		TRUE				TRUE				TRUE			
Inter-frequency FDD measurement indicator		FALSE				FALSE				FALSE			
I_{oc}	dBm/ 1,28 MHz	-70											
Propagation Condition		AWGN											

NOTE: S-CCPCH is located in an other downlink TS than TS0.

8.3.4.2.4.2.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.

- b) The UE is switched on.
- c) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclauses 7.3.3 7.4.2 to place the UE in CELL_FACH.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for SYNCH-UL sequence in the UpPTS for sending CELL UPDATE message with cause value "cell reselection" from the UE. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues
- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for SYNCH-UL sequence in the UpPTS for sending CELL UPDATE message with cause value "cell reselection" from the UE. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues.
- h) After another 15 s, the UE shall be switched off.
- i) Repeat steps a) to h) until the confidence level according to annex F.6.2 is achieved.

8.3.4.2.4.3 7,68 Mcps TDD option

8.3.4.2.4.3.1 Initial conditions

This scenario contains 6 cells and 2 carrier frequencies. The test parameters are given in Tables 8.3.4.2.4.3.1, 8.3.4.2.4.3.2, 8.3.4.2.4.3.3, and 8.3.4.2.4.3.4.

Table 8.3.4.2.4.3.1: General test parameters for Cell Re-selection in CELL_FACH

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	
	Neighbour cells	Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell	Cell2	
HCS		Not used	
UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value	-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}	s	1,28	The value shall be used for all cells in the test.
T1	s	15 (initial), 5 (repetition)	
T2	s	5	

Table 8.3.4.2.4.3.2: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	Kbps	24,4
Channel symbol rate	Ksps	12,2
Slot Format #	-	0
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Default Midamble

Table 8.3.4.2.4.3.3: Transport channel parameters for S-CCPCH

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	20 ms
Type of Error Protection	Convolutional Coding
Coding Rate	$\frac{1}{2}$
Rate Matching attribute	256
Size of CRC	16

Table 8.3.4.2.4.3.4: Cell specific test parameters for Cell Re-selection in CELL_FACH

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_offset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	9	3	9	3	3	9	3	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-70			-70	-64			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection		0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
FACH measurement occasion info		not sent				not sent				not sent			
Inter-frequency TDD measurement indicator		TRUE				TRUE				TRUE			
I_{oc}	dBm/ 7,68 MHz	-70											
Propagation Condition		AWGN											
		Cell 4				Cell 5				Cell 6			
Timeslot		0		8		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_offset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		

Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0	C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0	C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0
Qhyst1 _s	dB	0	0	0
Treselection		0	0	0
Sintrasearch	dB	not sent	not sent	not sent
Sintersearch	dB	not sent	not sent	not sent
FACH measurement occasion info		not sent	not sent	not sent
Inter-frequency TDD measurement indicator		TRUE	TRUE	TRUE
I_{oc}	dBm/7,68 MHz	-70		
Propagation Condition		AWGN		

NOTE: S-CCPCH shall not be located in TS0.

8.3.4.2.4.3.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclauses 7.3.3 and 7.4.2 to place the UE in CELL_FACH. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.
- f) After another 15 s, the parameters are changed as described for T1. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues.
- g) The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.
- h) Repeat steps d) to g) until the confidence level according to annex F.6.2 is achieved.

8.3.4.2.5 Test Requirements

8.3.4.2.5.1 3,84 Mcps TDD option

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 1 within 3 s.
- 3) In step g), the UE shall respond on cell 2 within 3 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.4.2.5.2 1,28 Mcps TDD option

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 1 within 2 s.
- 3) In step g), the UE shall respond on cell 2 within 2 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.4.2.5.3 7,68 Mcps TDD option

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 1 within 3 s.
- 3) In step g), the UE shall respond on cell 2 within 3 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than 90% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.4.3 Scenario 3: TDD/GSM cell re-selection

8.3.4.3.1 Definition and applicability

8.3.4.3.1.1 3,84 Mcps TDD option

Void

8.3.4.3.1.2 1,28 Mcps TDD option

The cell re-selection delay is defined as the time from when the cell quality levels change to the moment when this change makes the UE reselect a better ranked cell, and starts to send CHANNEL REQUEST message to perform a Location update to the new cell.

This test is for the case where the UE camps on a 1,28 Mcps TDD cell and reselects to a GSM cell.

The requirements and this test apply to UEs supporting both 1,28 Mcps TDD and GSM.

8.3.4.3.1.3 7,68 Mcps TDD option

Void

8.3.4.3.2 Minimum requirement

8.3.4.3.2.1 3,84 Mcps TDD option

Void

8.3.4.3.2.2 1,28 Mcps TDD option

The cell re-selection delay shall be less than $5530\text{ms} + T_{\text{BCCH}}$.

NOTE: The cell re-selection delay can be expressed as:

$$T_{\text{reselection GSM}} = T_{\text{identify GSM}} + T_{\text{measurement GSM}} + 40 + T_{\text{BCCH}} + T_{\text{RA}} \text{ (ms)}$$

where

T_{BCCH} : The maximum time allowed to read BCCH data from GSM cell, 1.9s.

T_{RA} : The additional delay caused by the random access procedure, 10ms.

$T_{\text{identify GSM}}$ Specified in TS 25.123, here it is 5000ms

$T_{\text{measurement GSM}}$: 480ms

This gives a total of 7430ms, thus allow 7.5s.

8.3.4.3.2.3 7,68 Mcps TDD option

Void

8.3.4.3.3 Test purpose

This test verifies that the UE meets the minimum requirement for the inter-RAT cell re-selection delay in CELL_FACH state.

8.3.4.3.4 Method of test

8.3.4.3.4.1 3,84 Mcps TDD option

Void

8.3.4.3.4.2 1,28 Mcps TDD option

8.3.4.3.4.2.1 Initial conditions

This scenario implies the presence of one 1.28 Mcps TDD serving cell, and one GSM cell to be re-selected. Test parameters are given in Tables 8.3.4.3.4.1, 8.3.4.3.4.2, 8.3.4.3.4.3, 8.3.4.3.4.4, 8.3.4.3.4.5.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. Cell 1 and cell 2 shall belong to different location areas.

Table 8.3.4.3.4.1: General test parameters for 1,28 Mcps Cell Re-selection in CELL_FACH

	Parameter	Unit	Value	Comment
initial condition	Active cell		Cell1	
	Neighbour cells		Cell2	
final condition	Active cell		Cell2	
HCS			Not used	
	UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
	Qrxlevmin	dBm	-103	The value shall be used for all cells in the test.
	Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T _{SI}	s	1,28	The value shall be used for all cells in the test.
	T1	s	15	
	T2	s	15	

Table 8.3.4.3.4.2: Physical channel parameters for S-CCPCH

Parameter	Unit	Level
Channel bit rate	kbps	35.2
Channel symbol rate	ksps	17.6
Slot Format #	-	0; 2
Frame allocation	-	Continuous frame allocation
Midamble allocation	-	Common Midamble

Table 8.3.4.3.4.3: Transport channel parameters for FACH

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	20 ms
Type of Error Protection	Convolution Coding
Coding Rate	$\frac{1}{2}$
Rate Matching attribute	256
Size of CRC	16

Table 8.3.4.3.4.4: Cell specific test parameters for 1,28 Mcps Cell(Cell 1) Re-selection in CELL_FACH

Parameter	Unit	Cell 1 (UTRA)			
		0		DwPTS	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3	-3		
DwPCH_Ec/lor	dB			0	0
OCNS_Ec/lor	dB	-3	-3		
\hat{I}_{or}/I_{oc}	dB	6	6	6	6
I_{oc}	dBm/1,28 MHz	-80			
PCCPCH RSCP	dBm	-77			
Propagation Condition		AWGN		AWGN	
Treselection	s	0			
Ssearch _{RAT}	dB	Not sent			
Qrxlevmin	dBm	-103			
Qoffset1 _{s,n}	dB	C1, C2: 0			
Qhyst1 _s	dB	0			

Table 8.3.4.3.4.5: Cell specific test parameters for Cell 2(GSM) re-selection in CELL_FACH state

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90	-70
RXLEV_ACCESS_MIN	dBm	-103	
MS_TXPWR_MAX_CCH	dBm	33	
Qsearch_I	-	always	

8.3.4.2.4.2.2 Procedure

The SS activates cell 1-2 with T1 defined parameters;

- a) The UE switched on.
- b) A RRC connection is set up according the generic set-up procedure specified in TS 34.108[3] clause 7.3.3 and 7.4.2 to place UE in CELL_FACH state;
- c) After 15s the parameters changed to those defined for T2;
- d) If the UE responds on cell 2 for the CHANNEL REQUEST within 7.5s, the success is recorded;
- e) If the UE doesn't respond on cell 2 for the CHANNEL REQUEST within 7.5s, a failure is recorded. The SS shall then wait for a total of 10s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a);
- f) After 15s from the beginning of T2, the UE shall be switched off;

Repeat step d) to g) until the confidence level according to annex F.6.2 is achieved.

8.3.4.3.4.3 7,68 Mcps TDD option

Void

8.3.4.3.5 Test Requirements

8.3.4.3.5.1 3,84 Mcps TDD option

Void

8.3.4.3.5.2 1,28 Mcps TDD option

In step d), the UE shall respond on cell 2 within 7.5 s.

For the test to pass, the total number of fulfilled test requirement shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.4.3.5.3 7,68 Mcps TDD option

Void

8.3.4A Cell Re-selection in Enhanced CELL_FACH

8.3.4A.1 Scenario 1: Cell Re-selection to Intra-Frequency TDD cell

8.3.4A.1.1 Definition and applicability

8.3.4A.1.1.1 3,84 Mcps TDD option

Void

8.3.4A.1.1.2 1,28 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send SYNCH-UL sequence in the UpPTS for sending the CELL UPDATE with cause value "cell reselection".

The requirements and this test apply to the 1,28 Mcps TDD UE of release 8 and later supporting Enhanced CELL_FACH.

8.3.4A.1.1.3 7,68 Mcps TDD option

Void

8.3.4A.1.2 Minimum requirement

8.3.4A.1.2.1 3,84 Mcps TDD option

Void

8.3.4A.1.2.2 1,28 Mcps TDD option

The cell re-selection delay shall be less than 1.6s.

The rate of correct cell re-selections observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.4.3 and A.5.4A.2.1.

8.3.4A.1.2.3 7,68 Mcps TDD option

Void

8.3.4A.1.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay to intra-frequency TDD cell in Enhanced CELL_FACH.

8.3.4A.1.4 Method of test

8.3.4A.1.4.1 3,84 Mcps TDD option

Void

8.3.4A.1.4.2 1,28 Mcps TDD option

8.3.4A.1.4.2.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.4A.1.4.2.1 and 8.3.4A.1.4.2.2.

Table 8.3.4A.1.4.2.1: General test parameters for 1,28 Mcps Cell Re-selection to intra-frequency TDD cell in Enhanced CELL_FACH

	Parameter	Unit	Value	Comment
initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
final condition	Active cell		Cell2	
	HCS		Not used	
	UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
	Qrxlevmin	dBm	-103	The value shall be used for all cells in the test.
	Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T _{SI}	s	1,28	The value shall be used for all cells in the test.
	T1	s	15 (initial), 5 (repetition)	
	T2	s	5	

Table 8.3.4A.1.4.2.2: Cell specific test parameters for 1,28 Mcps Cell Re-selection to intra-frequency TDD cell in Enhanced CELL_FACH

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		DWPTS		0		DWPTS		0		DWPTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	10	7	10	7	7	10	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-63	-66			-66	-63			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0				C2, C1: 0; C2, C3:0; C2,C4:0				C3, C1: 0; C3, C2:0; C3,C4:0			
Qhyst1 _s	dB	0				0				0			
Treselection		0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
FACH measurement occasion info		not sent				not sent				not sent			
		Cell 4				Cell 5				Cell 6			
		0		DWPTS		0		DWPTS		0		DWPTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection		0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
FACH measurement occasion info		not sent				not sent				not sent			
I_{oc}	dBm/1,2 8 MHz	-70											
Propagation Condition		AWGN											

NOTE: S-CCPCH is located in an other downlink TS than TS0..

8.3.4A.1.4.2.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause s 7.3.5 to place the UE in CELL_FACH.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for SYNCH-UL sequence in the UpPTS for sending CELL UPDATE message with cause value "cell reselection" from the UE. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues.
- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for SYNCH-UL sequence in the UpPTS for sending CELL UPDATE message with cause value "cell reselection" from the UE. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues.
- h) Repeat steps until the confidence level according to annex F.6.2 is achieved.

8.3.4A.1.4.3 7,68 Mcps TDD option

Void

8.3.4A.1.5 Test Requirements

8.3.4A.1.5.1 3,84 Mcps TDD option

Void

8.3.4A.1.5.2 1,28 Mcps TDD option

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 1.6 s.
- 3) In step g), the UE shall respond on cell 1 within 1.6 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.4A.1.5.3 7,68 Mcps TDD option

Void

8.3.4A.1 Scenario 2: Cell Re-selection to Inter-Frequency TDD cell

8.3.4A.2.1 Definition and applicability

8.3.4A.2.1.1 3,84 Mcps TDD option

Void

8.3.4A.2.1.2 1,28 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell , and starts to send SYNCH-UL sequence in the UpPTS for sending the CELL UPDATE with cause value "cell reselection".

The requirements and this test apply to the 1,28 Mcps TDD UE.

8.3.4A.2.1.3 7,68 Mcps TDD option

Void

8.3.4A.2.2 Minimum requirement

8.3.4A.2.2.1 3,84 Mcps TDD option

Void

8.3.4A.2.2.2 1,28 Mcps TDD option

The cell re-selection delay shall be less than 2 s. The rate of correct cell re-selections observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.4.3 and A.5.4A.2.2.

8.3.4A.2.2.3 7,68 Mcps TDD option

Void

8.3.4A.2.3 Test purpose

This test verifies that the UE meets the requirement for the cell re-selection delay to inter-frequency TDD cell in Enhanced CELL_FACH.

- 8.3.4A.2.4 Method of test
- 8.3.4A.2.4.1 3,84 Mcps TDD option
- Void
- 8.3.4A.2.4.2 1,28 Mcps TDD option
- 8.3.4A.2.4.2.1 Initial conditions

This scenario contains 6 cells and 2 carrier frequencies. The test parameters are given in Tables 8.3.4A.2.4.2.1 and 8.3.4A.2.4.2.2.

Table 8.3.4A.2.4.2.1: General test parameters for 1,28Mcps Cell Re-selection to inter-frequency TDD cell in Enhanced CELL_FACH

Parameter		Unit	Value	Comment
initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		DBm	21	The value shall be used for all cells in the test.
Qrxlevmin		DBm	-103	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		S	1,28	The value shall be used for all cells in the test.
T1		S	15(initial), 5 (repetition)	
T2		S	5	

Table 8.3.4A.2.4.2.2: Cell specific test parameters for 1,28Mcps Cell re-selection to inter-frequency TDD cell in Enhanced CELL_FACH state

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		DWPTS		0		DWPTS		0		DWPTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	10	4	10	4	4	10	4	10	-1	-1	-1	-1
PCCPCH RSCP	dBm	-63	-69			-69	-63			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0				C2, C1: 0; C2, C3:0; C2,C4:0				C3, C1: 0; C3, C2:0; C3,C4:0			
Qhyst1 _s	dBm	C1, C5:0; C1,C6:0				C2, C5: 0; C2:C6:0				C3, C5: 0; C3:C6:0			
Qhyst1 _s	dBm	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
FACH measurement occasion info		not sent				not sent				not sent			
FACH measurement occasion cycle length		4				4				4			
Inter-frequency TDD measurement indicator		TRUE				TRUE				TRUE			
Inter-frequency FDD measurement indicator		FALSE				FALSE				FALSE			
		Cell 4				Cell 5				Cell 6			
Timeslot		0		DWPTS		0		DWPTS		0		DWPTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4:C6:0				C5, C1: 0; C5, C2:0; C5,C3:0				C6, C1: 0; C6, C2:0; C6,C3:0			
Qhyst1 _s	dB	C5, C4:0; C5:C6:0				C6, C4:0; C6:C5:0							
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			

Sintersearch	dB	not sent	not sent	not sent
FACH measurement occasion info		not sent	not sent	not sent
FACH measurement occasion cycle length		4	4	4
Inter-frequency TDD measurement indicator		TRUE	TRUE	TRUE
Inter-frequency FDD measurement indicator		FALSE	FALSE	FALSE
I_{oc}	dBm/1,28 MHz	-70		
Propagation Condition		AWGN		

NOTE: S-CCPCH is located in an other downlink TS than TS0.

8.3.4A.2.4.2.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclauses 7.3.5 to place the UE in CELL_FACH.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for SYNCH-UL sequence in the UpPTS for sending CELL UPDATE message with cause value "cell reselection" from the UE. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues
- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for SYNCH-UL sequence in the UpPTS for sending CELL UPDATE message with cause value "cell reselection" from the UE. If the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues
- h) Repeat steps d) to g) until the confidence level according to annex F.6.2 is achieved.

8.3.4A.2.4.3 7,68 Mcps TDD option

Void

8.3.4A.2.5 Test Requirements

8.3.4A.2.5.1 3,84 Mcps TDD option

Void

8.3.4A.2.5.2 1,28 Mcps TDD option

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 1 within 1.9 s.
- 3) In step g), the UE shall respond on cell 2 within 1.9 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.4A.2.5.3 7,68 Mcps TDD option

Void

8.3.5 Cell Re-selection in CELL_PCH

8.3.5.1 Scenario 1: TDD/TDD cell re-selection single carrier case

8.3.5.1.1 Definition and applicability

8.3.5.1.1.1 3,84 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the 3,84 Mcps TDD UE.

8.3.5.1.1.2 1,28 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send SYNCH-UL sequence in the UpPTS for sending the CELL UPDATE with cause value "cell reselection".

The requirements and this test apply to the 1,28 Mcps TDD UE.

8.3.5.1.1.3 7,68 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the 7,68 Mcps TDD UE.

8.3.5.1.2 Minimum requirement

8.3.5.1.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateTDD}} + T_{\text{SI}}$, where:

$T_{\text{evaluateTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to TS 25.123 [2] table 4.1 in clause 4.2.2.7.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.
This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.5 and A.5.5.1.

8.3.5.1.2.2 1,28 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateNTDD}} + T_{SI}$, where:

$T_{\text{evaluateNTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to TS 25.123 [2] table 4.1a in clause 4.2.2.

T_{SI} Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allowing 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.5.2.2 and A.5.5.1.

8.3.5.1.2.3 7,68 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateTDD}} + T_{SI}$, where:

$T_{\text{evaluateTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to TS 25.123 [2] table 4.1B in clause 4.2.2.7.3.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.5.2.3 and A.5.5.1.

8.3.5.1.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in CELL_PCH for the single carrier case

8.3.5.1.4 Method of test

8.3.5.1.4.1 3,84 Mcps TDD option

8.3.5.1.4.1.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.5.1.1.1, and 8.3.5.1.1.2.

Table 8.3.5.1.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		s	1,28	The value shall be used for all cells in the test.
DRX cycle length		s	1,28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.3.5.1.1.2: Cell re-selection single carrier multi-cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset _{1s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst _{1s}	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Timeslot		Cell 4				Cell 5				Cell 6			
		0		8		0		8		0		8	
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset _{1s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst _{1s}	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/3,8 4 MHz	-70											
Propagation Condition		AWGN											

8.3.5.1.4.1.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL_PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g).
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g).
- g) After a total of 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step j).
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).
- j) Repeat steps d) to i) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	7

8.3.5.1.4.2 1,28 Mcps TDD option

8.3.5.1.4.2.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.5.1.4.2.1 and 8.3.5.1.4.2.2.

Table 8.3.5.1.4.2.1: General test parameters for 1,28 Mcps Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-103	The value shall be used for all cells in the test.
Access Service Class (ASC#0) – Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		s	1,28	The value shall be used for all cells in the test.
DRX cycle length		s	1,28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.3.5.1.4.2.2: 1,28Mcps Cell re-selection single carrier multi-cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		DWPTS		0		DWPTS		0		DWPTS	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	10	7	10	7	7	10	7	10	-1	-1	-1	-1
PCCPCH RSCP	dBm	-63	-66			-66	-63			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Timeslot		Cell 4				Cell 5				Cell 6			
		0		DWPTS		0		DWPTS		0		DWPTS	
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/1,2 8 MHz	-70											
Propagation Condition		AWGN											

8.3.5.1.4.2.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL_PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 2 with a SYNCH-UL sequence in the UpPTS for sending CELL UPDATE message cause "cell reselection" within 8s, then a success is recorded. After receiving the CELL UPDATE message cause "cell reselection", the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g).
- f) If the UE has failed to respond with a SYNCH-UL sequence in the UpPTS within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise after receiving the CELL UPDATE message cause "cell reselection", the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g).
- g) After a total of 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a SYNCH-UL sequence in the UpPTS for sending CELL UPDATE message cause "cell reselection" within 8s, then a success is recorded and the procedure moves to step j).
- i) If the UE has failed to respond with SYNCH-UL sequence in the UpPTS within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise after receiving the CELL UPDATE message cause "cell reselection", the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).
- j) After another 15 s, the UE shall be switched off.
- k) Repeat steps a) to j) until the confidence level according to annex F.6.2 is achieved

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system information blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), so allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	7

8.3.5.1.4.3 7,68 Mcps TDD option

8.3.5.1.4.3.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.5.1.4.3.1, and 8.3.5.1.4.3.2.

Table 8.3.5.1.4.3.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.3.5.1.4.3.2: Cell re-selection single carrier multi-cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
Timeslot Number		0		8		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset _{1s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst _{1s}	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
		Cell 4				Cell 5				Cell 6			
Timeslot		0		8		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset _{1s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst _{1s}	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/7,6 8 MHz	-70											
Propagation Condition		AWGN											

8.3.5.1.4.3.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL_PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g).
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g).
- g) After a total of 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step j).
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).
- j) Repeat steps d) to i) until the confidence level according to annex F.6.2 is achieved..

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	7

8.3.5.1.5 Test Requirements

8.3.5.1.5.1 3,84 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.1.5.2 1,28 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.1.5.3 7,68 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

8.3.5.2.1 Definition and applicability

8.3.5.2.1.1 3,84 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the 3,84 Mcps option TDD UE.

8.3.5.2.1.2 1,28 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send SYNCH-UL sequence in the UpPTS for sending the CELL UPDATE with cause value "cell reselection".

The requirements and this test apply to the 1,28 Mcps TDD UE.

8.3.5.2.1.3 7,68 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the 7,68 Mcps TDD UE.

8.3.5.2.2 Minimum requirement

8.3.5.2.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateTDD}} + T_{\text{SI}}$, where:

$T_{\text{evaluateTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to TS 25.123 [2] table 4.1 in clause 4.2.2.7.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.5 and A.5.5.2.

8.3.5.2.2.2 1,28 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateTDD}} + T_{\text{SI}}$, where:

- $T_{\text{evaluateTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to TS 25.123 [2] table 4.1a in clause 4.2.2.
- T_{SI} Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.
- This gives a total of 7.68 s, allowing 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.5.2 and A.5.5.2.2.

8.3.5.2.2.3 7,68 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateTDD}} + T_{\text{SI}}$, where:

- $T_{\text{evaluateTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to TS 25.123 [2] table 4.1B in clause 4.2.2.7.3.
- T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.
- This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.5.2 and A.5.5.2.

8.3.5.2.3 Test purpose

This test verifies that the UE meets the requirement for the cell re-selection delay in CELL_PCH for the multi carrier case.

8.3.5.2.4 Method of test

8.3.5.2.4.1 3,84 Mcps TDD option

8.3.5.2.4.1.1 Initial conditions

This scenario contains 6 cells and 2 carrier frequencies. The test parameters are given in Tables 8.3.5.2.1.1 and 8.3.5.2.1.2.

Table 8.3.5.2.1.1: General test parameters for Cell Re-selection in Multi carrier case

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	
	Neighbour cells	Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell	Cell2	
HCS		Not used	
UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}	s	1,28	The value shall be used for all cells in the test.
DRX cycle length	s	1,28	The value shall be used for all cells in the test.
T1	s	30	
T2	s	15	

Table 8.3.5.2.1.2: Cell re-selection multi carrier multi cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2,C4:0C2, C5:0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
Timeslot		Cell 4				Cell 5				Cell 6			
		0		8		0		8		0		8	
UTRA RF Channel Number		Channel 1				Channel 2				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/3,8 4 MHz	-70											
Propagation Condition		AWGN											

8.3.5.2.4.1.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL_PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g).
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g).
- g) After a total of 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step j).
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).
- j) Repeat steps d) to i) [TBD] times.

NOTE 1: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

NOTE 2: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	7

8.3.5.2.4.2 1,28 Mcps TDD option

8.3.5.2.4.2.1 Initial conditions

This scenario contains 6 cells and 2 carrier frequencies. The test parameters are given in Tables 8.3.5.2.4.2.1 and 8.3.5.2.4.2.2.

Table 8.3.5.2.4.2.1: General test parameters for 1,28Mcps Cell Re-selection in Multi carrier case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-103	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		s	1,28	The value shall be used for all cells in the test.
DRX cycle length		s	1,28	The value shall be used for all cells in the test.
T1		s	30	
T2		s	15	

Table 8.3.5.2.4.2.2: Cell re-selection 1,28 Mcps multi carrier multi cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		DWPTS		0		DWPTS		0		DWPTS	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	10	4	10	4	4	10	4	10	-1	-1	-1	-1
PCCPCH RSCP	dBm	-63	-69			-69	-63			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2,C4:0C2, C5:0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
		Cell 4				Cell 5				Cell 6			
Timeslot		0		DWPTS		0		DWPTS		0		DWPTS	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/ 1,28 MHz	-70											
Propagation Condition		AWGN											

8.3.5.2.4.2.2 Procedure

- The SS activates cell 1-6 with T1 defined parameters.
- The UE is switched on.
- A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL_PCH state on Cell 1 and then the SS waits for this process to complete.
- After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- If the UE responds on Cell 2 with a SYNCH-UL sequence in the UpPTS for sending CELL UPDATE message cause "cell reselection" within 8s, then a success is recorded. After receiving the CELL UPDATE message cause "cell reselection", the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g).
- If the UE has failed to respond with SYNCH-UL sequence in the UpPTS within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise after receiving the CELL UPDATE message cause "cell reselection", the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g).

- g) After a total of 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a SYNCH-UL sequence in the UpPTS for sending CELL UPDATE message cause "cell reselection" within 8s, then a success is recorded and the procedure moves to step j).
- i) If the UE has failed to respond with SYNCH-UL sequence in the UpPTS within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise after receiving the CELL UPDATE message cause "cell reselection", the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).
- j) After another 15 s, the UE shall be switched off.
- k) Repeat steps a) to j) until the confidence level according to annex F.6.2 is achieved

NOTE 1: T1 should initially be 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

NOTE 2: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	7

8.3.5.2.4.3 7,68 Mcps TDD option

8.3.5.2.4.3.1 Initial conditions

This scenario contains 6 cells and 2 carrier frequencies. The test parameters are given in Tables 8.3.5.2.4.3.1 and 8.3.5.2.4.3.2.

Table 8.3.5.2.4.3.1: General test parameters for Cell Re-selection in Multi carrier case

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	
	Neighbour cells	Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell	Cell2	
HCS		Not used	
UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}	s	1.28	The value shall be used for all cells in the test.
DRX cycle length	s	1.28	The value shall be used for all cells in the test.
T1	s	30	
T2	s	15	

Table 8.3.5.2.4.3.2: Cell re-selection multi carrier multi cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_offset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5:0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
Timeslot		Cell 4				Cell 5				Cell 6			
		0		8		0		8		0		8	
UTRA RF Channel Number		Channel 1				Channel 2				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_offset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/7,6 8 MHz	-70											
Propagation Condition		AWGN											

8.3.5.2.4.1.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL_PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g).
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g).
- g) After a total of 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step j).
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).
- j) Repeat steps d) to i) until the confidence level according to annex F.6.2 is achieved..

NOTE 1: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

NOTE 2: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	7

8.3.5.2.5 Test Requirements

8.3.5.2.5.1 3,84 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.2.5.2 1,28 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.2.5.3 7,68 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6 Cell Re-selection in URA_PCH

8.3.6.1 Scenario 1: TDD/TDD cell re-selection single carrier case

8.3.6.1.1 Definition and applicability

8.3.6.1.1.1 3,84 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the URA UPDATE message with cause value "change of URA" in the new cell.

The requirements and this test apply to the 3,84 Mcps TDD UE.

8.3.6.1.1.2 1,28 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the SYNCH-UL sequence in the UpPTS for sending URA UPDATE message with cause value "change of URA" in the new cell.

The requirements and this test apply to the 1,28 Mcps TDD UE. The two cells shall belong to different UTRAN Registration Areas (URAs).

8.3.6.1.1.3 7,68 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the URA UPDATE message with cause value "change of URA" in the new cell.

The requirements and this test apply to the 7,68 Mcps TDD UE.

8.3.6.1.2 Minimum requirement

8.3.6.1.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateTDD}} + T_{\text{SI}}$, where:

$T_{\text{evaluateTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to TS25.123 [2] table 4.1 in clause 4.2.2.7.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.6 and A.5.6.1.

8.3.6.1.2.2 1,28 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateNTDD}} + T_{\text{SI}}$, where:

- $T_{\text{evaluateNTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to TS 25.123 [2] table 4.1a in clause 4.2.2.
- T_{SI} Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.
- This gives a total of 7.68 s, allowing 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.6 and A.5.6.1.

8.3.6.1.2.3 7,68 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateTDD}} + T_{\text{SI}}$, where:

- $T_{\text{evaluateTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to TS 25.123 [2] table 4.1B in clause 4.2.2.7.3.
- T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.
- This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.6 and A.5.6.1.

8.3.6.1.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in URA_PCH for the single carrier case.

8.3.6.1.4 Method of test

8.3.6.1.4.1 3,84 Mcps TDD option

8.3.6.1.4.1.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.6.1.1.1, and 8.3.6.1.1.2.

Table 8.3.6.1.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	
	Neighbour cells	Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell	Cell2	
HCS		Not used	
UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}	s	1,28	The value shall be used for all cells in the test.
DRX cycle length	s	1,28	The value shall be used for all cells in the test.
T1	s	15	
T2	s	15	

Table 8.3.6.1.1.2: Cell re-selection single carrier multi-cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Timeslot		Cell 4				Cell 5				Cell 6			
		0		8		0		8		0		8	
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/3,8 4 MHz	-70											
Propagation Condition		AWGN											

8.3.6.1.4.1.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA_PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g).
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g).
- g) After a total of 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded and the procedure moves to step j).
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).
- j) Repeat steps d) to i) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	7

8.3.6.1.4.2 1,28 Mcps TDD option

8.3.6.1.4.2.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.6.1.4.2.1, and 8.3.6.1.4.2.2. Cell 1 and Cell 2 shall belong to different UTRAN Registration Areas (URAs).

Table 8.3.6.1.4.2.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-103	The value shall be used for all cells in the test.
Access Service Class (ASC#0) — Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		s	1,28	The value shall be used for all cells in the test.
DRX cycle length		s	1,28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.3.6.1.4.2.2: Cell re-selection single carrier multi-cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		DWPTS		0		DWPTS		0		DWPTS	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	10	7	10	7	7	10	7	10	-1	-1	-1	-1
PCCPCH RSCP	dBm	-63	-66			-66	-63			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Timeslot		Cell 4				Cell 5				Cell 6			
		0		DWPTS		0		DWPTS		0		DWPTS	
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/lor	dB			0	0			0	0			0	0
OCNS_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/1,28 MHz	-70											
Propagation Condition		AWGN											

8.3.6.1.4.2.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA_PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 1 with a SYNCH-UL sequence in the UpPTS for sending URA UPDATE message cause "change of URA" within 8s, then a success is recorded. After receiving the URA UPDATE message cause "change of URA", the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g).
- f) If the UE has failed to respond with a SYNCH-UL sequence in the UpPTS within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise after receiving the URA UPDATE message cause "change of URA", the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g).
- g) After a total of 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a a SYNCH-UL sequence in the UpPTS for sending URA UPDATE message cause "change of URA" message within 8s, then a success is recorded and the procedure moves to step j).
- i) If the UE has failed to respond with a SYNCH-UL sequence in the UpPTS within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise after receiving the URA UPDATE message cause "change of URA", the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).
- j) After another 15 s, the UE shall be switched off.
- k) Repeat steps a) to j) until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	7

8.3.6.1.4.3 7,68 Mcps TDD option

8.3.6.1.4.3.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.6.1.4.3.1, and 8.3.6.1.4.3.2.

Table 8.3.6.1.4.3.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.3.6.1.4.3.2: Cell re-selection single carrier multi-cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_Ifset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
		Cell 4				Cell 5				Cell 6			
Timeslot		0		8		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_Ifset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/7,68 MHz	-70											
Propagation Condition		AWGN											

8.3.6.1.4.3.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA_PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g).
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g).
- g) After a total of 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded and the procedure moves to step j).
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).
- j) Repeat steps d) to i) until the confidence level according to annex F.6.2 is achieved..

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	7

8.3.6.1.5 Test Requirements

8.3.6.1.5.1 3,84 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6.1.5.2 1,28 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6.1.5.3 7,68 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

8.3.6.2.1 Definition and applicability

8.3.6.2.1.1 3,84 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the URA UPDATE message with cause value "change of URA" in the new cell.

The requirements and this test apply to the 3,84 Mcps TDD UE.

8.3.6.2.1.2 1,28 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send a SYNCH-UL sequence in the UpPTS for sending the URA UPDATE message with cause value "change of URA" in the new cell.

The requirements and this test apply to the 1,28 Mcps TDD UE. The cells shall belong to different UTRAN Registration Areas (URAs).

8.3.6.2.1.3 7,68 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell, and starts to send the URA UPDATE message with cause value "change of URA" in the new cell.

The requirements and this test apply to the 7,68 Mcps TDD UE.

8.3.6.2.2 Minimum requirement

8.3.6.2.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateTDD}} + T_{\text{SI}}$, where:

$T_{\text{evaluateTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to TS25.123 [2] table 4.1 in clause 4.2.2.7.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.6 and A.5.6.1.

8.3.6.2.2.2 1,28 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{\text{evaluateNTDD}} + T_{\text{SI}}$, where:

$T_{\text{evaluateNTDD}}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{\text{evaluateTDD}}$ of 6.4s according to TS 25.123 [2] table 4.1a in clause 4.2.2.

T_{SI} Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allowing 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.6.2 and A.5.6.2.1.2

8.3.6.2.2.3 7,68 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{evaluateTDD} + T_{SI}$, where:

$T_{evaluateTDD}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluateTDD}$ of 6.4s according to TS25.123 [2] table 4.1B in clause 4.2.2.7.3.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.6 and A.5.6.1.

8.3.6.2.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in URA_PCH for the Multiple carrier case

8.3.6.2.4 Method of test

8.3.6.2.4.1 3,84 Mcps TDD option

8.3.6.2.4.1.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.6.2.1.1, and 8.3.6.2.1.2.

Table 8.3.6.2.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}		s	1,28	The value shall be used for all cells in the test.
DRX cycle length		s	1,28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.3.6.2.1.2: Cell re-selection single carrier multi-cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1 _{s,n}	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Timeslot		Cell 4				Cell 5				Cell 6			
		0		8		0		8		0		8	
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_toffset		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 _{s,n}	dB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1 _s	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/3,8 4 MHz	-70											
Propagation Condition		AWGN											

8.3.6.2.4.1.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA_PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g).
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g).
- g) After a total of 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded and the procedure moves to step j).
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).
- j) Repeat steps d) to i) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	7

8.3.6.2.4.2 1,28 Mcps TDD option

8.3.6.2.4.2.1 Initial conditions

This scenario contains 6 cells and 2 carrier frequencies. The test parameters are given in Tables 8.3.6.2.4.2.1, and 8.3.6.2.4.2.2.

Cell1 and Cell2 shall belong to different UTRAN Registration Areas (URA).

Table A.5.6.7: General test parameters for 1,28Mcps Cell Re-selection in Multi carrier case

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	
	Neighbour cells	Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell	Cell2	
HCS		Not used	
UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Qrxlevmin	dBm	-103	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}	s	1,28	The value shall be used for all cells in the test.
DRX cycle length	s	1,28	The value shall be used for all cells in the test.
T1	s	30	
T2	s	15	

Table A.5.6.8: Cell re-selection 1,28Mcps multi carrier multi cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		DWPTS		0		DWPTS		0		DWPTS	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/I _{oc}	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/I _{oc}	dB			0	0			0	0			0	0
OCNS_Ec/I _{oc}	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	10	4	10	4	4	10	4	10	-1	-1	-1	-1
PCCPCH RSCP	dBm	-63	-69			-69	-63			-74	-74		
Qoffset _{1s,n}	dB	C1, C2: 0; C1, C3:0; C1, C4:0 C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2, C4:0 C2, C5:0; C2, C6:0				C3, C1: 0; C3, C2:0; C3, C4:0 C3, C5:0; C3, C6:0			
Qhyst _{1s}	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
Timeslot		Cell 4				Cell 5				Cell 6			
		0		DWPTS		0		DWPTS		0		DWPTS	
UTRA RF Channel Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 2			
PCCPCH_Ec/I _{oc}	dB	-3	-3			-3	-3			-3	-3		
DwPCH_Ec/I _{oc}	dB			0	0			0	0			0	0
OCNS_Ec/I _{oc}	dB	-3	-3			-3	-3			-3	-3		
\hat{I}_{or}/I_{oc}	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset _{1s,n}	dB	C4, C1: 0; C4, C2:0; C4, C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5, C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6, C3:0 C6, C4:0; C6, C5:0			
Qhyst _{1s}	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
I _{oc}	dBm/1,28 MHz	-70											
Propagation Condition		AWGN											

8.3.6.2.4.2.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA_PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 1 with a SYNCH-UL sequence in the UpPTS for sending URA UPDATE message cause "change of URA" within 8s, then a success is recorded. After receiving the URA UPDATE message cause "change of URA", the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g).
- f) If the UE has failed to respond with SYNCH-UL sequence in the UpPTS within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise after receiving the URA UPDATE message cause "change of URA", the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g).
- g) After a total of 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a SYNCH-UL sequence in the UpPTS for sending URA UPDATE message cause "change of URA" within 8s, then a success is recorded and the procedure moves to step j).
- i) Since the UE has failed to respond with SYNCH-UL sequence in the UpPTS within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise after receiving the URA UPDATE message cause "change of URA", the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).
- j) After another 15 s, the UE shall be switched off.
- k) Repeat steps a) to j) until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	7

8.3.6.2.4.3 7,68 Mcps TDD option

8.3.6.2.4.3.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.6.2.4.3.1, and 8.3.6.2.4.3.2.

Table 8.3.6.2.4.3.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T _{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	30	
T2		s	15	

Table 8.3.6.2.4.3.2: Cell re-selection single carrier multi-cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
		0		8		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_ t_{offset}		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76		
Qoffset $_{1s,n}$	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2,C4:0C2, C5:0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst $_{1s}$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
Timeslot		Cell 4				Cell 5				Cell 6			
		0		8		0		8		0		8	
UTRA RF Channel Number		Channel 1				Channel 2				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_ t_{offset}		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76		
Qoffset $_{1s,n}$	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst $_{1s}$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/7,68 MHz	-70											
Propagation Condition		AWGN											

8.3.6.2.4.3.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA_PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g).
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g).
- g) After a total of 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded and the procedure moves to step j).
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).
- j) Repeat steps d) to i) until the confidence level according to annex F.6.2 is achieved..

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	7

8.3.6.2.5 Test Requirements

8.3.6.2.5.1 3,84 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6.2.5.2 1,28 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6.2.5.3 7,68 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.8.4 RRC Connection Control

8.3.7 Serving HS-DSCH cell change

8.3.7.1 3.84 Mcps option (duplication)

Void.

8.3.7.2 1.28 Mcps option

8.3.7.2.1 Definition and applicability

When the UE receives a RRC message implying HS-DSCH cell change with the activation time "now" or earlier than RRC procedure delay seconds from the end of the last TTI containing the RRC command, the UE shall be ready to receive the HS-SCCH channel from the new cell within $T_{\text{cell_change}}$ seconds from the end of the last TTI containing the RRC command.

The requirements and this test apply to the 1,28 Mcps TDD UE of release 5 and later supporting HSDPA.

8.3.7.2.2 Minimum requirement

The UE shall also be able to start to receive the first HS-SCCH message from cell 2 less than 82 ms from the beginning of time period T3 and transmit the ACK or NAK which corresponds to the HS-SCCH message.

NOTE: The delay $T_{\text{Dell change}} = T_{\text{RRC}} + T_{\text{handover}} + T_{\text{UIDISync}} + T_{\text{hs-ich/hs-schInterval}} = 80 + 0 + 80 + 15 = 175\text{ms}$. The RRC procedure delay T_{RRC} is defined in TS25.331 Section 13.5.2

8.3.7.2.3 Test purpose

The purpose of this test is to verify the requirement for the delay when performing the serving HS-DSCH cell change in CELL_DCH state.

8.3.7.2.4 Method of test

8.3.7.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.3.7.2-1, 8.3.7.2-2. The test consists of 3 successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1 the UE have cell 1 in active set and cell 1 as the serving HS-DSCH cell.

Table 8.3.7.2-1: General test parameters for serving HS-DSCH cell change

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2.2 and A.2.1.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
HSDPA parameters			with QPSK modulation	TBD
Initial conditions	Active cell		Cell 1	Initial conditions
	Serving HS-DSCH cell		Cell 1	
Final condition	Active cell		Cell 2	Final condition
	Serving HS-DSCH cell		Cell 2	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TD-SCDMA neighbours on Channel 1	
T1		s	5	
T2		s	5	
T3		s	5	

Table 8.3.7.2-2: Cell specific test parameters for serving HS-DSCH cell change, initial conditions

Parameter	Unit	Cell 1								
		0			DwPTS			5		
Timeslot Number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1 (Note3)								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor		n.a.			-3			n.a.		
DPCH_Ec/lor	dB	n.a.			n.a.			Note1		
HS-PDSCH_Ec/lor	dB	n.a.			n.a.			-1	-inf	
HS-SCCH_Ec/lor	dB	n.a.			n.a.			-4	-inf	
$\frac{DPCH_o - E_c}{I_{or}}$	dB	-3			n.a.			Note2		
\hat{I}_{or}/I_{oc}	dB	10	7		10	7		10	7	
I_{oc}	dBm/1.2 8MHz	-70								
PCCPCH_RSCP	dBm	-63	-66		n.a.			n.a.		
Propagation Condition		AWGN								
Parameter	Unit	Cell 2								
Timeslot Number		0			DwPTS			5		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1 (Note3)								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor					-3					
DPCH_Ec/lor	dB	n.a.			n.a.			Note1		
HS-PDSCH_Ec/lor	dB	-inf.		-1	n.a.			-inf.	-1	
HS-SCCH_Ec/lor	dB	-inf.		-4	n.a.			-inf.	-4	
$\frac{DPCH_o - E_c}{I_{or}}$	dB	-3			n.a.			Note2		
\hat{I}_{or}/I_{oc}	dB	7	10		7	10		7	10	
I_{oc}	dBm/1.2 8MHz	-70								
PCCPCH_RSCP	dBm	-66	-63		n.a.			n.a.		
Propagation Condition		AWGN								
Note1: The DPCH level is controlled by the power control loop										
Note2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor.										
Note3: In the multi-carrier networks, UTRA RF Channel Number is the main carrier channel number.										

8.3.7.2.4.2 Procedure

- The SS activates cell 1-2 with T1 defined parameters and monitors cell 1 and 2 for SYNCH-UL sequence in the UpPTS for sending for RRC CONNECTION REQUEST messages from the UE.
- The UE is switched on.
- Establish the HSDPA call according to the 3GPP TS 34.108 7.3.6 requirement and set Cell1 as the current service HS-DSCH cell.
- SS shall send a MEASUREMENT CONTROL message (event 1G)
- After 5 s, the parameters are changed as described for T2.
- During time period T2, UE shall transmit a MEASUREMENT REPORT message (intra frequency) triggered by event 1G for cell 2.
- SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message (cell 2 HS-DSCH serving cell) with activation time set to "now" changing serving HS-DSCH from cell 1 to cell 2.

- h) After 5 s, the parameters are changed as described for T3. SS immediately start transmitting HSDPA Data on cell 2. The SS shall not send any HSDPA data on cell 1 after the start of T3.
- i) SS shall measure the time from start of T3 until the start of the HS-SICH subframe where the UE starts transmitting ACK/NA CK on cell 2
- j) If steps i fulfill the test requirements, then the number of successful tests is increased by one.
- k) The UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.
- l) The UE is switched off. After 5s, repeat step a-k until the confidence level according to annex F.6.2 is achieved

8.3.7.2.5 Test Requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108, with the following exceptions:

MEASUREMENT CONTROL message (Step d)

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TD-SCDMA
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TD-SCDMA
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting Required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TD-SCDMA
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	2
-Measurement reporting mode	
-Measurement Report Transfer Mode	Acknowledged mode RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	

Information Element/Group name	Value/Remark
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TD-SCDMA
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TD-SCDMA
-Timeslot ISCP reporting indicator	

PHYSICAL CHANNEL RECONFIGURATION message (Setp g):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	now
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-New DSCH_RNTI	Not Present
-New H_RNTI	'0000000000000000'
-New Primary E_RNTI	Not Present
-New Secondary E_RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
- PDCP context relocation info	Not Present
Downlink transport channels	
- HARQ Info(10.3.5.7a)	
-Number of Processes	4
-CHOICE <i>Memory Partitioning</i>	
- Implicit	NULL
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TD-SCDMA
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	30 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	TD-SCDMA
-CHOICE <i>TD-SCDMA option</i>	TD-SCDMA
-UL target SIR	
-CHOICE <i>UL OL PC info</i>	Individually signalled
-CHOICE <i>TD-SCDMA option</i>	TD-SCDMA
-TPC step size	1
-Primary CCPCH Tx Power	-80dBm
-UL Timeslot Interference	-90 dBm
-CHOICE <i>mode</i>	TD-SCDMA
-Uplink timing advance control (10.3.6.96)	
-CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
-TFCS ID	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes LCR (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TD-SCDMA option</i>	1.28 Mcps
-Timeslot number	1
-TFCl existence	True
-Midamble shift and burst type (10.3.6.41)	

Information Element	Value/Remark
-Choice <i>TD-SCDMA option</i>	1.28 Mcps
-Modulation	QPSK
-Midamble Allocation Mode	Default
-Midamble configuration	4
-Midamble shift	Not present
-CHOICE <i>TD-SCDMA option</i>	1.28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	1
-Additional TPC-SS Symbols	Not present
-First timeslot code list	1
-Channelisation code	16/1
-Choice more timeslots	No more timeslots
Downlink radio resources	
-Downlink HS-PDSCH Information(10.3.6.23a)	
-HS-SCCH Info(10.3.6.36a)	
- HS-SCCH Set Configuration	
- Timeslot number	6
- First Channelisation code	16/15
- Second Channelisation code	16/16
- Midamble Allocation mode	Default
- Midamble Shift	Not present
- Midamble configuration	4
- BLER target	
- HS-SICH configuration	
- Timeslot number	1
- Channelisation code	16/3
- Midamble Allocation mode	Default
- Midamble Shift	Not present
- Midamble configuration	8
- Ack-Nack Power Offset	Not Present
- PRX _{HS-SICH}	TBD
- TPC step size	1
-CHOICE <i>mode</i>	TD-SCDMA
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE <i>mode</i>	TD-SCDMA
-TPC Step size	1 dB
-CHOICE <i>mode</i>	TD-SCDMA
-CHOICE <i>mode</i>	TD-SCDMA
-CHOICE <i>TD-SCDMA option</i>	1.28 Mcps
-tstd_indicator	FALSE
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	TD-SCDMA
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TD-SCDMA
-CHOICE <i>TD-SCDMA option</i>	1.28 Mcps
<i>TSTD indicator</i>	TRUE
-Cell parameters ID	0
-SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	TD-SCDMA
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TD-SCDMA option</i>	1.28 Mcps
-Timeslot number	5

Information Element	Value/Remark
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	1.28 Mcps
-CHOICE <i>TD-SCDMA option</i>	Default
-Midamble Allocation Mode	4
-Midamble configuration	Not present
-Midamble shift	1.28 Mcps
-CHOICE <i>TD-SCDMA option</i>	QPSK
-Modulation	
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot channelisation codes (10.3.6.17)	Consecutive codes
-CHOICE <i>codes representation</i>	16/1
-First channelisation code	16/1
-Last channelisation code	No more timeslots
-CHOICE <i>more timeslots</i>	Not Present
-SCCPCH information for FACH (10.3.6.70)	

8.3.7.3 7.68 Mcps option

Void.

8.3.8 Inter-RAT cell change order from UTRAN TDD to GSM(GPRS)

8.3.8.1 Definition and applicability

8.3.8.1.1 3,84 Mcps option

Void.

8.3.8.1.2 1,28 Mcps option

The UTRAN to GPRS cell change order procedure delay is defined as the time from the end of the last TTI containing CELL CHANGE ORDER FROM UTRAN message to the transmission on the channel of GPRS.

The requirements and this test apply to the combined TDD 1.28Mcps and GPRS UE.

8.3.8.1.3 7,68 Mcps option

Void.

8.3.8.2 Minimum requirement

8.3.8.2.1 3,84 Mcps option

Void.

8.3.8.2.2 1,28 Mcps option

The UE shall begin to transmit on the new RACH of the target cell less than $190\text{ms} + T_{\text{BCCH}} + T_{\text{RA}}$ from the beginning of time period T3. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The test requirement in this case is expressed as:

$$T_{\text{CCOdelay}} = 190\text{ms} + T_{\text{BCCH}} + T_{\text{RA}} \text{ or}$$

$$T_{\text{CCOdelay}} = 90\text{ms} + T_{\text{BCCH}} + T_{\text{RA}}$$

190ms: delay switch from UTRAN to GSM when UE has not synchronised to the GSM cell before the CELL CHANGE ORDER FROM UTRAN is received.

90ms: delay switch from UTRAN to GSM when UE has synchronised to the GSM cell before the CELL CHANGE ORDER FROM UTRAN is received.

T_{BCCH} is the maximum time allowed to read BCCH data from GSM cell. According to TS 45.002, the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 7.6s (in order to read System Information type 13).

T_{RA} The additional delay caused by the random access procedure in the GSM cell, is 10 ms (2 GSM radio frames).

8.3.8.2.3 7,68 Mcps option

Void.

8.3.8.3 Test Purpose

8.3.8.3.1 3,84 Mcps option

Void.

8.3.8.3.2 1,28 Mcps option

To verify that the UE meets the minimum requirement.

8.3.8.3.3 7,68 Mcps option

Void.

8.3.8.4 Method of test

8.3.8.4.1 3,84 Mcps option

Void.

8.3.8.4.2 1,28 Mcps option

8.3.8.4.2.1 Initial conditions

The test parameters are given in Table 8.3.8.2, Table 8.3.8.3, and Table 8.3.8.4.

The SS starts the UTRAN cell and brings the UE into PS-DCCH+DTCH_DCH. The SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GPRS cell. The SS checks whether the cell change is performed by checking that the SS receives a successful CHANNEL REQUEST message from the UE through GPRS cell. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. The UTRAN shall send CELL CHANGE ORDER FROM UTRAN message. The start of T3 is defined as the end of the last TTI containing the CELL CHANGE ORDER FROM UTRAN.

Table 8.3.8.2: General test parameters for Correct reporting of UTRAN neighbours in AWGN propagation condition

Parameter	Unit	Value	Comments
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 34.122 clause C2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	UTRAN TDD cell
	Neighbour cell	Cell 2	GSM cell
Final condition	Active cell	Cell 2	GSM cell
Inter-RAT measurement quantity		GSM Carrier RSSI	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size	s	12 TD-SCDMA neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the start of time period T1.
Tidentify abort	s	5	
Treconfirm abort	s	5	
T1	s	10	
T2	s	10	
T3	s	10	

Table 8.3.8.3: Cell Specific Parameters for UTRAN to GPRS cell change order cell case (cell 1)

Parameter	Unit	Cell 1					
		T1	T2	T3	T1	T2	T3
DL timeslot number		0			DwPTS		
UTRA RF Channel Number		Channel 1					
PCCPCH_Ec/lor	dB	-3			0		
DwPCH_Ec/lor	dB				0		
OCNS_Ec/lor	dB	-3					
\hat{I}_{or}/I_{oc}	dB	5			5		
I_{oc}	dBm/1.28 MHz	-70					
Propagation Condition		AWGN					

Table 8.3.8.4: Cell Specific Parameters for UTRAN to GPRS cell change order cell case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2, T3
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-85	-75

8.3.8.4.2.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1.

- 2) The UE is switched on.
- 3) SS brings the UE into PS-DCCH+DTCH_DCH.
- 4) Activates cell 2, the RF parameters for cell 2 are set up according to T1 with GPRS enabled.
- 5) After 10 seconds, the SS shall switch the power settings from T1 to T2.
- 6) SS sends CELL CHANGE ORDER FROM UTRAN message indicates: the target cell description for GPRS. The start of T3 is defined as the end of the last TTI containint the CELL CHANGE ORDER FROM UTRAN.
- 7) The SS shall switch the power settings from T2 to T3.
- 8) UE shall send CHANNEL REQUEST message through cell B. If UE sends message on RACH of the target cell less than 7.8s from the beginning of time period T3 then the number of successful tests is increased by one.
- 9) At the end of T3 UE is switched off.
- 10) Repeat step 1-9 until the confidence level according to annex F.6.2A is achieved.

Specific message contents

All messages indicated above shall use the same content as described in the default message content in clause 9 or clause 6 of 34.108, with the following exceptions:

SYSTEM INFORMATION BLOCK TYPE 1:

Information element	Value/remark
T309	8 s

CELL CHANGE ORDER FROM UTRAN:

Information Element	Value/remark
Message Type	Arbitrarily selects one integer between 0 to 3
RRC transaction identifier	
Integrity check info	SS calculates the value of MAC-I for this message and writes to this IE.
- Message authentication code	
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	BSIC of Cell 2 Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" Allocated BCCH ARFCN of Cell 2 NOT PRESENT
- CHOICE Radio Access Technology	
- GSM	
- BSIC	
- Band Indicator	
- BCCH ARFCN	
- NC mode	

8.3.8.4.3 7,68 Mcps option

Void.

8.3.8.5 Test requirement

8.3.8.5.1 3,84 Mcps option

Void.

8.3.8.5.2 1,28 Mcps option

The Cell Change Order procedure delay should less than 7.8s.

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.8.5.3 7,68 Mcps option

Void.

8.4.1 RRC re-establishment delay

8.4.1.1 3,84 Mcps TDD option

8.4.1.1.1 RRC re-establishment delay to a known target cell

8.4.1.1.1.1 Definition and applicability

For UTRA TDD, the UE re-establishment delay $T_{UE-RE-ESTABLISH-REQ}$ is defined as the time between the moment when radio link failure is considered by the UE to when the UE starts sending the RRC CELL UPDATE message to the UTRAN on RACH.

$T_{UE-RE-ESTABLISH-REQ}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had a radio link connected to the cell during the last 5 seconds
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD (3,84 Mcps option) UE.

8.4.1.1.1.2 Minimum requirement

The RRC re-establishment delay $T_{RE-ESTABLISH}$ to a known target cell shall be less than 2 s.

The rate of successful RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The RRC re-establishment delay in this test case can be expressed as,

$$T_{RE-ESTABLISH} = T_{RRC-RE-ESTABLISH} + T_{UE-RE-ESTABLISH-REQ-KNOWN}$$

where,

$$T_{RRC-RE-ESTABLISH} = 160\text{ms} + (N_{313} - 1) * 10\text{ms} + T_{313}$$

$$T_{UE-RE-ESTABLISH-REQ-KNOWN} = 50\text{ms} + T_{SEARCH-KNOWN} + T_{SI} + T_{RA},$$

and,

N_{313} Equal to 20 and therefore resulting in 200 ms delay.

T_{313} Equal to 0 s.

$T_{SEARCH-KNOWN}$ Equal to 100 ms

T_{SI} Equal to 1280 ms, the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure performance value of system information blocks defined in TS 25.331 [9] for a UTRAN cell.

T_{RA} Equal to 40 ms, the additional delay caused by the random access procedure.

This gives a total of 1820ms, allow 2 s in the test case.

8.4.1.1.1.3 Test purpose

The test purpose is to verify that the RRC re-establishment delay to a known target cell is within the specified limits.

8.4.1.1.1.4 Method of test

8.4.1.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.1 and table 8.4.1.2 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE in order to camp on a cell shall be 1280 ms. DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with time durations of T1 and T2 respectively.

During T1, the DL DPCH in cell 1 shall be transmitted in timeslot 2 and the UL DPCH in cell 1 shall be transmitted in timeslot 10. At the beginning of time period T2, the DPCH shall be removed.

Cell 1 and cell shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.4.1.1: General test parameters for RRC re-establishment delay, known target cell case

Parameter		Unit	Value	Comment
DCH parameters			DL reference measurement channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	Cell 2 shall be included in the monitored set in Cell 1.
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
N313			20	
N315			1	
T313		Seconds	0	
T _{SI}		ms	1280	
Monitored cell list size			24 TDD neighbours on Channel 1	
Reporting frequency		Seconds	4	
T1			10	
T2			6	

Table 8.4.1.2: Cell specific parameters for RRC re-establishment delay test, known target cell case

Parameter	Unit	Cell 1				Cell 2			
		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2
UTRA-RF Channel Number		Channel 1				Channel 1			
PCCPCH_Ec/I _{or}	dB	-3	-3	n.a.	n.a.	-3	-3	n.a.	n.a.
SCH_Ec/I _{or}	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t _{offset}		0	0	0	0	15	15	15	15
PICH_Ec/I _{or}	dB	n.a.	n.a.	-3	-3	n.a.	n.a.	-3	-3
OCNS_Ec/I _{or}	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	3	-13	3	-13	5	5	5	5
I_{oc}	dBm/3,84 MHz	-70							
P-CCPCH_RSCP	dB	-70	-86	n.a.	n.a.	-68	-68	n.a.	n.a.
Propagation Condition		AWGN							

8.4.1.1.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
[Editor's note: subclause 7.3.4 in TS 34.108 [3] (Message sequence chart for Handover Test procedure) is not yet specified.
- 4) The SS waits for random access requests from the UE on cell 2.
- 5) 10 s after step3 has completed, the parameters are changed to that as described for T2.
- 6) If the UE responds on cell 2 within 2.0 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to T1.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS 25.331 [9] for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 1920ms (Minimum requirement + 100ms), allow 2 s in the test case.

8.4.1.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1.1.2 RRC re-establishment delay to an unknown target cell

8.4.1.1.2.1 Definition and applicability

For UTRA TDD, the UE re-establishment delay $T_{UE-RE-ESTABLISH-REQ}$ is defined as the time between the moment when radio link failure is considered by the UE to when the UE starts sending the RRC CELL UPDATE message to the UTRAN on RACH.

$T_{UE-RE-ESTABLISH-REQ}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had a radio link connected to the cell during the last 5 seconds
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD (3,84 Mcps option) UE.

8.4.1.1.2.2 Minimum requirement

The RRC re-establishment delay $T_{RE-ESTABLISH}$ to an unknown target cell shall be less than 3,7 s.

The rate of successful RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The RRC re-establishment delay in this test case can be expressed as,

$$T_{\text{RE-ESTABLISH}} = T_{\text{RRC-RE-ESTABLISH}} + T_{\text{UE-RE-ESTABLISH-REQ-UNKNOWN}}$$

where,

$$T_{\text{RRC-RE-ESTABLISH}} = 160\text{ms} + (N_{313} - 1) * 10\text{ms} + T_{313}$$

$$T_{\text{UE-RE-ESTABLISH-REQ-KNOWN}} = 50\text{ms} + T_{\text{SEARCH-UNKNOWN}} * NF + T_{\text{SI}} + T_{\text{RA}},$$

and,

N_{313} Equal to 20 and therefore resulting in 200 ms delay.

T_{313} Equal to 0 s.

$T_{\text{SEARCH-UNKNOWN}}$ Equal to 800 ms

NF Equal to 2, the number of different frequencies in the monitored set of cell 1.

T_{SI} Equal to 1280 ms, the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure performance value of system information blocks defined in TS 25.331 [9] for a UTRAN cell.

T_{RA} Equal to 40 ms, the additional delay caused by the random access procedure.

This gives a total of 3320ms, allow 3,7 s in the test case.

8.4.1.1.2.3 Test purpose

The test purpose is to verify that the RRC re-establishment delay to an unknown target cell is within the specified limits.

8.4.1.1.2.4 Method of test

8.4.1.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.3 and table 8.4.1.4 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE in order to camp on a cell shall be 1280 ms. DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with time durations of T1 and T2 respectively.

During T1, the DL DPCH in cell 1 shall be transmitted in timeslot 2 and the UL DPCH in cell 1 shall be transmitted in timeslot 10. At the beginning of time period T2, the DPCH shall be removed.

Cell 1 and cell shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.4.1.3: General test parameters for RRC re-establishment delay, unknown target cell case

Parameter		Unit	Value	Comment
DCH parameters			DL reference measurement channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	Cell 2 shall not be included in the monitored set in Cell 1.
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
N313			20	
N315			1	
T313		Seconds	0	
T _{SI}		ms	1280	
Monitored cell list size			16 TDD neighbours on Channel 1 16 TDD neighbours on Channel 2	
Reporting frequency		Seconds	4	
T1			10	
T2			6	

Table 8.4.1.4: Cell specific parameters for RRC re-establishment delay test, unknown target cell case

Parameter	Unit	Cell 1				Cell 2			
		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3	n.a.	n.a.	-3	-3	n.a.	n.a.
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t _{offset}		0	0	0	0	15	15	15	15
PICH_Ec/lor	dB	n.a.	n.a.	-3	-3	n.a.	n.a.	-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	3	-13	3	-13	5	5	5	5
I_{oc}	dBm/ 3,84 MHz	-70							
P-CCPCH_RSCP	dB	-70	-86	n.a.	n.a.	-68	-68	n.a.	n.a.
Propagation Condition		AWGN							

8.4.1.1.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]

- 4) The SS waits for random access requests from the UE on cell 2.
- 5) 10 s after step3 has completed, the parameters are changed to that as described for T2.
- 6) If the UE responds on cell 2 within 3.7 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.

- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds the RF parameters are set up according to T1.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 [TBD] times

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS 25.331 [9] for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 3420ms (Minimum requirement + 100ms), allow 3.7s in the test case.

8.4.1.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1.2 1,28 Mcps TDD option

8.4.1.2.1 RRC re-establishment delay to an known target cell

8.4.1.2.1.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{UE-RE-ESTABLISH-REQ}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send SYNC-UL in the UpPTS for sending a CELL UPDATE message using the cause "radio link failure".

$T_{UE-RE-ESTABLISH-REQ}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had a dedicated connection to the cell during the last 5 seconds.
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD UE, 1,28 Mcps option..

8.4.1.2.1.2 Minimum requirement

The Re-establishment delay $T_{RE-ESTABLISH}$ to a known cell shall be less than 1.9 s.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

$$T_{RE-ESTABLISH} = T_{RRC-RE-ESTABLISH} + T_{UE-RE-ESTABLISH-REQ-KNOWN}$$

where

$$T_{RRC-RE-ESTABLISH} = 160\text{ms} + (N_{313} - 1) * 10\text{ms} + T_{313}$$

$$T_{UE-RE-ESTABLISH-REQ-KNOWN} = 50\text{ms} + T_{\text{search}} + T_{SI} + T_{RA}$$

$$N_{313} = 20$$

$$T_{313} = 0\text{s}$$

$$T_{\text{search}} = 100\text{ms}$$

$$T_{RA} = \text{The additional delay caused by the random access procedure. 35 ms is assumed in this test case.}$$

T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 1815ms, allow 1.9s in the test case.

8.4.1.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.2.1.4 Method of test

8.4.1.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2

Frequencies to be tested: mid range; see clause G.2.4

The test parameters are given in table 8.4.1.5 and table 8.4.1.6 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consist of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.5: General test parameters for RRC re-establishment delay, Test 1

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference measurement channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control		On	
Active cell, Initial condition		Cell 1	
Active cell, Final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall only include intra frequency neighbours.
Cell 2			Included in the monitored set
Reporting frequency	Seconds	4	
T1	s	10	
T2	s	6	

Table 8.4.1.6: Cell specific parameters for RRC re-establishment delay test, Test 1

Parameter	Unit	Cell 1		Cell 2	
		0	5	0	5
Timeslot Number		T0	T0	T0	T0
UTRA RF Channel Number		Channel 1		Channel 1	
DPCH_Ec/I _{or}	dB	Not applicable	Note 2	Not applicable	
OCNS_Ec/I _{or}	dB	Note 2	Note 2	Note 2	
PCCPCH_Ec/I _{or}	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	[3]	3	-infinity	
I_{oc}	dBm/ 1.28 MHz	-70			
PCCPCH_RSCP	dBm	-70	Not applicable	-infinity	
Propagation Condition		AWGN			
NOTE 1: The DPCH level is controlled by the power control loop.					
NOTE 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or} .					

Table 8.4.1.7: Cell specific parameters for RRC re-establishment delay test, Test 1

Parameter	Unit	Cell 1				Cell 2			
		0		5		0		5	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1			
DPCH_Ec/I _{or}	dB	Not applicable		Note 1	-infinity	Not applicable			
OCNS_Ec/I _{or}	dB	Note 2		Note 2		Note 2			
PCCPCH_Ec/I _{or}	dB	-3				-3			
\hat{I}_{or}/I_{oc}	dB	[3]	-infinity	3	-infinity	6	6		
I_{oc}	dBm/ 1.28 MHz	-70							
PCCPCH_RSCP	dBm	-70	-infinity	Not applicable		-67	-67		
Propagation Condition		AWGN							
NOTE 1: The DPCH level is controlled by the power control loop.									
NOTE 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or} .									

8.4.1.2.1.4.2 Procedure

- 1) The RF parameters are set up according to column T0 in table 8.4.1.6.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 4) The RF parameters are set up according to column T1 in table 8.4.1.7.
- 5) 10 s after step4 has completed, the parameters are changed to that as described for column T2.
- 6) If the UE responds on cell 2 within 2.0 s from the beginning of time period T2 with a SYNC-UL in the UpPTS for sending CELL_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to T0.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 until the confidence level according to annex F.6.2A is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 1915ms (Minimum requirement + 100ms), allow 2s in the test case.

8.4.1.2.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1.2.2 RRC re-establishment delay to an unknown target cell

8.4.1.2.2.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{UE-RE-ESTABLISH-REQ}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send SYNC-UL in the UpPTS for sending a CELL UPDATE message using the cause "radio link failure"

$T_{UE-RE-ESTABLISH-REQ}$ is depending on whether the target cell is known by the UE or not. A cell is NOT known if both of the following conditions are true:

- the UE has NOT had a dedicated connection to the cell during the last 5 conds.
- the cell has NOT been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD UE, 1,28 Mcps option..

8.4.1.2.2.2 Minimum requirement

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

$$T_{RE-ESTABLISH} = T_{RRC-RE-ESTABLISH} + T_{UE-RE-ESTABLISH-REQ-UNKNOWN}$$

where

$$T_{RRC-RE-ESTABLISH} = 160\text{ms} + (N_{313} - 1) * 10\text{ms} + T_{313}$$

$$T_{UE-RE-ESTABLISH-REQ-UNKNOWN} = 50\text{ms} + T_{\text{search}} * NF + T_{SI} + T_{RA}$$

$$N_{313} = 20$$

$$T_{313} = 0\text{s}$$

$$T_{\text{search}} = 800\text{ms}$$

NF is the number of different frequencies in the monitored set. 3 frequencies are assumed in this test case.

T_{RA} = The additional delay caused by the random access procedure. 35 ms is assumed in this test case.

T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 4115ms, allow 4.2s in the test case.

8.4.1.2.2.3 Test purpose

To verify that the UE meets the minimum requirement

8.4.1.2.2.4 Method of test

8.4.1.2.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2

Frequencies to be tested: mid range; see clause G.2.4

The test parameters are given in table 8.4.1.7 and table 8.4.1.8 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.7. General test parameters for RRC re-establishment delay, Test 2

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference measurement channel 12.2 kbps	As specified in clause A.3.1 and A.2.1
Power Control		On	
Active cell, initial condition		Cell 1	
Active cell, final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall include 2 additional frequencies.
Cell 2			Cell 2 is not included in the monitored set. Cell 2 is located on one of the 2 additional frequencies of the monitored set.
Reporting frequency	Seconds	4	
T1	s	10	
T2	s	6	

Table 8.4.1.8 Cell specific parameters for RRC re-establishment delay test, Test 2

Parameter	Unit	Cell 1				Cell 2			
		0		5		0			
Timeslot Number		T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/I _{or}	dB	-3				-3			
DPCH_Ec/I _{or}	dB	Not applicable		Note 1	-infinity	Not applicable			
OCNS_Ec/I _{or}	dB	Note 2		Note 2		Note 2			
\hat{I}_{or}/I_{oc}	dB	3	-infinity	3	-infinity	-infinity	6		
I_{oc}	dBm/ 1.28 MHz	-70							
PCCPCH_RSCP	dBm	-70	-infinity	Not applicable		--infinity	-67		
Propagation Condition		AWGN							
NOTE 1: The DPCH level is controlled by the power control loop.									
NOTE 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or} .									

8.4.1.2.2.4.2 Procedure

- 1) The RF parameters are set up according to column T1 in table 8.4.1.4.2.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 4) The SS waits for random access requests from the UE on cell 2.

- 5) 10 s after step3 has completed, the parameters are changed to that as described for column T2.
- 6) If the UE responds on cell 2 within 4.3 s from the beginning of time period T2 with a SYNC-UL in the UpPTS for sending CELL_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds the RF parameters are set up according to T1.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 until the confidence level according to annex F.6.2A is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 4215ms (Minimum requirement + 100ms), allow 4.3s in the test case.

8.4.1.2.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1.3 7,68 Mcps TDD option

8.4.1.3.1 RRC re-establishment delay to a known target cell

8.4.1.3.1.1 Definition and applicability

For UTRA TDD, the UE re-establishment delay $T_{UE-RE-ESTABLISH-REQ}$ is defined as the time between the moment when radio link failure is considered by the UE to when the UE starts sending the RRC CELL UPDATE message to the UTRAN on RACH.

$T_{UE-RE-ESTABLISH-REQ}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had a radio link connected to the cell during the last 5 seconds
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD (7,68 Mcps option) UE.

8.4.1.3.1.2 Minimum requirement

The RRC re-establishment delay $T_{RE-ESTABLISH}$ to a known target cell shall be less than 2 s.

The rate of successful RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The RRC re-establishment delay in this test case can be expressed as,

$$T_{RE-ESTABLISH} = T_{RRC-RE-ESTABLISH} + T_{UE-RE-ESTABLISH-REQ-KNOWN}$$

where,

$$T_{RRC-RE-ESTABLISH} = 160\text{ms} + (N_{313} - 1) * 10\text{ms} + T_{313}$$

$$T_{UE-RE-ESTABLISH-REQ-KNOWN} = 50\text{ms} + T_{SEARCH-KNOWN} + T_{SI} + T_{RA},$$

and,

N_{313} Equal to 20 and therefore resulting in 200 ms delay.

T_{313}	Equal to 0 s.
$T_{\text{SEARCH-KNOWN}}$	Equal to 100 ms
T_{SI}	Equal to 1280 ms, the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure performance value of system information blocks defined in TS 25.331 [9] for a UTRAN cell.
T_{RA}	Equal to 40 ms, the additional delay caused by the random access procedure.

This gives a total of 1820ms, allow 2 s in the test case.

8.4.1.3.1.3 Test purpose

The test purpose is to verify that the RRC re-establishment delay to a known target cell is within the specified limits.

8.4.1.3.1.4 Method of test

8.4.1.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.3.1.4.1 and table 8.4.1.3.1.4.2 below. The maximum repetition period of the relevant system information blocks that needs to be received by the UE in order to camp on a cell shall be 1280 ms. DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with time durations of T1 and T2 respectively.

During T1, the DL DPCH in cell 1 shall be transmitted in timeslot 2 and the UL DPCH in cell 1 shall be transmitted in timeslot 10. At the beginning of time period T2, the DPCH shall be removed.

Cell 1 and cell shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.4.1.3.1.4.1: General test parameters for RRC re-establishment delay, known target cell case

Parameter	Unit	Value	Comment
DCH parameters		DL reference measurement channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	Cell 2 shall be included in the monitored set in Cell 1.
	Neighbour cell	Cell 2	
Final conditions	Active cell	Cell 2	
Access Service Class (ASC#0) - Persistence value	-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
N313		20	
N315		1	
T313	Seconds	0	
T_{SI}	ms	1280	
Monitored cell list size		24 TDD neighbours on Channel 1	
Reporting frequency	Seconds	4	
T1		10	
T2		6	

Table 8.4.1.3.1.4.2: Cell specific parameters for RRC re-establishment delay test, known target cell case

Parameter	Unit	Cell 1				Cell 2			
		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3	n.a.	n.a.	-3	-3	n.a.	n.a.
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_offset		0	0	0	0	15	15	15	15
PICH_Ec/lor	dB	n.a.	n.a.	-3	-3	n.a.	n.a.	-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	3	-13	3	-13	5	5	5	5
I_{oc}	dBm/7.68 MHz	-70							
P-CCPCH_RSCP	dB	-70	-86	n.a.	n.a.	-68	-68	n.a.	n.a.
Propagation Condition		AWGN							

8.4.1.3.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
[Editor's note: subclause 7.3.4 in TS 34.108 [3] (Message sequence chart for Handover Test procedure) is not yet specified.]
- 4) The SS waits for random access requests from the UE on cell 2.
- 5) 10 s after step3 has completed, the parameters are changed to that as described for T2.
- 6) If the UE responds on cell 2 within 2.0 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to T1.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS 25.331 [9] for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 1920ms (Minimum requirement + 100ms), allow 2 s in the test case.

8.4.1.3.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1.3.2 RRC re-establishment delay to an unknown target cell

8.4.1.3.2.1 Definition and applicability

For UTRA TDD, the UE re-establishment delay $T_{UE-RE-ESTABLISH-REQ}$ is defined as the time between the moment when radio link failure is considered by the UE to when the UE starts sending the RRC CELL UPDATE message to the UTRAN on RACH.

$T_{UE-RE-ESTABLISH-REQ}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had a radio link connected to the cell during the last 5 seconds
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD (7,68 Mcps option) UE.

8.4.1.3.2.2 Minimum requirement

The RRC re-establishment delay $T_{RE-ESTABLISH}$ to an unknown target cell shall be less than 3,7 s.

The rate of successful RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The RRC re-establishment delay in this test case can be expressed as,

$$T_{RE-ESTABLISH} = T_{RRC-RE-ESTABLISH} + T_{UE-RE-ESTABLISH-REQ-UNKNOWN}$$

where,

$$T_{RRC-RE-ESTABLISH} = 160\text{ms} + (N_{313} - 1) * 10\text{ms} + T_{313}$$

$$T_{UE-RE-ESTABLISH-REQ-KNOWN} = 50\text{ms} + T_{SEARCH-UNKNOWN} * NF + T_{SI} + T_{RA},$$

and,

N_{313} Equal to 20 and therefore resulting in 200 ms delay.

T_{313} Equal to 0 s.

$T_{SEARCH-UNKNOWN}$ Equal to 800 ms

NF Equal to 2, the number of different frequencies in the monitored set of cell 1.

T_{SI} Equal to 1280 ms, the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure performance value of system information blocks defined in TS 25.331 [9] for a UTRAN cell.

T_{RA} Equal to 40 ms, the additional delay caused by the random access procedure.

This gives a total of 3320ms, allow 3,7 s in the test case.

8.4.1.3.2.3 Test purpose

The test purpose is to verify that the RRC re-establishment delay to an unknown target cell is within the specified limits.

8.4.1.3.2.4 Method of test

8.4.1.3.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.3.2.4.1 and table 8.4.1.3.2.4.2 below. The maximum repetition period of the relevant system information blocks that needs to be received by the UE in order to camp on a cell shall be 1280 ms. DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with time durations of T1 and T2 respectively.

During T1, the DL DPCH in cell 1 shall be transmitted in timeslot 2 and the UL DPCH in cell 1 shall be transmitted in timeslot 10. At the beginning of time period T2, the DPCH shall be removed.

Cell 1 and cell shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.4.1.3.2.4.1: General test parameters for RRC re-establishment delay, unknown target cell case

Parameter		Unit	Value	Comment
DCH parameters			DL reference measurement channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	Cell 2 shall not be included in the monitored set in Cell 1.
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
N313			20	
N315			1	
T313		Seconds	0	
T _{SI}		ms	1280	
Monitored cell list size			16 TDD neighbours on Channel 1 16 TDD neighbours on Channel 2	
Reporting frequency		Seconds	4	
T1			10	
T2			6	

Table 8.4.1.3.2.4.2: Cell specific parameters for RRC re-establishment delay test, unknown target cell case

Parameter	Unit	Cell 1				Cell 2			
		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/I _{or}	dB	-3	-3	n.a.	n.a.	-3	-3	n.a.	n.a.
SCH_Ec/I _{or}	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_offset		0	0	0	0	15	15	15	15
PICH_Ec/I _{or}	dB	n.a.	n.a.	-3	-3	n.a.	n.a.	-3	-3
OCNS_Ec/I _{or}	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	3	-13	3	-13	5	5	5	5
I_{oc}	dBm/ 7.68 MHz	-70							
P-CCPCH_RSCP	dB	-70	-86	n.a.	n.a.	-68	-68	n.a.	n.a.
Propagation Condition		AWGN							

8.4.1.3.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]

- 4) The SS waits for random access requests from the UE on cell 2.
- 5) 10 s after step3 has completed, the parameters are changed to that as described for T2.
- 6) If the UE responds on cell 2 within 3.7 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds the RF parameters are set up according to T1.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS 25.331 [9] for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 3420ms (Minimum requirement + 100ms), allow 3.7s in the test case.

8.4.1.3.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1A Random Access

8.4.1A.1 3,84 Mcps TDD option

Void.

8.4.1A.2 1,28 Mcps TDD option

8.4.1A.2.1 Correct behaviour when receiving FPACH

8.4.1A.2.1.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in clause 5.6 of TS 25.224 and the control of the RACH transmission is specified in clause 11.2.3.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.3.2 of TS 25.303.

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.4.1A.2.1.2 Minimum requirement

The UE shall have capability to calculate initial power according to the open loop algorithm :

$$P_{\text{UpPCH}} = L_{\text{PCCPCH}} + \text{PRX}_{\text{UpPCHdes}} + (i-1) * P_{\text{Wramp}}$$

and apply this power level for the transmission of SYNC_UL.

The absolute power applied to the first SYNC_UL shall have an accuracy as specified in table 6.4.1.2 of TS 25.102. The accuracy is ± 9 dB in the case of normal condition or ± 12 dB in the case of extreme condition.

There is a relative powers, which is the power difference for SYNC_UL ramping. From the test parameter in the table 1-3, the test requirement of the power difference for all SYNC_UL ramping is 0~3dB (P_{Wramp}). The accuracy is specified in table 1-1.

Table 8.4.1A.2.1: Transmitter power difference tolerance for SYNC_UL ramping

Power step size P_{wramp} [dB]	Transmitter power difference tolerance [dB]
0	+/- 1
1	+/- 1
2	+/- 1.5
3	+/- 2

The UE shall stop transmitting SYNC_UL when FPACH has been received correctly and then transmit PRACH. The UE shall transmit i SYNC_UL and 1 PRACH. $i=1 \dots \text{Max SYNC_UL Transmissions}$.

8.4.1A.2.1.3 Test purpose

The purpose of this test is to verify that the behaviour of the random access procedure is according to the requirements.

8.4.1A.2.1.4 Method of test

8.4.1A.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2

Frequencies to be tested: mid range; see clause G.2.4.

Table 8.4.1A.2.1A: RF Parameters for Random Access test

Parameter	Unit	Cell 1
UTRARF Channel Number		Channel 1
PCCPCH_Ec/I _{or}	dB	-3
OCNS_Ec/I _{or}	dB	-3
\hat{I}_{or}/I_{oc}	dB	10
I_{oc}	dBm/1.28 MHz	-70
PCCPCH_RSCP	dBm/1.28MHz	-63
Propagation Condition		AWGN

The test parameters "System Information Block (SIB) type 5 (ASC #0)" defined in clause 6.1 of TS 34.108, shall be used in all random access tests. Crucial parameters for the test requirements are repeated in tables 1-3 and these overrule the parameters defined in SIB type 5. A parameter of AC-to-ASC mapping (AC0-9) in SIB5 of clause 6.1 of TS 34.108 shall be set to 0 in the case of all random access tests.

Table 8.4.1A.2.1B: UE/SS parameters for Random Access test

Parameter	Unit	Value
Access Service Class (ASC#0)		
- Persistence value	0..1	1
PCCPCH Power - Broadcast	dB	18
Max SYNC_UL Transmissions		8
Power step when no acquisition indicator is received (P_{wramp})	dB	1~3
Maximum allowed UL TX power	dBm	21
Desired UpPCH RX power at the cell's receiver ($PRX_{UpPCHdes}$)	dBm	-100dBm

8.4.1A.2.1.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 1-2, and table 1-3, set the value of P_{wramp} as 1dB.

- 2) The PRACH procedure within the call setup is used for the test. It is necessary that an ACK on FPACH shall be transmitted after 6 SYNC_UL have been received by the SS.
- 3) Measure the first SYNC_UL output power, and the each power difference for SYNC_UL ramping. If power difference for SYNC_UL fulfills test requirement in table 1-4, the successful times plus 1, otherwise failed times plus 1.
- 4) The call procedure is set up successfully, and SS release RRC connection.
- 5) Reconfigure the value of $P_{w_{ramp}}$ as 2dB, repeat step 1)~4).
- 6) Reconfigure the value of $P_{w_{ramp}}$ as 3dB, repeat step 1)~4).

8.4.1A.2.1.5 Test requirements

The accuracy of the first SYNC_UL as specified in clause 6.4.1.2 of TS 25.102 shall not be verified in this test. It is verified under the section 5.4.1.3, Open loop power control.

Table 8.4.1A.2.1C: Test requirement for power difference

	Power difference for all SYNC_UL
Test requirement	1dB ±1.7 dB
	2dB ±2.2 dB
	3dB ±2.7 dB

In each call setup procedure UE shall stop transmitting SYNC_UL when correct FPACH has been received and then transmit PRACH. The UE shall transmit 6 SYNC_UL.

8.4.1A.2.2 Correct behaviour when reaching maximum allowed UL transmit power

8.4.1A.2.2.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in clause 6 of TS 25.224 and the control of the RACH transmission is specified in clause 11.2 of TS 25.321.

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.4.1A.2.2.2 Minimum requirement

The UE shall not exceed the maximum allowed UL TX power, which is specified in table 8.4.1A.2.2 and configured by the SS, with more than the accuracy tolerances as defined in section 9.1.2.1.1 of TS 25.123.

Section 6A.3 of TS 25.123 states that for UE output powers that are outside the range covered by the UE transmitted power measurement the UE output power shall not exceed the Maximum allowed UL TX Power with more than the tolerances specified for the UL power control in TS 25.102.

No FPACH shall be sent by SS during this test.

8.4.1A.2.2.3 Test purpose

The purpose of this test is to verify that the SYNC_UL power behavior when reaching Maximum allowed UL TX power is correct.

8.4.1A.2.2.4 Method of test

8.4.1A.2.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2

Frequencies to be tested: mid range; see clause G.2.4.

See TS 34.108 [3] for details regarding generic call setup procedure.

Table 8.4.1A.2.2: Test parameters for correct behaviour when reaching maximum transmit power

Parameter	Unit	Cell 1
UTRA RF Channel Number		Channel 1
PCCPCH_Ec/Ior	dB	-3
DwPCH_Ec/Ior	dB	0
OCNS_Ec/Ior	dB	-3
\hat{I}_{or}/I_{oc}	dB	7
I_{oc}	dBm/1.28 MHz	-70
PCCPCH RSCP	dBm	-66
broadcasted Primary CCPCH transmit power on BCH	dBm	24
Access Service Class (ASC#0)		
- Persistence value	0..1	1
SYNC_UL code bitmap		11111111
PRXUppchdes	dbm	-95
Power Ramp step	dB	3
Max SYNC_UL Transmissions		8
Mmax		4
Maximum allowed UL TX power	dBm	0
Propagation Condition		AWGN

8.4.1A.2.2.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.1A.2.2. The PRACH procedure within the call setup is used for the test. It is necessary that SS shall transmit no FPACH.
- 2) Set the TX output level of the SS to obtain \hat{I}_{or} at the UE antenna connector. \hat{I}_{or} shall be according to table 8.4.1A.2.2A.
- 3) Measure all SYNC_UL output power of the UE.

8.4.1A.2.2.5 Test requirements

The UE shall not exceed the Maximum allowed UL TX power configured by the SS with more than the tolerance specified in table 8.4.1A.2.2A.

Table 8.4.1A.2.2A: Test requirement for maximum SYNC_UL power

	Maximum SYNC_UL power	
Test requirement(normal)	0dBm	±10 dB
Test requirement(extreme)	0dBm	±13 dB

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1A.3 7.68 Mcps TDD option

Void.

8.4.2 Transport Format Combination selection in UE

8.4.2.1 Interactive or Background, PS, UL: 64 kbps

8.4.2.1.1 Definition and applicability

8.4.2.1.1.1 3,84 Mcps TDD option

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format combination set. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321 [14].

8.4.2.1.1.1A 1,28 Mcps TDD option

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format combination set. This allows the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321 [14].

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.4.2.1.1.2 7,68 Mcps TDD option

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format combination set. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321 [14].

8.4.2.1.2 Minimum requirements

8.4.2.1.2.1 3,84 Mcps TDD option

The UE shall continuously evaluate based on the *Elimination*, *Recovery* and *Blocking* criteria defined below, how TFCs can be used for the purpose of TFC selection. The evaluation shall be performed using the estimated UE transmit power of a given CCTrCH in its associated timeslots.

In the case of a single CCTrCH or multiple CCTrCHs having mutually exclusive timeslot assignments, the UE shall consider the *Elimination* criterion for a given TFC of a CCTrCH to be fulfilled if for 3 successive frames the estimated UE transmit power is greater than the Maximum UE transmitter power for at least one timeslot associated with the CCTrCH in each frame.

In the case of multiple CCTrCHs not having mutually exclusive timeslot assignments, if for a given CCTrCH for 3 successive frames the estimated UE transmit power is greater than the Maximum UE transmitter power for at least one timeslot associated with the CCTrCH in each frame, the UE shall consider the *Elimination* criterion for a given TFC to be fulfilled if the use of this TFC will cause the estimated UE transmit power to continue to be greater than the Maximum UE transmitter power in at least one timeslot associated with the CCTrCH.

In the case of multi-frame operation of UL Physical Channels, the UE shall only consider active frames for the evaluation of the *Elimination* criterion.

If the *Elimination* criterion for a given TFC is fulfilled, the MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Elimination* criterion was fulfilled.

The UE shall not consider the *Recovery* criterion for a given TFC to be fulfilled until the use of this TFC will not cause the estimated UE transmit power to be greater than the Maximum UE transmitter power for all UL timeslots associated with the TFC for a minimum of 3 successive frames.

In the case of multi-frame operation of UL Physical Channels, the UE shall only consider active frames for the evaluation of the *Recovery* criterion.

If the *Recovery* criterion for a given TFC is fulfilled, the MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Recovery* criterion was fulfilled.

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess -Power state for a duration of

$$(T_{\text{notify}} + T_{\text{modify}} + T_{\text{L1_proc}}).$$

where:

T_{notify} equals 15 ms, and

T_{modify} equals $\text{MAX}(T_{\text{adapt_max}}, T_{\text{TTI}})$, and

$T_{\text{L1_proc}}$ equals 35 ms, and

$T_{\text{adapt_max}}$ equals $\text{MAX}(T_{\text{adapt_1}}, T_{\text{adapt_2}}, \dots, T_{\text{adapt_N}})$, and

N equals the number of logical channels that need to change rate, and

$T_{\text{adapt_n}}$ equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n . Table 6A.1 defines T_{adapt} times for different services. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms.

Table 8.4.2.1.1: T_{adapt}

Service	T_{adapt} [ms]
UMTS AMR	40
UMTS AMR 2	60

T_{TTI} equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

$$\text{Maximum UE transmitter power} = \text{MIN}(\text{Maximum allowed UL TX Power}, \text{UE maximum transmit power})$$

where

Maximum allowed UL TX Power is set by SS and defined in TS 25.331 [9], and

UE maximum transmit power is defined by the UE power class, and specified in TS 25.102 [1].

The normative reference for these requirements is TS 25.123 [2] clauses 6A.2 and A.6A.2.

8.4.2.1.2.1A 1,28 Mcps TDD option

The UE shall continuously evaluate based on the *Elimination*, *Recovery* and *Blocking* criteria defined below, how TFCs can be used for the purpose of TFC selection. The evaluation shall be performed using the estimated UE transmit power of a given TFC. The UE transmit power estimation shall be made using the UE transmitted power measured over the measurement period and the gain factors of the corresponding TFC.

The UE shall consider the *Elimination* criterion for a given TFC to be fulfilled if the estimated UE transmit power needed for this TFC is greater than the Maximum UE transmitter power for at least X out of Y successive measurement periods. The MAC in the UE shall consider that the TFC is in Excess -Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within [15 ms] from the moment the *Elimination* criterion was fulfilled.

The UE shall consider the *Recovery* criterion for a given TFC to be fulfilled if the estimated UE transmit power needed for this TFC has not been greater than the Maximum UE transmitter power for at least Y successive measurement periods. The MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Recovery* criterion was fulfilled.

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess-Power state for a duration of $(T_{\text{notify}} + T_{\text{modify}} + T_{\text{L1_proc}})$.

where:

T_{notify} equals [15] ms, and

T_{modify} equals $\text{MAX}(T_{\text{adapt_max}}, T_{\text{TTI}})$, and

$T_{\text{L1_proc}}$ equals 15 ms, and

$T_{\text{adapt_max}}$ equals $\text{MAX}(T_{\text{adapt_1}}, T_{\text{adapt_2}}, \dots, T_{\text{adapt_N}})$, and

N equals the number of logical channels that need to change rate, and

$T_{\text{adapt_n}}$ equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n . Table 8.4.2.1.1A defines T_{adapt} times for different services. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms.

Table 8.4.2.1.1A T_{adapt} (1,28Mcps)

Service	T_{adapt} [ms]
AMR	40

T_{TTI} equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

Maximum UE transmitter power = $\text{MIN}(\text{Maximum allowed UL TX Power}, \text{UE maximum transmit power})$

Where

Maximum allowed UL TX Power is set by SS and defined in TS 25.331 [9], and

UE maximum transmit power is defined by the UE power class, and specified in TS 25.102 [1].

The normative reference for these requirements is TS 25.123 [2] clauses 6A.2.2.2 and A.6.A2.2.2

8.4.2.1.2.2 7,68 Mcps TDD option

The UE shall continuously evaluate based on the *Elimination*, *Recovery* and *Blocking* criteria defined below, how TFCs can be used for the purpose of TFC selection. The evaluation shall be performed using the estimated UE transmit power of a given CCTrCH in its associated timeslots.

In the case of a single CCTrCH or multiple CCTrCHs having mutually exclusive timeslot assignments, the UE shall consider the *Elimination* criterion for a given TFC of a CCTrCH to be fulfilled if for 3 successive frames the estimated UE transmit power is greater than the Maximum UE transmitter power for at least one timeslot associated with the CCTrCH in each frame.

In the case of multiple CCTrCHs not having mutually exclusive timeslot assignments, if for a given CCTrCH for 3 successive frames the estimated UE transmit power is greater than the Maximum UE transmitter power for at least one timeslot associated with the CCTrCH in each frame, the UE shall consider the *Elimination* criterion for a given TFC to be fulfilled if the use of this TFC will cause the estimated UE transmit power to continue to be greater than the Maximum UE transmitter power in at least one timeslot associated with the CCTrCH.

In the case of multi-frame operation of UL Physical Channels, the UE shall only consider active frames for the evaluation of the *Elimination* criterion.

If the *Elimination* criterion for a given TFC is fulfilled, the MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Elimination* criterion was fulfilled.

The UE shall not consider the *Recovery* criterion for a given TFC to be fulfilled until the use of this TFC will not cause the estimated UE transmit power to be greater than the Maximum UE transmitter power for all UL timeslots associated with the TFC for a minimum of 3 successive frames.

In the case of multi-frame operation of UL Physical Channels, the UE shall only consider active frames for the evaluation of the *Recovery* criterion.

If the *Recovery* criterion for a given TFC is fulfilled, the MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Recovery* criterion was fulfilled.

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess-Power state for a duration of

$$(T_{\text{notify}} + T_{\text{modify}} + T_{\text{L1_proc}}).$$

where:

T_{notify} equals 15 ms, and

T_{modify} equals $\text{MAX}(T_{\text{adapt_max}}, T_{\text{TTI}})$, and

$T_{\text{L1_proc}}$ equals 35 ms, and

$T_{\text{adapt_max}}$ equals $\text{MAX}(T_{\text{adapt_1}}, T_{\text{adapt_2}}, \dots, T_{\text{adapt_N}})$, and

N equals the number of logical channels that need to change rate, and

$T_{\text{adapt_n}}$ equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n . Table 6A.1 defines T_{adapt} times for different services. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms.

Table 8.4.2.1.1: T_{adapt}

Service	T_{adapt} [ms]
UMTS AMR	40
UMTS AMR 2	60

T_{TTI} equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

$$\text{Maximum UE transmitter power} = \text{MIN}(\text{Maximum allowed UL TX Power}, \text{UE maximum transmit power})$$

where

Maximum allowed UL TX Power is set by SS and defined in TS 25.331 [9], and

UE maximum transmit power is defined by the UE power class, and specified in TS 25.102 [1].

The normative reference for these requirements is TS 25.123 [2] clauses 6A.2 and A.6A.2.

8.4.2.1.3 Test purpose

8.4.2.1.3.1 3,84 Mcps TDD option

The purpose is to verify the UE blocks (stops using) a currently used TFC when the UE output power is not sufficient to support that TFC. This test will verify the general requirement on TFC selection in section 8.4.2.1.2 for a RAB intended for packet data services, i.e. Interactive or Background, PS, UL: 64kbps as defined in TS 34.108 [3].

8.4.2.1.3.1A 1,28 Mcps TDD option

The purpose is to verify the UE blocks (stops using) a currently used TFC when the UE output power is not sufficient to support that TFC. This test will verify the general requirement on TFC selection in section 8.4.2.1.2A for a RAB intended for packet data services, i.e. Interactive or Background, PS, UL: 64kbps as defined in TS 34.108 [3].

8.4.2.1.3.2 7,68 Mcps TDD option

The purpose is to verify the UE blocks (stops using) a currently used TFC when the UE output power is not sufficient to support that TFC. This test will verify the general requirement on TFC selection in section 8.4.2.1.2 for a RAB intended for packet data services, i.e. Interactive or Background, PS, UL: 64kbps as defined in TS 34.108 [3].

8.4.2.1.4 Method of test

8.4.2.1.4.1 Initial conditions

8.4.2.1.4.1.1 3,84 Mcps TDD option

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Tables 8.4.2.1.2, 8.4.2.1.3, Table 8.4.2.1.4 and Table 8.4.2.1.5 below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

Details on the UL reference RAB in table 8.4.2.1.3 can be found in TS 34.108 [3] section "Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH".

Table 8.4.2.1.2: General test parameters

Parameter	Unit	Value	Comment
TFCS size		10	
TFCS		UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC8, UL_TFC9	Gain factors for TFC0 to TFC9 shall be set to 1.
Power Control		On	
Active cell		Cell 1	
Maximum allowed UL TX power	dBm	0	Value of IE "Maximum allowed UL Tx power"
Primary CCPCH Tx power	dBm	18	Value of IE "Primary CCPCH Tx power"
UL timeslot interference	dBm	-80	Value of IE "UL timeslot interference" This value shall apply to all timeslots
α		1	IE "Alpha" either not sent or explicitly set to value
UL target SIR	dB	6	
DPCH constant offset	dB	adjustable	Value of IE "DPCH constant power"
T1	s	10	
T2	s	10	

Table 8.4.2.1.3: Transport channel parameters for UL reference RAB, Interactive or Background and DCCH

Parameter	Unit	64 kbps RAB	DCCH 3.4kbps
Transport Channel Number		1	2
Transmission Time Interval	ms	20	40
Type of Error Protection		Turbo coding	Convolutional coding
Coding Rate		1/3	
Size of CRC	bits	16	
Transport Block Size	bits	336	148
Transport Block Set Size	bits	336*B (B=0,1,2,3,4)	148*B (B=0,1)
Transport Format Set	bits		
TF0		0x336	0x148
TF1		1x336	1x148
TF2		2x336	N/A
TF3		3x336	N/A
TF4		4x336	N/A

Table 8.4.2.1.4: UL TFCI

TFCI	(64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF0, TF1)
UL_TFC2	(TF1, TF0)
UL_TFC3	(TF1, TF1)
UL_TFC4	(TF2, TF0)
UL_TFC5	(TF2, TF1)
UL_TFC6	(TF3, TF0)
UL_TFC7	(TF3, TF1)
UL_TFC8	(TF4, TF0)
UL_TFC9	(TF4, TF1)

Table 8.4.2.1.5: Physical channel parameters

Parameter	Unit	Value
UL timeslot		7
Burst type		1
Resource units		{{(spreading factor 16 x 1 code) + (spreading factor 4 x 1 code)} x 1 time slot
TFCI	Bits	16
TPC	Bits	2
Frame allocation		Continuous

The test shall be performed in AWGN channel propagation conditions. The P-CCPCH in the DL shall be transmitted in timeslot 0.

The amount of available user data shall be sufficient to allow uplink transmission at the highest bit rate (UL_TFC8 or UL_TFC9) during the entire test and it shall be ensured that the UE is using UL_TFC8 or UL_TFC9 at the end of T1.

8.4.2.1.4.1.1A 1,28 Mcps TDD option

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Tables 8.4.2.1.5A , 8.4.2.1.5B and Table 8.4.2.1.5C below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

Details on the UL reference RAB in table 8.4.2.1.3 can be found in TS 34.108 [3] section "Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH".

Table 8.4.2.1.5A General test parameters

Parameter	Unit	Value	Comment
TFCS size		10	
TFCS		UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC8, UL_TFC9	
Power Control		On	
TPC step size	dB	1	
Maximum allowed UL TX power	dBm	21	
T1	s	30	
T2	s	10	

Table 8.4.2.1.5B: UL Reference RAB interactive or background

	TFI	64 kbps RAB (20ms TTI)	DCCH 3.4kbps (40ms TTI)
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Table 8.4.2.1.5C: UL TFCI

TFCI	(64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF0, TF1)
UL_TFC2	(TF1, TF0)
UL_TFC3	(TF1, TF1)
UL_TFC4	(TF2, TF0)
UL_TFC5	(TF2, TF1)
UL_TFC6	(TF3, TF0)
UL_TFC7	(TF3, TF1)
UL_TFC8	(TF4, TF0)
UL_TFC9	(TF4, TF1)

The test shall be performed in AWGN channel propagation conditions.

The amount of available user data shall be sufficient to allow uplink transmission at the highest bit rate (UL_TFC8 or UL_TFC9) during the entire test and it shall be ensured that the UE is using UL_TFC8 or UL_TFC9 at the end of T1

8.4.2.1.4.1.2 7,68 Mcps TDD option

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Tables 8.4.2.1.4.1.2.1, 8.4.2.1.4.1.2.2, 8.4.2.1.4.1.2.3 and 8.4.2.1.4.1.2.4 below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

Details on the UL reference RAB in table 8.4.2.1.4.1.2.2 can be found in TS 34.108 [3] section "Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH".

Table 8.4.2.1.4.1.2.1: General test parameters

Parameter	Unit	Value	Comment
TFCs size		10	
TFCs		UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC8, UL_TFC9	Gain factors for TFC0 to TFC9 shall be set to 1.
Power Control		On	
Active cell		Cell 1	
Maximum allowed UL TX power	dBm	0	Value of IE "Maximum allowed UL Tx power"
Primary CCPCH Tx power	dBm	18	Value of IE "Primary CCPCH Tx power"
UL timeslot interference	dBm	-80	Value of IE "UL timeslot interference" This value shall apply to all timeslots
α		1	IE "Alpha" either not sent or explicitly set to value
UL target SIR	dB	6	
DPCH constant offset	dB	adjustable	Value of IE "DPCH constant power"
T1	s	10	
T2	s	10	

Table 8.4.2.1.4.1.2.2: Transport channel parameters for UL reference RAB, Interactive or Background and DCCH

Parameter	Unit	64 kbps RAB	DCCH 3.4kbps
Transport Channel Number		1	2
Transmission Time Interval	ms	20	40
Type of Error Protection		Turbo coding	Convolutional coding
Coding Rate		1/3	
Size of CRC	bits	16	
Transport Block Size	bits	336	148
Transport Block Set Size	bits	336*B (B=0,1,2,3,4)	148*B (B=0,1)
Transport Format Set	bits		
TF0		0x336	0x148
TF1		1x336	1x148
TF2		2x336	N/A
TF3		3x336	N/A
TF4		4x336	N/A

Table 8.4.2.1.4.1.2.3: UL TFCI

TFCI	(64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF0, TF1)
UL_TFC2	(TF1, TF0)
UL_TFC3	(TF1, TF1)
UL_TFC4	(TF2, TF0)
UL_TFC5	(TF2, TF1)
UL_TFC6	(TF3, TF0)
UL_TFC7	(TF3, TF1)
UL_TFC8	(TF4, TF0)
UL_TFC9	(TF4, TF1)

Table 8.4.2.1.4.1.2.4: Physical channel parameters

Parameter	Unit	Value
UL timeslot		7
Burst type		1
Resource units		{{(spreading factor 32 x 1 code) + (spreading factor 8 x 1 code)} x 1 time slot
TFCI	Bits	16
TPC	Bits	2
Frame allocation		Continuous

The test shall be performed in AWGN channel propagation conditions. The P-CCPCH in the DL shall be transmitted in timeslot 0.

The amount of available user data shall be sufficient to allow uplink transmission at the highest bit rate (UL_TFC8 or UL_TFC9) during the entire test and it shall be ensured that the UE is using UL_TFC8 or UL_TFC9 at the end of T1.

8.4.2.1.4.2 Procedure

8.4.2.1.4.2.1 3,84 Mcps TDD option

- 1) The UE is switched on.
- 2) The SS shall signal to the UE the allowed TFCS according to table 8.4.2.1.2.
- 3) For T1=30 secs the SS shall ensure that the received P-CCPCH power level in the UE is set to -60dBm and that the value of the DPCH constant value is adjusted such that the mean UE output power is -10dBm.
- 4) The SS shall decrease the received P-CCPCH power level in the UE by 20 dB.
- 5) The time from the beginning of T2 until the UE blocks (stops using) UL_TFC8 and UL_TFC9 shall be measured by the SS. The UE shall stop using UL_TFC8 and UL_TFC9 within 170 ms from beginning of time period T2.
- 6) Repeat steps 3-5 [50] times.

8.4.2.1.4.2.1A 1,28 Mcps TDD option

1. The UE is switched on.
2. The SS shall signal to the UE the allowed TFCS according to table above.
3. For T1=30 secs the SS shall ensure that the received P-CCPCH power level in the UE is set to -60dBm and that the value of the DPCH constant value is adjusted such that the mean UE output power is 10dB below the UE Maximum allowed UL TX power..
4. The system simulator shall continuously send TPC_cmd=Up to the UE from the beginning of T2 until the end of T2.

NOTE: This will guarantee that UL_TFC8 to UL_TFC9 can not be supported because the UE reaches the maximum UL Tx power and the UTRAN SS continues sending power-up commands.

1. The time from the beginning of T2 until the UE blocks (stops using) UL_TFC8 and UL_TFC9 shall be measured by the SS. The UE shall stop using UL_TFC8 and UL_TFC9 within [250] ms from beginning of time period T2.
2. Repeat steps 3-5 until the confidence level according to annex F.6.2 is achieved.

NOTE: The delay from the beginning of T2 can be expressed as: $T_{\text{ramp}} + T_{\text{detect_block}} + T_{\text{notify}} + T_{\text{modify}} + T_{\text{L1_pnc}} + T_{\text{align_TTI}}$, where:

T_{ramp} Margin added for the increase of UE output power to the UE maximum power. A margin of 7 frames (70ms) is used, i.e. 14 TPC commands.

$T_{\text{detect_block}}$ The time needed to detect that UL_TFC8 and UL_TFC9 can no longer be supported, i.e. defines the maximum time to detect that the *Limited TFC Set* criterion is fulfilled for UL_TFC8 and UL_TFC9. This figure is currently TBD as X and Y in the general requirement, see section 6.4.2 of TS25.123 [2], are not finalised yet.

T_{notify}	Equal to [15] ms, the time allowed for MAC to indicate to higher layers that UL_TFC8 and UL_TFC9 can no longer be supported.
T_{modify}	Equal to $\text{MAX}(T_{\text{adapt_max}}, T_{\text{TTI}}) = \text{MAX}(0, 40) = 40\text{ms}$
$T_{\text{adapt_max}}$	Equals to 0ms for the case without codec.
$T_{\text{LL_proc}}$	Equals 15ms.
$T_{\text{align_TTI}}$	Align with the longest uplink TTI where the new TFC can be selected. The worst case equals 40ms in this test case.
T_{TTI}	Equals 40 ms in the test case.

This gives a maximum delay of $(70 + T_{\text{detect_block}} + [15] + 40 + 15 + 40)$ ms from the beginning of T2.

8.4.2.1.4.2.2 7.68 Mcps TDD option

- 1) The UE is switched on.
- 2) The SS shall signal to the UE the allowed TFCS according to table 8.4.2.1.4.1.2.1.
- 3) For $T_1=30$ secs the SS shall ensure that the received P-CCPCH power level in the UE is set to -60dBm and that the value of the DPCH constant value is adjusted such that the mean UE output power is -10dBm .
- 4) The SS shall decrease the received P-CCPCH power level in the UE by 20 dB.
- 5) The time from the beginning of T2 until the UE blocks (stops using) UL_TFC8 and UL_TFC9 shall be measured by the SS. The UE shall stop using UL_TFC8 and UL_TFC9 within 170 ms from beginning of time period T2.
- 6) Repeat steps 3-5 [50] times.

8.4.2.1.5 Test requirements

8.4.2.1.5.1 3,84 Mcps TDD option

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.2.1.5.1A 1,28 Mcps TDD option

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.

8.4.2.1.5.2 7,68 Mcps TDD option

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.3 E-TFC selection in UE

8.4.3.1 3.84 Mcps option

Void.

8.4.3.2 1.28 Mcps option

8.4.3.2.1 5ms TTI E-DCH E-TFC selection

8.4.3.2.1.1 Definition and applicability

The E-TFC selection delay is defined as the time from the moment SS starts to send TPC_Cmd=+1 to the moment UE E-TFCI becomes 0. UE E-TFC selection is specified in section 11.9.1.4 in TS25.321.

The requirements and this test apply to the 1,28 Mcps TDD UE of release 7 and later supporting HSUPA.

8.4.3.2.1.2 Minimum requirements

E-TFC selection is allowed only in the CELL_DCH state.

UE will calculate the power of E-PUCH according to the expressions as follows: (Which is stated in TS 25.224 clause 4.2.2.4)

$$P_{E-PUCH} = P_{e-base} + L + \beta_e + K_{E-PUCH}$$

maximum supported transmission power for a certain E-TFC = max(maximum UE transmission power, E-PUCH transmission power).

where maximum UE transmission power is the maximum transmission power of UE.

E-PUCH transmission power is calculated by the expressions above with $\beta_e = (AG + \alpha_e)$.

The UE shall consider the *Blocking* criterion for a given E-TFC to be fulfilled if the estimated power of E-PUCH is larger than maximum supported transmission power for a certain E-TFC.

8.4.3.2.1.3 Test Purpose

The purpose is to verify the UE stops using a currently used E-TFC when its power is not sufficient to support that E-TFC, and resumes using that E-TFC when its power is sufficient to support it.

This test is to verify the requirement for the cell re-selection delay in the single carrier case.

8.4.3.2.1.4 Method of test

8.4.3.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect the SS (node B emulator) to the UE antenna connector as shown in figure A.1.
- 2) The UL Reference Measurement Channel and the Fixed Reference Channels (FRC 1, QPSK) are specified in Annex C.6.1.2.1.

The test parameters are given in Table 8.4.3.2.1-1 and 8.4.3.2.1-2 below. The test consists of 3 time periods, with a time duration of T1, T2 and T3 respectively.

An E-DCH radio bearer shall be configured, so that UE is transmitting E-PUCH in the initial condition before the time T1, defined as T0.

Table 8.4.3.2.1-1: General test parameters

Parameter	Unit	Value	Comment
UL DPCH configuration		12.2kbps reference measurement channel	
E-DCH Transport Block Size Table		5ms TTI E-DCH Transport Block Size Table 0 according to TS 25.321 annex BC.1	
UL Power Control		On	
Active cell		Cell 1	
Maximum allowed UL TX power	dBm	24	For a class 4 UE maximum allowed TX power can still be signalled as 24dBm however the UE only has capability to transmit 21dBm
Propagation condition		AWGN	
Δ_{harq}	dB	0	
Periodicity for Scheduling Info		Every TTI	
E-DCH MAC-D flow maximum number of retransmissions		0	
T1	S	30	
T2	S	10	
T3	S	10	

Table 8.4.3.2.1-2: Additional cell specific parameters

Parameter	Unit	Cell 1					
		0			DwPTS		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Channel 1					
PCCPCH_Ec/lor		-3					
DwPCH_Ec/lor	dB				-3		
HS-SCCH_Ec/lor	dB	-1					
HS-SICH_Ec/lor	dB	-1					
HS-PDSCH_Ec/lor	dB	0					
E-AGCH_Ec/lor	dB	-10					
E-HICH_Ec/lor	dB	-10					
OCNS_Ec/lor	dB	Note 1					
\hat{I}_{or}	dBm/1.28 MHz	-65					

8.4.3.2.1.4.2 Procedure

- The SS activates cell 1 with T0 parameters defined in table 8.4.3.2.1-2.
- The UE is switched on.
- An E-DCH call is set up according to TS 34.108 [3] 7.3.9 with the following exceptions in the RADIO BEARER SETUP messages. These exceptions are derived from Table 8.4.3.2.1-3.
- Enter the UE into loopback mode 1 looping back E-DCH and start the loopback test. This way the UE is configured to transmit a data stream on the E-PUCH.
- The SS signals AG value = 31 on the E-AGCH continuously to give UE grants to make use of the maximum possible data rate.
- For T1=30 secs the SS shall send sufficient consecutive TPC_cmd = +1 to the UE until the E-TFC of UE changes.
- From the start of T2 the system simulator shall send sufficient consecutive TPC_cmd = +1 to the UE, and UE

shall decrease continuously the value of E-TFCI until E-TFCI becomes 0

- h) From the start of T3 the system simulator shall send shall send continuously $TPC_cmd = -1$ (15 times)to the UE.
- i) Repeat steps f)-h) until the confidence level according to Annex F.6.2 is achieved.

8.4.3.2.1.5 Test Requirements

- 1) In step d) and h), the amount of available user data shall be sufficient to allow E-DCH uplink transmission at the highest possible bit rate with E-DCH TB index 58.
- 2) In step g), the UE shall decrease E-TFCI to 0 within 150ms.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108, with the following exceptions:

Table 8.4.3.2.1-3 Contents of RADIO BEARER SETUP message: AM or UM (E-DCH and HSDPA)

Information Element/Group name	Value/Remark
E-PUCH Info(TDD only)	
>E-TFCS information	
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.1
>>>Reference Beta	-15
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.2
>>>Reference Beta	-14
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.3
>>>Reference Beta	-13
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.4
>>>Reference Beta	-12
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.5
>>>Reference Beta	-10
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.6
>>>Reference Beta	-9
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.7
>>>Reference Beta	-8
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.8
>>>Reference Beta	-7
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.9
>>>Reference Beta	-6
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.2
>>>Reference Beta	-9
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.3
>>>Reference Beta	-8
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.4
>>>Reference Beta	-6
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.5
>>>Reference Beta	-5
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.6
>>>Reference Beta	-4
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.7
>>>Reference Beta	-2
>>Reference Beta Information 16QAM	

list	
>>>Reference Code Rate	0.8
>>>Reference Beta	-1
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.9
>>>Reference Beta	0
>CHOICE TDD mode	
>>1.28 Mcps TDD	
>>>PRXdes_base	-85
>>>Beacon PL Est.	
>>>TPC step size	1
>>>E-PUCH TS configuration list	
>>>>TS number	1
>>>>Minimum allowed code rate	0.1
>>>>Maximum allowed code rate	0.8

8.4.3.3 7.68 Mcps option

void

8.5 Timing Characteristics

8.5.1 UE Timing Advance

8.5.1.1 3,84 Mcps TDD Option

8.5.1.1.1 Definition and applicability

Timing advance is the correction to UE transmit timing required in order to avoid large delay spread at the Node B. The timing advance value is provided to the UE by UTRAN.

The requirements and this test apply to the TDD (3,84 Mcps option) UE.

8.5.1.1.2 Minimum requirement

The UE shall adjust the timing of its transmissions with an accuracy better than or equal to ± 0.5 chip to the signalled timing advance value.

The normative reference for this requirement is TS 25.123 [2] clauses 7.1.1. and A.7.1.1

8.5.1.1.3. Test purpose

To verify that the UE meets the minimum requirement.

8.5.1.1.4 Method of test

8.5.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.5.1.1 and table 8.5.1.2. The test consists of two successive time periods, with a time duration of T1 and T2 respectively. At the start of time duration T1, the UE shall transmit with the Uplink Timing Advance value set to zero, i.e. Timing Advance disabled.

During time period T1, UTRAN shall send an Uplink Physical Channel control message with activation time at the beginning of T2. The Uplink Physical Channel Control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T2 is greater than or equal to the RRC procedure delay as defined in [9].

Table 8.5.1.1: General test parameters for Timing Advance test

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Timing Advance value		0	IE "Uplink timing advance control" value disabled.
Final condition	Timing Advance value		5	IE "Uplink timing advance" value set to 5.
Monitored cell list size			6 TDD neighbors on Channel 1	
	T _{SI}	S	1,28	The value shall be used for all cells in the test.
	T1	S	5	
	T2	S	5	

Table 8.5.1.2: Cell specific test parameters for Timing Advance test

Parameter	Unit	Cell 1			
		0		2	
DL timeslot number		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1			
PCCPCH_Ec/I _{or}	dB	-3		n.a.	
SCH_Ec/I _{or}	dB	-9		n.a.	
SCH_offset	dB	0		n.a.	
DPCH_Ec/I _{or}	dB	n.a.		Note 1	
OCNS_Ec/I _{or}	dB	-3,12		Note 2	
\hat{I}_{or}/I_{oc}	dB	3			
I _{oc}	dBm/3,84 MHz	-70			
Propagation Condition		AWGN			
Note 1: The DPCH level is controlled by the power control loop					
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or} .					

8.5.1.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) At the start of time interval T1, the SS shall transmit an UPLINK PHYSICAL CHANNEL CONTROL message with timing advance disabled
- 5) During the interval T1, the SS shall transmit an UPLINK PHYSICAL CHANNEL CONTROL message with timing advance enabled and the timing advance value set to 5.
- 6) UE shall apply the signalled timing advance value.
- 7) After 10 seconds, the UE is switched off.
- 8) Repeat Step 1-7 [TBD] times

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

UPLINK PHYSICAL CHANNEL CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
PhyCH Information elements	
-CCTrCH Power Control Info	Not Present
-Choice <i>TDD Option</i>	3,84 Mcps TDD
-Alpha	Not Present
-Special Burst Scheduling	Not Present
-Timing Advance Control (10.3.6.96)	
-Choice <i>Timing Advance</i>	Disabled
-PRACH Constant Value	Not Present
-PUSCH Constant Value	Not Present
-UE positioning related parameters	Not Present

UPLINK PHYSICAL CHANNEL CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
PhyCH Information elements	
-CCTrCH Power Control Info	Not Present
-Choice <i>TDD Option</i>	3,84 Mcps TDD
-Alpha	Not Present
-Special Burst Scheduling	Not Present
-Timing Advance Control (10.3.6.96)	
-Choice <i>Timing Advance</i>	Enabled
-Choice <i>TDD Option</i>	3,84 Mcps TDD
-UL Timing Advance (10.3.6.9.95)	5
-Activation Time	At T2
-PRACH Constant Value	Not Present
-PUSCH Constant Value	Not Present
-UE positioning related parameters	Not Present

8.5.1.1.5 Test requirements

The UE shall apply the signalled Timing Advance value to the UL DPCH transmission timing at the designated activation time, i.e. the beginning of time period T2. The Timing Advance adjustment accuracy shall be within ± 0.5 chip.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

8.5.1.2 1,28 Mcps TDD Option

8.5.1.2.1 Definition and applicability

Timing advance is applied to adjust the UE transmit time in order to ensure that all the signal received by the BS is synchronised. The timing advance value is provided to the UE by UTRAN.

The requirements and this test apply to the TDD (1.28 Mcps TDD option) UE.

8.5.1.2.2 Minimum requirement

The UE transmitter shall have the capability of changing the transmission timing with a step size of $1/8, 2/8, 3/8, \dots, 1$ chip according to the value of Δ_{SS} , within $n=(1,2,\dots,6)$ time slots excluding special timeslots (DwPTS, GP, UpPTS) after the SS_cmd arrived (closed loop). For the open loop any step being a multiple of $1/8$ chip has to be allowed.

The minimum transmission timing step $\Delta_{SS,min}$ due to closed loop uplink synchronization control shall be within the range shown in Table 8.5.1.1A.

Table 8.5.1.1A: Uplink synchronisation control range

SS_cmd	Uplink synchronisation control range for minimum step	
	1/8 chip step size	
	Lower	Upper
Up	1/9 chip	1/7 chip
Down	1/9 chip	1/7 chip

8.5.1.2.3. Test purpose

The purpose of this test is to verify the ability of the UE to adjust its timing advance according to the SS commands within the specified accuracy defined in TS 25.123 [2] section 7.1.2.

8.5.1.2.4 Method of test

8.5.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.5.1.1A and table 8.5.1.2A.

Table 8.5.1.2A: General test parameters for Timing Advance test

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Monitored cell list size		6 TDD neighbours on Channel 1	

Table 8.5.1.3A: Cell specific test parameters for Timing Advance test

Parameter	Unit	Value	Cell 1
Timeslot Number		0	DwPTS
UTRA RF Channel Number			Channel 1
PCCPCH_Ec/lor	dB	-3	
DwPCH_Ec/lor	dB		0
OCNS_Ec/lor	dB	-3	
\hat{I}_{or}/I_{oc}	dB	6	6
I_{oc}	dBm/ 1.28 MHz		-80
PCCPCH RSCP	dBm	-77	
Propagation Condition			AWGN

8.5.1.2.4.2 Procedure

- 1) The RF parameters are set up according to table 8.5.1.2A..
- 2) Connect the SS to the UE antenna connector as shown in figure A.1.
- 3) A call is set up according to the Generic call setup procedure.
- 4) Enter the UE into loopback test mode and start the loopback test.
See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.
- 5) Configure the uplink channel to set UE transmitter to enable synchronisation steps of size 1/8 chip.
- 6) Send a synchronisation shift (SS) commands with the value "00"(Down)to the UE under test
- 7) Send a synchronisation shift (SS) commands with the value "11"(Up) to the UE under test
- 8) Repeat steps 6-7 until [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

8.5.1.2.5 Test requirements

In step 6 and step 7, The UE transmitter timing due to closed loop uplink synchronization control shall be within the range shown in 8.5.1.4A.

Table 8.5.1.4A: Uplink synchronisation control range

SS_cmd	Lower	Upper
Up	1/9 chip-[TBD]ns	1/7 chip+[TBD]ns
Down	1/9 chip-[TBD]ns	1/7 chip+[TBD]ns

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

8.5.1.3 7,68 Mcps TDD Option

8.5.1.3.1 Definition and applicability

Timing advance is the correction to UE transmit timing required in order to avoid large delay spread at the Node B. The timing advance value is provided to the UE by UTRAN.

The requirements and this test apply to the TDD (7,68 Mcps option) UE.

8.5.1.3.2 Minimum requirement

The UE shall adjust the timing of its transmissions with an accuracy better than or equal to ± 0.5 chip to the signalled timing advance value.

The normative reference for this requirement is TS 25.123 [2] clauses 7.1.3. and A.7.1.3

8.5.1.3.3 Test purpose

To verify that the UE meets the minimum requirement.

8.5.1.3.4 Method of test

8.5.1.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.5.1.3.4.1.1 and table 8.5.1.3.4.1.2. The test consists of two successive time periods, with a time duration of T1 and T2 respectively. At the start of time duration T1, the UE shall transmit with the Uplink Timing Advance value set to zero, i.e. Timing Advance disabled.

During time period T1, UTRAN shall send an Uplink Physical Channel control message with activation time at the beginning of T2. The Uplink Physical Channel Control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T2 is greater than or equal to the RRC procedure delay as defined in [9].

Table 8.5.1.3.4.1.1: General test parameters for Timing Advance test

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Timing Advance value		0	IE "Uplink timing advance" value zero or IE "Uplink timing advance control" value disabled.
Final condition	Timing Advance value		5	IE "Uplink timing advance" value set to 5.
Monitored cell list size			6 TDD neighbors on Channel 1	
	T_{SI}	s	1.28	The value shall be used for all cells in the test.
	T1	s	5	
	T2	s	5	

Table 8.5.1.3.4.1.2: Cell specific test parameters for Timing Advance test

Parameter	Unit	Cell 1			
		0		2	
DL timeslot number		T1	T2	T1	T2
UTRARF Channel Number		Channel 1			
PCCPCH_Ec/lor	dB	-3		n.a.	
SCH_Ec/lor	dB	-9		n.a.	
SCH_t_offset	dB	0		n.a.	
DPCH_Ec/lor	dB	n.a.		Note 1	
OCNS_Ec/lor	dB	-3,12		Note 2	
\hat{I}_{or}/I_{oc}	dB	3			
I_{oc}	dBm/7,68 MHz	-70			
Propagation Condition		AWGN			
Note 1: The DPCH level is controlled by the power control loop					
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor .					

8.5.1.3.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) At the start of time interval T1, the SS shall transmit an UPLINK PHYSICAL CHANNEL CONTROL message with timing advance disabled
- 5) During the interval T1, the SS shall transmit an UPLINK PHYSICAL CHANNEL CONTROL message with timing advance enabled and the timing advance value set to 5.
- 6) UE shall apply the signalled timing advance value.
- 9) After 10 seconds, the UE is switched off.
- 10) Repeat Step 1-7 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

UPLINK PHYSICAL CHANNEL CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
PhyCH Information elements	
-CCTrCH Power Control Info	Not Present
-Choice <i>TDD Option</i>	7,68 Mcps TDD
-Alpha	Not Present
-Special Burst Scheduling	Not Present
-Timing Advance Control (10.3.6.96)	
-Choice <i>Timing Advance</i>	Disabled
-PRACH Constant Value	Not Present
-PUSCH Constant Value	Not Present
-UE positioning related parameters	Not Present
-HS-SICH power control info	Not Present

UPLINK PHYSICAL CHANNEL CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
PhyCH Information elements	
-CCTrCH Power Control Info	Not Present
-Choice <i>TDD Option</i>	7,68 Mcps TDD
-Alpha	Not Present
-Special Burst Scheduling	Not Present
-Timing Advance Control (10.3.6.96)	
-Choice <i>Timing Advance</i>	Enabled
-Choice <i>TDD Option</i>	7,68 Mcps TDD
-Extended UL Timing Advance (10.3.6.9.95a)	10
-Activation Time	At T2
-PRACH Constant Value	Not Present
-PUSCH Constant Value	Not Present
-UE positioning related parameters	Not Present

8.5.1.3.5 Test requirements

The UE shall apply the signalled Timing Advance value to the UL DPCH transmission timing at the designated activation time, i.e the beginning of time period T2. The Timing Advance adjustment accuracy shall be within ± 0.5 chip.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

8.5.2 UE Transmit Timing

Void.

8.5.3 UE Uplink Synchronization

8.5.3.1 3,84 Mcps TDD option

Void.

8.5.3.2 1,28 Mcps TDD option

8.5.3.2.1 Uplink synchronization control for PRACH

8.5.3.2.1.1 Definition and applicability

The establishment of uplink synchronization is done during the random access procedure and involves the UpPCH and the PRACH. To update timing advance of a UE, the UTRAN measures SYNC-UL Timing deviation. Uplink synchronization control for PRACH is used to adjust its synchronisation shift by means of signalling the received position of the UpPTS in the FPA CH.

The random access is specified in clause 5.6 of TS 25.224 and the random access transmit sequence is described in clause 6.7.3.2 of TS 25.303 and the uplink synchronization control for PRACH is defined in clause 5.2 of TS25.224.

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.5.3.2.1.2 Minimum requirement

The time of the beginning of the PRACH $T_{TX-PRACH}$ is given by:

$$T_{TX-PRACH} = T_{RX-PRACH} - (UpPCH_{ADV} + UpPCH_{POS} - 8 * 16 T_C)$$

in multiple of 1/8 chips.

Then the timing advance for PRACH is given by:

$$T_{ADV-PRACH} = T_{RX-PRACH} - T_{TX-PRACH} = (UpPCH_{ADV} + UpPCH_{POS} - 8 * 16 T_C)$$

$T_{TX-PRACH}$ is the beginning time of PRACH transmission with the UE's timing,

$T_{RX-PRACH}$ is the beginning time of PRACH reception with the UE's timing if the PRACH was a DL channel.

$UpPCH_{POS}$ is the received SYNC-UL timing deviation measured by UTRAN.

$UpPCH_{ADV}$ is the timing advance of SYNC-UL given by UE.

The uplink synchronization accuracy for PRACH is defined as PRACH timing deviation between received PRACH position and desired PRACH position. The accuracy requirements of uplink synchronization control for PRACH are decided by the accuracy of UpPCH timing advance $UpPCH_{ADV}$ measured by UE and the accuracy of SYNC-UL timing deviation $UpPCH_{POS}$ measured by UTRAN, which refer to clause 9.1.2.2 and clause 9.2.1.10 of TS 25.123.

Table 8.5.3.2.1.1: Uplink synchronisation control accuracy requirements for PRACH

Parameter	Unit	Accuracy [chip]	Conditions
			I_0 [dBm/ 1.28 MHz]
Uplink synchronization control for PRACH	chip	+/- 0.5	-94...-50

8.5.3.2.1.3 Test purpose

The purpose of this test is to verify the ability of the UE to archive its uplink synchronization control for PRACH within the specified accuracy according to the requirements.

8.5.3.2.1.4 Method of test

8.5.3.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2

Frequencies to be tested: mid range; see clause G.2.4.

Table 8.5.3.2.1.2: RF Parameters for Random Access test

Parameter	Unit	Cell 1
UTRA RF Channel Number		Channel 1
PCCPCH_Ec/I _{or}	dB	-3
OCNS_Ec/I _{or}	dB	-3
\hat{I}_{or}/I_{oc}	dB	10
I_{oc}	dBm/1.28 MHz	-70
PCCPCH_RSCP	dBm/1.28MHz	-63
Propagation Condition		AWGN

The test parameters "System Information Block (SIB) type 5 (ASC #0)" defined in clause 6.1 of TS 34.108, shall be used in all random access tests. Crucial parameters for the test requirements are repeated in tables 8.5.3.2.1.3 and these overrule the parameters defined in SIB type 5. A parameter of AC-to-ASC mapping (AC0-9) in SIB5 of clause 6.1 of TS 34.108 shall be set to 0 in the case of all random access tests.

Table 8.5.3.2.1.3: UE/SS parameters for Random Access test

Parameter	Unit	Value
Access Service Class (ASC#0)	0..1	1
- Persistence value		
PCCPCH Power -Broadcast	dB	18
Max SYNC_UL Transmissions		8
Power step when no acquisition indicator is received (Pwr _{ramp})	dB	1
Maximum allowed UL TX power	dBm	21
Desired UpPCH RX power at the cell's receiver (PRX _{UpPCHdes})	dBm	-100

8.5.3.2.1.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to Table 8.5.3.2.1.2, and Table 8.5.3.2.1.3, set the value of Pwr_{ramp} as 1dB.
- 2) The PRACH procedure within the call setup is used for the test. It is necessary that an ACK on FPACH with correct UpPCH_{POS} shall be transmitted by the SS.
- 3) Measure the first PRACH timing position and calculate the timing deviation between received PRACH position and desired PRACH position. If PRACH timing deviation fulfills test requirement in Table 8.5.3.2.1.4, the correct counter is accumulated by 1. Otherwise the incorrect counter is accumulated by 1.
- 4) The call procedure is set up successfully and SS release RRC connection.

8.5.3.2.1.5 Test requirements

The UE shall not exceed the accuracy requirements as Table 8.5.3.2.1.4.

Table 8.5.3.2.1.4: Uplink synchronisation control accuracy requirements for PRACH

Parameter	Unit	Accuracy [chip]	Conditions
			I _o [dBm/ 1.28 MHz]
Uplink synchronization control for PRACH	chip	+/- 0.5	-94...-50

The rate of correct uplink synchronisation control observed during repeated tests shall be at least 90%.

8.5.3.2.2 Uplink synchronization control during handover

8.5.3.2.2.1 Scenario 1: Handover to intra-frequency cell

This test case is applicable for UE handovers in single frequency network and UE handovers from primary frequency to primary frequency in multi-frequency network.

8.5.3.2.2.1.1 Definition and applicability

The closed loop uplink synchronisation control uses layer 1 symbols (SS commands) for DPCH and PUSCH. After establishment of the uplink synchronisation, NodeB and UE start to use the closed loop UL synchronisation control procedure. This procedure is continuous during connected mode.

During a handover the UE shall transmit in the new cell with timing advance TA adjusted by the relative timing difference Δt between the new and the old cell if indicated by higher layers:

$$TA_{\text{new}} = TA_{\text{old}} + 2\Delta t.$$

TA_{new} is the timing advance of the new cell.

TA_{old} is the timing advance of the old cell,

Δt is the relative timing difference between the new and the old cell, which is measured by UE as SFN-SFN observed time difference type 2.

The uplink synchronization accuracy during handover is defined as timing deviation between the initial actual uplink synchronization position and the desired position of the first uplink DPCH on the target cell.

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.5.3.2.2.1.2 Minimum requirement

The UE shall not exceed the accuracy requirements as Table 8.5.3.2.2.1.

Table 8.5.3.2.2.1: Uplink synchronisation control accuracy requirements

Parameter	Unit	Accuracy [chip]	Conditions
			I_0 [dBm/ 1.28 MHz]
Uplink synchronization control during handover	chip	+/- 0.5	-94...-50

The rate of correct uplink synchronisation control observed during repeated tests shall be at least 90% with a confidence level of 95%.

8.5.3.2.2.1.3 Test purpose

The purpose of this test is to verify the requirement for the uplink synchronization control during intra-frequency handover in CELL_DCH state in minimum requirement .

8.5.3.2.2.1.4 Initial conditions

The test parameters are given in Table 8.5.3.2.2.2 and 8.5.3.2.2.3 as below. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time "now" at the beginning of T3 with a new active cell, cell 2, after the UE has reported event 1G. The starting point of T3 is defined as the end of the last TTI containing the physical channel reconfiguration message.

Table 8.5.3.2.2.2: General test parameters for intra-frequency handover

Parameter		Unit	Value	Comment
DPCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2.2 and A.2.1.2
Power Control			On	
Target quality value on DPCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	In the case of multi-frequency network, the UE has a RRC connection on the primary frequency in cell 1.
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	In the case of multifrequency network, UE will handover to the primary frequency in cell 2.
O		dB	0	cell-individual-offset The value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	
T1		s	5	
T2		s	5	
T3		s	5	

Table 8.5.3.2.2.3: Cell specific test parameters for intra-frequency handover

Parameter	Unit	Cell 1								
		0			DwPTS			5		
Timeslot Number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number(Note3)		Channel 1								
PCCPCH_Ec/I _{or}	dB	-3						n.a.		
DwPCH_Ec/I _{or}					0					
DPCH_Ec/I _{or}	dB	n.a.			n.a.			Note1	n.a.	
OCNS_Ec/I _{or}	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	3			3			3		
I_{oc}	dBm/ 1.28 MHz	-70								
PCCPCH_RSCP	dBm	-70			n.a.			n.a.		
Propagation Condition		AWGN								
Parameter	Unit	Cell 2								
Timeslot Number		0			DwPTS			5		
Timeslot Number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number(Note3)		Channel 1								
PCCPCH_Ec/I _{or}	dB	-3						n.a.		
DwPCH_Ec/I _{or}					0					
DPCH_Ec/I _{or}	dB	n.a.			n.a.			n.a.	Note1	
OCNS_Ec/I _{or}	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	-Inf.	6		-Inf.	6		-Inf.	6	
I_{oc}	dBm/ 1.28 MHz	-70								
PCCPCH_RSCP	dBm	-Inf.	-67		n.a.			n.a.		
Propagation Condition		AWGN								
Note 1: The DPCH level is controlled by the power control loop										
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or} .										
Note 3: In the case of multi-frequency network, the UTRA RF Channel Number is the primary frequency's channel number.										

8.5.3.2.2.1.5 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time "now".
- 8) After 5 seconds, the SS shall switch the power settings from T2 to T3
- 9) The UE transmits the UL DPCH to cell 2 less than 1 s from the beginning of time period T3 and UTRAN measures the initial uplink synchronization timing position of the first UL DPCH on cell2 and compares it with the desired position. If the timing deviation is less than the accuracy requirement as specified in Table 8.5.3.2.2.4, the number of successful tests is increased by one. And UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.
- 10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	TRUE (Note 1)
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	TRUE (Note 1)
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

Information Element/Group name	Value/Remark
Note 1:	The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.
Note 2:	Reporting interval = 0 ms means no periodical reporting

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	30 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	TDD
- <i>TDD</i>	1,28 Mcps TDD
-UL target SIR	Not Present
-CHOICE <i>UL OL PC info</i>	Individually signalled
-CHOICE <i>TDD option</i>	
--1,28 Mcps TDD	1
-TPC step size	1
-CHOICE <i>mode</i>	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
-UL Target SIR	9 dB
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	2
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-Choice <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots
Downlink radio resources	
-CHOICE <i>mode</i>	TDD

Information Element	Value/Remark
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE <i>mode</i>	TDD
-TPC Step size	1 dB
-CHOICE <i>mode</i>	TDD
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
- <i>TSTD indicator</i> (10.3.6.85a)	TRUE
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
<i>TSTD indicator</i>	TRUE
-Cell parameters ID	0
-SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	TDD
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot channelisation codes (10.3.6.17)	
-CHOICE <i>codes representation</i>	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/2
-CHOICE <i>more timeslots</i>	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.5.3.2.2.1.6 Test requirements

The UE shall not exceed the accuracy requirements as Table 8.5.3.2.2.4.

Table 8.5.3.2.2.4: Uplink synchronisation control accuracy requirements

Parameter	Unit	Accuracy [chip]	Conditions
			I_0 [dBm/ 1.28 MHz]
Uplink synchronization control during handover	chip	+/- 0.5	-94...-50

The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95%.

8.5.3.2.2.2 Scenario 2: Handover to inter-frequency cell

This test case is applicable for UE handovers in single frequency network and UE handovers from primary frequency to secondary frequency in multi-frequency network.

8.5.3.2.2.2.1 Definition and applicability

The closed loop uplink synchronisation control uses layer 1 symbols (SS commands) for DPCH and PUSCH. After establishment of the uplink synchronisation, NodeB and UE start to use the closed loop UL synchronisation control procedure. This procedure is continuous during connected mode.

During a handover the UE shall transmit in the new cell with timing advance TA adjusted by the relative timing difference Δt between the new and the old cell if indicated by higher layers:

$$TA_{\text{new}} = TA_{\text{old}} + 2\Delta t.$$

TA_{new} is the timing advance of the new cell.

TA_{old} is the timing advance of the old cell,

Δt is the relative timing difference between the new and the old cell, which is measured by UE as SFN-SFN observed time difference type 2.

The uplink synchronization accuracy during handover is defined as timing deviation between the initial actual uplink synchronization position and the desired position of the first uplink DPCH on the target cell.

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.5.3.2.2.2.2 Minimum requirement

The UE shall not exceed the accuracy requirements as Table 8.5.3.2.2.5.

Table 8.5.3.2.2.5: Uplink synchronisation control accuracy requirements

Parameter	Unit	Accuracy [chip]	Conditions
			I_0 [dBm/ 1.28 MHz]
Uplink synchronization control during handover	chip	+/- 0.5	-94...-50

The rate of correct uplink synchronisation control observed during repeated tests shall be at least 90% with a confidence level of 95%.

8.5.3.2.2.1.3 Test purpose

The purpose of this test is to verify the requirement for the uplink synchronization control during intra-frequency handover in CELL_DCH state in minimum requirement .

8.5.3.2.2.2.4 Initial conditions

The test parameters are given in Table 8.5.3.2.2.6 and 8.5.3.2.2.7 as below. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time "now" at the beginning of T3 with a new active cell, cell 2, after the UE has reported event 1G. The starting point of T3 is defined as the end of the last TTI containing the physical channel reconfiguration message.

Table 8.5.3.2.2.6: General test parameters for inter-frequency handover

Parameter		Unit	Value	Comment
DPCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2.2 and A.2.1.2
Power Control			On	
Target quality value on DPCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	The UE has a RRC connection on the secondary frequency in cell 1.
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	The UE will handover to the primary frequency in cell 2.
Threshold non used frequency		dBm	-75	Absolute RSCP threshold for event 2C
O		dB	0	cell-individual-offset The value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		s	5	
T2		s	10	
T3		s	5	

Table 8.5.3.2.2.7: Cell Specific parameters for inter-frequency handover

Parameter	Unit	Cell 1								
		0			DwPTS			5		
Timeslot Number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number(Note 3)		Channel 1								
UTRA RF Channel Number(Note 4)		Channel 2								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor					0					
DPCH_Ec/lor	dB	n.a.			n.a.			Note1	n.a.	
OCNS_Ec/lor	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	3			3			3		
I_{oc}	dBm/ 1.28 MHz	-70								
PCCPCH_RSCP	dBm	-70			n.a.			n.a.		
Propagation Condition		AWGN								
Parameter	Unit	Cell 2								
Timeslot Number		0			DwPTS			5		
Timeslot Number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number(Note 3)		Channel 1								
UTRA RF Channel Number(Note 4)		Channel 2								
PCCPCH_Ec/lor	dB	-3						n.a.		
DwPCH_Ec/lor					0					
DPCH_Ec/lor	dB	n.a.			n.a.			n.a.	Note1	
OCNS_Ec/lor	dB	-3						Note2		
\hat{I}_{or}/I_{oc}	dB	-Inf.	4		-Inf.	4		-Inf.	4	
I_{oc}	dBm/ 1.28 MHz	-70								
PCCPCH_RSCP	dBm	-Inf.	-69		n.a.			n.a.		
Propagation Condition		AWGN								
Note 1: The DPCH level is controlled by the power control loop										
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} .										
Note3: The UTRA RF Channel Number is the primary frequency's channel number.										
Note4: The UTRA RF Channel Number is the secondary frequency's channel number.										

8.5.3.2.2.2.5 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time "now".
- 8) After 10 seconds, the SS shall switch the power settings from T2 to T3
- 9) The UE transmits the UL DPCH to cell 2 less than 1 s from the beginning of time period T3 and UTRAN measures the initial uplink synchronization timing position of the first UL DPCH on cell2 and compares it with the desired position. If the timing deviation is less than the accuracy requirement as specified in Table

8.5.3.2.2.4, the number of successful tests is increased by one. And UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.

10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat steps 1-10 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	TRUE (Note 1)
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	TRUE (Note 1)
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

Information Element/Group name	Value/Remark
Note 1:	The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.
Note 2:	Reporting interval = 0 ms means no periodical reporting

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	30 dBm
-CHOICE <i>channel requirement</i>	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE <i>mode</i>	TDD
- <i>TDD</i>	1,28 Mcps TDD
-UL target SIR	Not Present
-CHOICE <i>UL OL PC info</i>	Individually signalled
-CHOICE <i>TDD option</i>	
--1,28 Mcps TDD	1
-TPC step size	1
-CHOICE <i>mode</i>	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
-UL Target SIR	9 dB
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	2
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-Choice <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots
Downlink radio resources	
-CHOICE <i>mode</i>	TDD

Information Element	Value/Remark
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE <i>mode</i>	TDD
-TPC Step size	1 dB
-CHOICE <i>mode</i>	TDD
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
- <i>TSTD indicator</i> (10.3.6.85a)	TRUE
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps
<i>TSTD indicator</i>	TRUE
-Cell parameters ID	0
-SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE <i>mode</i>	TDD
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	now
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE <i>TDD option</i>	1,28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE <i>TDD option</i>	1,28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot channelisation codes (10.3.6.17)	
-CHOICE <i>codes representation</i>	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/2
-CHOICE <i>more timeslots</i>	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency TDD test cases in clause 8.7 and is described in Annex I.

8.5.3.2.2.2.6 Test requirements

The UE shall not exceed the accuracy requirements as Table 8.5.3.2.2.8.

Table 8.5.3.2.2.8: Uplink synchronisation control accuracy requirements

Parameter	Unit	Accuracy [chip]	Conditions
			I_0 [dBm/ 1.28 MHz]
Uplink synchronization control during handover	chip	+/- 0.5	-94...-50

The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95%.

8.5.3.3 7.68 Mcps TDD option

Void.

8.6 UE Measurements Procedures

8.6.1 TDD intra frequency measurements

8.6.1.1 Event 1G triggered reporting in AWGN propagation conditions

8.6.1.1.1 Definition and applicability

8.6.1.1.1.1 3,84 Mcps TDD Option

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD (3,84 Mcps option) UE.

8.6.1.1.1.2 1,28 Mcps TDD Option

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the 1.28 Mcps option TDD UE.

8.6.1.1.1.3 7,68 Mcps TDD Option

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD (7,68 Mcps option) UE.

8.6.1.1.2 Minimum requirement

8.6.1.1.2.1 3,84 Mcps TDD Option

The UE shall be able to identify a new detectable intra-frequency TDD cell belonging to the monitored set within $T_{\text{identify intra}}$ ms, where $T_{\text{identify intra}} = 800$ ms.

When L3 filtering is used, an additional delay can be expected.

In CELL_DCH state, the UE shall be capable of performing P-CCPCH RSCP measurements for $X_{\text{measurement intra}}$ identified intra-frequency TDD cells of the monitored set with a measurement period for intra-frequency P-CCPCH RSCP measurements $T_{\text{measurement period intra}}$, where

$$X_{\text{measurement intra}} = 6 \text{ (cells)}$$

$$T_{\text{measurement period intra}} = 200 \text{ ms}$$

The UE physical layer shall be capable of reporting these measurements to higher layers with the measurement period $T_{\text{measurement period intra}}$.

If the UE has identified more than $X_{\text{measurement intra}}$ intra-frequency TDD cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH RSCP measurements of cells from the UE physical layer to higher layers may be decreased.. The measurement accuracy for all measured cells shall be as specified in the section 9.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.1, 8.1.2.2.2 and A.8.1.1

8.6.1.1.2.2 1,28 Mcps TDD Option

The UE shall be able to identify a new intra frequency TDD cell belonging to the monitored set within

$$T_{\text{identify intra}} = T_{\text{basic identify TDD, intra}} \cdot \frac{N_{\text{Period, Intra}}}{N_{\text{Intra}}} \text{ ms}$$

$T_{\text{basic_identify_TDD, intra}} = 800$ ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new TDD cell is defined.

$N_{\text{Period, Intra}} = 40$ Number of subframes in $T_{\text{Measurement_Period, Intra}}$.

N_{Intra} : This is the minimum number of sub-frame in that the period of TS0, DwPTS and main guard period is available for intra frequency measurements, during the measurement period.

$T_{\text{Measurement_Period, Intra}} = 200$ ms. The measurement period for Intra frequency P-CCPCH RSCP measurements.

If a cell belonging to monitored set has been detectable at least for the time period $T_{\text{identify intra}}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than 200ms when the L3 filter has not been used and the UE P-CCPCH measurement capabilities of Section 8.1A.2.2.2 in [2] are valid.

The event triggered measurement reporting delay on cells not belonging to monitored set, measured without L3 filtering, shall be less than the above defined $T_{\text{identify detected set}}$.

8.6.1.1.2.3 7,68 Mcps TDD Option

The UE shall be able to identify a new detectable intra-frequency TDD cell belonging to the monitored set within $T_{\text{identify intra}}$ ms, where $T_{\text{identify intra}} = 800$ ms.

When L3 filtering is used, an additional delay can be expected.

In CELL_DCH state, the UE shall be capable of performing P-CCPCH RSCP measurements for $X_{\text{measurement intra}}$ identified intra-frequency TDD cells of the monitored set with a measurement period for intra-frequency P-CCPCH RSCP measurements $T_{\text{measurement period intra}}$, where

$X_{\text{measurement intra}} = 6$ (cells)

$T_{\text{measurement period intra}} = 200$ ms

The UE physical layer shall be capable of reporting these measurements to higher layers with the measurement period $T_{\text{measurement period intra}}$.

If the UE has identified more than $X_{\text{measurement intra}}$ intra-frequency TDD cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH RSCP measurements of cells from the UE physical layer to higher layers may be decreased.. The measurement accuracy for all measured cells shall be as specified in the section 9.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1B.2.2.1, 8.1B.2.2.2 and A.8.1.1

8.6.1.1.3 Test purpose

8.6.1.1.3.1 3,84 Mcps TDD Option

To verify that the UE meets the minimum requirement.

8.6.1.1.3.2 1,28 Mcps TDD Option

To verify the UE meets the minimum requirements.

8.6.1.1.3.3 7,68 Mcps TDD Option

To verify the UE meets the minimum requirements.

8.6.1.1.4 Method of test

8.6.1.1.4.1 3,84 Mcps TDD Option

8.6.1.1.4.1.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.6.1.1.1 and 8.6.1.1.2. The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively. Three cells shall be present in the test, cell 1 being the serving cell and cell 2 and cell 3 being neighbour cells on the used frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 2 and the UL DPCH shall be transmitted in timeslot 10. The TTI of the uplink DCCH shall be 20ms.

Table 8.6.1.1.1: General test parameters for Event 1G triggered reporting in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	
	Neighbour cell	Cell 2, Cell 3	
Final condition	Active cell	Cell 1	
O	dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Threshold used frequency	dBm	-70	Applicable for Event 1G
Filter coefficient		0	
Monitored cell list size		12 TDD neighbours on Channel 1	
T1	s	6	
T2	s	6	
T3	s	6	

Table 8.6.1.1.2: Cell specific parameters for Event 1G triggered correct reporting in AWGN propagation condition

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
DL timeslot number		0			0			0		
UTRA RF Channel Number		Channel 1			Channel 1			Channel 1		
PCCPCH_Ec/lor	dB	-3			-3			-3		
SCH_Ec/lor	dB	-9			-9			-9		
SCH_t _{offset}		0			5			10		
OCNS_Ec/lor	dB	-3,12			-3,12			-3,12		
\hat{I}_{or}/I_{oc}	dB	7	5		5	7	-Inf	-Inf		7
PCCPCH RSCP	dBm	-66	-68		-68	-66	-Inf	-Inf		-66
I_{oc}	dBm / 3,84 MHz	-70								
Propagation Condition		AWGN								

8.6.1.1.4.1.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 6 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 240 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 6 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 3. The measurement reporting delay from the beginning of T3 shall be less than 840 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 9) After 6 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 10) Repeat steps 1-9 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	FALSE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 2

MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 3
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 3

8.6.1.1.4.2 1,28 Mcps TDD Option

Test environment : normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested : mid range ;see clauses G.2.4.

The test parameters are given in Table 8.6.1.1.4A and 8.6.1.1.4B below. The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively. Three cells shall be present in the test, cell 1 being the serving cell and cell 2 and cell 3 being neighbour cells on the used frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G reporting. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9]. The cell specific test parameters are given in Table 8.6.1.1B below.

The TTI of the uplink DCCH shall be 40ms.

Table 8.6.1.1.4A: General test parameters for Event 1G triggered reporting in AWGN propagation condition 1,28Mcps option

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Active cell		Cell 1	
Neighbour cell		Cell 2, Cell 3	
O	DB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis	DB	0	
Time to Trigger	Ms	0	
Filter coefficient		0	
Monitored cell list size		12 TDD neighbours on Channel 1	
T1	S	6	
T2	S	6	
T3	S	6	

Table 8.6.1.1.4B: Cell specific parameters for Event 1G triggered correct reporting in AWGN propagation condition 1,28 Mcps option

Parameter	Unit	Cell 1						Cell 2						Cell 3					
		0			DwPTS			0			DwPTS			0			DwPTS		
		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1						Channel 1						Channel 1					
PCCPCH_Ec/lor	dB	-3						-3						-3					
DwPCH_Ec/lor	dB				0						0						0		
OCNS_Ec/lor	dB	-3						-3						-3					
\hat{I}_{or}/I_{oc}	dB	7	4		7	4		4	7	-Inf	4	7	-Inf		-Inf	7		-Inf	7
PCCPCH RSCP	dBm	-66	-69					-69	-66	-Inf					-Inf	-66			
I_{oc}	dBm / 1,28 MHz	-70																	
Propagation Condition		AWGN																	

NOTE: The DPCH of all cells are located in a timeslot other than 0.

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 6 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 6 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 3. The measurement reporting delay from the beginning of T3 shall be less than 880 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 9) After 6 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 10) Repeat steps 1-9 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	FALSE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE TDD Option	1.28 Mcps TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 2

MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 3
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE TDD Option	1.28 Mcps TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 3

8.6.1.1.4.3 7,68 Mcps TDD Option

8.6.1.1.4.3.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.6.1.1.4.3.1.1 and 8.6.1.1.4.3.1.2. The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively. Three cells shall be present in the test, cell 1 being the serving cell and cell 2 and cell 3 being neighbour cells on the used frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 2 and the UL DPCH shall be transmitted in timeslot 10. The TTI of the uplink DCCH shall be 20ms.

Table 8.6.1.1.4.3.1.1: General test parameters for Event 1G triggered reporting in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	
	Neighbour cell	Cell 2, Cell 3	
Final condition	Active cell	Cell 1	
O	dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Threshold used frequency	dBm	-70	Applicable for Event 1G
Filter coefficient		0	
Monitored cell list size		12 TDD neighbours on Channel 1	
T1	s	6	
T2	s	6	
T3	s	6	

Table 8.6.1.1.4.3.1.2: Cell specific parameters for Event 1G triggered correct reporting in AWGN propagation condition

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
DL timeslot number		0			0			0		
UTRA RF Channel Number		Channel 1			Channel 1			Channel 1		
PCCPCH_Ec/lor	dB	-3			-3			-3		
SCH_Ec/lor	dB	-9			-9			-9		
SCH_t _{offset}		0			5			10		
OCNS_Ec/lor	dB	-3,12			-3,12			-3,12		
\hat{I}_{or}/I_{oc}	dB	7	5		5	7	-Inf	-Inf	7	
PCCPCH RSCP	dBm	-66	-68		-68	-66	-Inf	-Inf	-66	
I_{oc}	dBm / 7,68 MHz	-70								
Propagation Condition		AWGN								

8.6.1.1.4.3.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 6 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 240 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 6 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 3. The measurement reporting delay from the beginning of T3 shall be less than 840 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 9) After 6 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 10) Repeat steps 1-9 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	FALSE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	7,68 Mcps TDD
-CHOICE <i>Sync case</i>	2
-Timeslot	0
-Cell parameters ID	0
-SCTD indicator	FALSE
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms

Information Element/Group name	Value/Remark
-Amount of reporting -Reporting interval -Reporting cell status	Infinity 0 ms (Note 1) Not Present
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE TDD option	7,68 Mcps TDD
-CHOICE Sync case	Not present
-Cell parameters ID	Set to Cell parameters ID of Cell 2
-SCTD indicator	FALSE

MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 3
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE TDD option	7,68 Mcps TDD
-CHOICE Sync case	Not Present
-Cell parameters ID	Set to Cell parameters ID of Cell 3
-SCTD indicator	FALSE

8.6.1.1.5 Test requirements

8.6.1.1.5.1 3,84 Mcps TDD Option

The UE shall send one Event 1G triggered measurement report for Cell 2 with a measurement reporting delay less than 240ms from the beginning of time period T2.

The UE shall send one Event 1G triggered measurement report for Cell 3 with a measurement reporting delay less than 840ms from the beginning of time period T3.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

8.6.1.1.5.2 1,28 Mcps TDD Option

The UE shall send one Event 1G triggered measurement report for Cell 2 with a measurement reporting delay less than 280ms from the beginning of time period T2.

The UE shall send one Event 1G triggered measurement report for Cell 3 with a measurement reporting delay less than 880ms from the beginning of time period T3.

The UE shall not send any incorrect event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

8.6.1.1.5.3 7,68 Mcps TDD Option

The UE shall send one Event 1G triggered measurement report for Cell 2 with a measurement reporting delay less than 240ms from the beginning of time period T2.

The UE shall send one Event 1G triggered measurement report for Cell 3 with a measurement reporting delay less than 840ms from the beginning of time period T3.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

8.6.1.2 Event 1H and 1I triggered reporting in AWGN propagation condition

8.6.1.2.1 Definition and applicability

8.6.1.2.1.1 3,84 Mcps TDD Option

In the event triggered reporting, the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD (3,84 Mcps option) UE.

8.6.1.2.1.2 1,28 Mcps TDD Option

The purpose of this test is to verify that the UE makes correct reporting of events 1H (timeslot ISCP below threshold) and 1I (timeslot ISCP above threshold). This test will partly verify the requirements in [2]

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.6.1.2.1.3 7,68 Mcps TDD Option

In the event triggered reporting, the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD (7,68 Mcps option) UE.

8.6.1.2.2 Minimum requirement

8.6.1.2.2.1 3,84 Mcps TDD Option

In CELL_DCH state the measurement period for intra frequency Timeslot ISCP measurements on arbitrary DL timeslots, including Beacon timeslots is 400 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing Timeslot ISCP measurements for a total of 10 different combinations of an arbitrary DL timeslot and an intra-frequency cell, including the current serving cell.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.2.A and A.8.1.2

8.6.1.2.2.2 1,28 Mcps TDD Option

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T2 as defined in the test method below.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T3 as defined in the test method below.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T4 as defined in the test method below.

8.6.1.2.2.3 7,68 Mcps TDD Option

In CELL_DCH state the measurement period for intra frequency Timeslot ISCP measurements on arbitrary DL timeslots, including Beacon timeslots is 400 ms. When no inter frequency measurement is scheduled, the UE shall be

capable of performing Timeslot ISCP measurements for a total of 10 different combinations of an arbitrary DL timeslot and an intra-frequency cell, including the current serving cell.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1B.2.2.3 and A.8.1.2

8.6.1.2.3 Test purpose

8.6.1.2.3.1 3,84 Mcps TDD Option

To verify that the UE meets the minimum requirement.

8.6.1.2.3.2 1,28 Mcps TDD Option

To verify that the UE meets the minimum requirements.

8.6.1.2.3.3 7,68 Mcps TDD Option

To verify that the UE meets the minimum requirements.

8.6.1.2.4 Method of test

8.6.1.2.4.1 3,84 Mcps TDD Option

8.6.1.2.4.1.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Tables 8.6.1.2.1, 8.6.1.2.2 and 8.6.1.2.3. The test consists of five successive time periods, with a time duration of T1, T2, T3, T4 and T5 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

In the measurement control information it shall be indicated to the UE that event-triggered reporting with event 1H and event 1I shall be used and that Timeslot ISCP and P-CCPCH RSCP shall be reported together with event 1H and 1I. Measurement control information shall be sent to the UE before the beginning of time period T1.

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 10. In addition, timeslots 3 and 4 shall be allocated as DL timeslots. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.6.1.2.1: General test parameters for correct event 1H and event 1I reporting in AWGN propagation condition

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 1	
HCS			Not used	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Timeslot list cell 1			2, 3, 4	Timeslot numbers in IE "Cell info" for Cell 1
Timeslot list cell 2			4	Timeslot numbers in IE "Cell info" for Cell 2
Threshold used frequency		dBm	-68	Threshold 1 applicable for event 1H, cell 1 timeslots 2, 4 and cell 2 timeslot 4
Threshold used frequency		dBm	-73	Threshold 2 applicable for event 1H, cell 1 timeslots 2, 3, 4 and cell 2 timeslot 4
Threshold used frequency		dBm	-67	Applicable for event 1I, cell 1 timeslots 2, 4 and cell 2 timeslot 4
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	Cell 2 shall belong to the monitored set
T1		s	5	
T2		s	5	
T3		s	5	
T4		s	5	
T5		s	5	

Table 8.6.1.2.2: Cell 1 specific parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit	Cell 1									
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRARF Channel Number		Channel 1									
DL timeslot number		0					2				
PCCPCH_Ec/lor	dB	-3					n.a.				
SCH_Ec/lor	dB	-9					n.a.				
SCH_t _{offset}	dB	5					n.a.				
DPCH_Ec/lor	dB	n.a.					Note 1				
OCNS_Ec/lor	dB	-3,12					Note 2				
\hat{I}_{or}/I_{oc}	dB	4					4				
PCCPCH RSCP	dBm	-69					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
DL timeslot number		3					4				
PCCPCH_Ec/lor	dB	n.a.					n.a.				
SCH_Ec/lor	dB	n.a.					n.a.				
SCH_t _{offset}	dB	n.a.					n.a.				
DPCH_Ec/lor	dB	n.a.					n.a.				
OCNS_Ec/lor	dB	0					0				
\hat{I}_{or}/I_{oc}	dB	3					0			6	
PCCPCH RSCP	dBm	n.a.					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
Note 1: The DPCH level is controlled by the power control loop											
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor											

Table 8.6.1.2.3: Cell 2 specific parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit	Cell 2									
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRARF Channel Number		Channel 1									
DL timeslot number		0					2				
PCCPCH_Ec/lor	dB	-3					n.a.				
SCH_Ec/lor	dB	-9					n.a.				
SCH_t _{offset}	dB	10					n.a.				
DPCH_Ec/lor	dB	n.a.					n.a.				
OCNS_Ec/lor	dB	-3,12					0				
\hat{I}_{or}/I_{oc}	dB	1					0	6	0		
PCCPCH RSCP	dBm	-72					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
DL timeslot number		3					4				
PCCPCH_Ec/lor	dB	n.a.					n.a.				
SCH_Ec/lor	dB	n.a.					n.a.				
SCH_t _{offset}	dB	n.a.					n.a.				
DPCH_Ec/lor	dB	n.a.					n.a.				
OCNS_Ec/lor	dB	0					0				
\hat{I}_{or}/I_{oc}	dB	3					6			0	
PCCPCH RSCP	dBm	n.a.					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									

8.6.1.2.4.1.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T2 shall be less than 480 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 9) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4.
- 10) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 11) After 5 seconds from the beginning of T4, the SS shall switch the power settings from T4 to T5.
- 12) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 2 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 13) After 5 seconds from the beginning of T5, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 14) Repeat steps 1-13 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	Not Present
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	0
-Filter coefficient (10.3.7.9)	TDD
-CHOICE <i>mode</i>	1
-Measurement quantity list	Timeslot ISCP
-Measurement quantity	
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	TRUE
-Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	TRUE
-Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	-68
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present

Information Element/Group name	Value/Remark
-W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Not Present 0 dB -73 Not Present Not Present 0 ms Infinity 0 ms (Note 1) Not Present
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Event 11 Not Present Not Present Not Present Not Present 0 dB -67 Not Present Not Present 0 ms Infinity 0 ms (Note 1) Not Present
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	Not Present
Integrity check info	1
Measurement identity	1
Measured Results (10.3.7.44)	Intra-frequency Measured results list
-CHOICE Measurement	1
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	11
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1H
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

MEASUREMENT REPORT message (step 10)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1H
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

MEASUREMENT REPORT message (step 12)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	1
-Timeslot ISCP	Checked that this IE is present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	11
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2

8.6.1.2.4.2 1,28 Mcps TDD Option

Test environment : normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested : mid range ;see clauses G.2.4.

The test parameters are given in Table 8.6.1.2.4.2A, Table 8.6.1.2.4.2B and Table 8.6.1.2.4.2C below. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

In the measurement control information it shall be indicated to the UE that event-triggered reporting with event 1H and event 1I shall be used and that Timeslot ISCP and P-CCPCH RSCP shall be reported together with event 1H and 1I. Measurement control information shall be sent to the UE before the beginning of time period T1.

The UL DPCH shall be transmitted in timeslot 2. In addition, timeslots 5 and 6 shall be allocated as DL timeslots.

Table 8.6.1.2.4.2A: General test parameters for correct event 1H and 1I reporting in AWGN propagation condition 1,28Mcps option

Parameter		Unit	Value	Comment
DCH parameters active cell			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 1	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Timeslot list cell 1			5, 6	Timeslot numbers in IE "Cell info" for Cell 1
Timeslot list cell 2			6	Timeslot numbers in IE "Cell info" for Cell 2
Threshold used frequency		dBm	-68	Applicable for event 1H, cell 1 timeslots 5, 6 and cell 2 timeslot 6
Threshold used frequency		dBm	-66	Applicable for event 1I, cell 1 timeslots 5, 6 and cell 2 timeslot 6
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	Cell 2 shall belong to the monitored set
T1		s	5	
T2		s	5	
T3		s	5	
T4		s	5	

Table 8.6.1.2.4.2B: Cell 1 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition 1,28Mcps Option

Parameter	Unit	Cell 1												
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	
UTRA RF Channel Number		Channel 1												
DL timeslot number		0				5				6				
PCCPCH_Ec/Ior	dB	-3												
DPCH_Ec/Ior	dB					Note 1								
OCNS_Ec/Ior	dB	-3				Note 2				0				
\hat{I}_{or}/I_{oc}	dB	4				3				4	20		4	
PCCPCH RSCP	dBm	-79				n.a.				n.a.				
ISCP	dBm	Note 3				Note 3				-60	-60	-	-	
I_{oc}	dBm / 1,28 MHz	-80												
Note 1: The DPCH level is controlled by the power control loop														
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior														
Note 3: ISCP of TS0 and TS5 remains changeless.														

Table 8.6.1.2.4.2C: Cell 2 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition 1,28Mcps option

Parameter	Unit	Cell 2							
		T1	T2	T3	T4	T1	T2	T3	T4
UTRARF Channel Number		Channel 1							
DL timeslot number		0				6			
PCCPCH_Ec/lor	dB	-3							
DPCH_Ec/lor	dB								
OCNS_Ec/lor	dB	-3				0			
\hat{I}_{or}/I_{oc}	dB	4				20		4	
PCCPCH RSCP	dBm	-79				n.a.			
ISCP	dBm	Note1				-74.54	-60	-60	-74.54
I_{oc}	dBm / 1,28 MHz	-80							
Note1: ISCP of TS0 remains changeless									

Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 2 in timeslot 6. The measurement reporting delay from the beginning of T2 shall be less than 480 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 6. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 9) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4.
- 10) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 2 in timeslot 6. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 11) After 5 seconds from the beginning of T4, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 12) Repeat steps 1-13 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Timeslot ISCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	TRUE
-Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	
-Reporting quantities for monitored set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	TRUE
-Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	-68
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1I
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present

Information Element/Group name	Value/Remark
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	-66
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message (step 6)

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	6
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	11
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2

MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	6
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1H
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

MEASUREMENT REPORT message (step 10)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	6
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1H
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2

8.6.1.2.4.3 7,68 Mcps TDD Option

8.6.1.2.4.3.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Tables 8.6.1.2.4.3.1.1, 8.6.1.2.4.3.1.2 and 8.6.1.2.4.3.1.3. The test consists of five successive time periods, with a time duration of T1, T2, T3, T4 and T5 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

In the measurement control information it shall be indicated to the UE that event-triggered reporting with event 1H and event 1I shall be used and that Timeslot ISCP and P-CCPCH RSCP shall be reported together with event 1H and 1I. Measurement control information shall be sent to the UE before the beginning of time period T1.

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 10. In addition, timeslots 3 and 4 shall be allocated as DL timeslots. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.6.1.2.4.3.1.1: General test parameters for correct event 1H and event 1I reporting in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	
	Neighbour cell	Cell 2	
Final condition	Active cell	Cell 1	
HCS		Not used	
O	dB	0	Cell individual offset. This value shall be used for all cells in the test.
Timeslot list cell 1		2, 3, 4	Timeslot numbers in IE "Cell info" for Cell 1
Timeslot list cell 2		4	Timeslot numbers in IE "Cell info" for Cell 2
Threshold used frequency	dBm	-68	Threshold 1 applicable for event 1H, cell 1 timeslots 2, 4 and cell 2 timeslot 4
Threshold used frequency	dBm	-73	Threshold 2 applicable for event 1H, cell 1 timeslots 2, 3, 4 and cell 2 timeslot 4
Threshold used frequency	dBm	-67	Applicable for event 1I, cell 1 timeslots 2, 4 and cell 2 timeslot 4
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		6 TDD neighbours on Channel 1	Cell 2 shall belong to the monitored set
T1	s	5	
T2	s	5	
T3	s	5	
T4	s	5	
T5	s	5	

Table 8.6.1.2.4.3.1.2: Cell 1 specific parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit	Cell 1									
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRARF Channel Number		Channel 1									
DL timeslot number		0					2				
PCCPCH_Ec/lor	dB	-3					n.a.				
SCH_Ec/lor	dB	-9					n.a.				
SCH_t _{offset}	dB	5					n.a.				
DPCH_Ec/lor	dB	n.a.					Note 1				
OCNS_Ec/lor	dB	-3,12					Note 2				
\hat{I}_{or}/I_{oc}	dB	4					4				
PCCPCH RSCP	dBm	-69					n.a.				
I_{oc}	dBm / 7,68 MHz	-70									
Propagation Condition		AWGN									
DL timeslot number		3					4				
PCCPCH_Ec/lor	dB	n.a.					n.a.				
SCH_Ec/lor	dB	n.a.					n.a.				
SCH_t _{offset}	dB	n.a.					n.a.				
DPCH_Ec/lor	dB	n.a.					n.a.				
OCNS_Ec/lor	dB	0					0				
\hat{I}_{or}/I_{oc}	dB	3					0			6	
PCCPCH RSCP	dBm	n.a.					n.a.				
I_{oc}	dBm / 7,68 MHz	-70									
Propagation Condition		AWGN									
Note 1:	The DPCH level is controlled by the power control loop										
Note 2:	The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor										

Table 8.6.1.2.4.3.1.3: Cell 2 specific parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit	Cell 2									
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRARF Channel Number		Channel 1									
DL timeslot number		0					2				
PCCPCH_Ec/lor	dB	-3					n.a.				
SCH_Ec/lor	dB	-9					n.a.				
SCH_t _{offset}	dB	10					n.a.				
DPCH_Ec/lor	dB	n.a.					n.a.				
OCNS_Ec/lor	dB	-3,12					0				
\hat{I}_{or}/I_{oc}	dB	1					0	6	0		
PCCPCH RSCP	dBm	-72					n.a.				
I_{oc}	dBm / 7,68 MHz	-70									
Propagation Condition		AWGN									
DL timeslot number		3					4				
PCCPCH_Ec/lor	dB	n.a.					n.a.				
SCH_Ec/lor	dB	n.a.					n.a.				
SCH_t _{offset}	dB	n.a.					n.a.				
DPCH_Ec/lor	dB	n.a.					n.a.				
OCNS_Ec/lor	dB	0					0				
\hat{I}_{or}/I_{oc}	dB	3					6			0	
PCCPCH RSCP	dBm	n.a.					n.a.				
I_{oc}	dBm / 7,68 MHz	-70									
Propagation Condition		AWGN									

8.6.1.2.4.3.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T2 shall be less than 480 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 9) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4.
- 10) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 11) After 5 seconds from the beginning of T4, the SS shall switch the power settings from T4 to T5.
- 12) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 2 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 13) After 5 seconds from the beginning of T5, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 14) Repeat steps 1-13 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Timeslot ISCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	TRUE
-Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	
-Reporting quantities for monitored set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	TRUE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	TRUE
-Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	-68
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present

Information Element/Group name	Value/Remark
-W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Not Present 0 dB -73 Not Present Not Present 0 ms Infinity 0 ms (Note 1) Not Present
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Event 11 Not Present Not Present Not Present Not Present 0 dB -67 Not Present Not Present 0 ms Infinity 0 ms (Note 1) Not Present
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	Not Present
Integrity check info	1
Measurement identity	1
Measured Results (10.3.7.44)	Intra-frequency Measured results list
-CHOICE Measurement	1
-Intra-frequency measured results	
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	11
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE <i>TDD option</i>	7,68 Mcps TDD
-CHOICE <i>Sync case</i>	Not Present
-Cell parameters ID	Set to Cell parameters ID of Cell 1
-SCTD indicator	FALSE

MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1H
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE <i>TDD option</i>	7,68 Mcps TDD
-CHOICE <i>Sync case</i>	Not Present
-Cell parameters ID	Set to Cell parameters ID of Cell 1
-SCTD indicator	FALSE

MEASUREMENT REPORT message (step 10)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1H
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE <i>TDD option</i>	7,68 Mcps TDD
-CHOICE <i>Sync case</i>	Not Present
-Cell parameters ID	Set to Cell parameters ID of Cell 1
-SCTD indicator	FALSE

MEASUREMENT REPORT message (step 12)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	1
-Timeslot ISCP	Checked that this IE is present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	11
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE <i>TDD option</i>	7,68 Mcps TDD
-CHOICE <i>Sync case</i>	Not Present
-Cell parameters ID	Set to Cell parameters ID of Cell 2
-SCTD indicator	FALSE

8.6.1.2.5 Test requirements

8.6.1.2.5.1 3,84 Mcps TDD Option

The UE shall send one event II triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T2.

The UE shall send one event IH triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T3.

The UE shall send one event IH triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T4.

The UE shall send one event II triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T5.

The UE shall not send event IH or II triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

8.6.1.2.5.2 1,28 Mcps TDD Option

The UE shall not send event IH or II triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

8.6.1.2.5.3 7,68 Mcps TDD Option

The UE shall send one event II triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T2.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T3.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T4.

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T5.

The UE shall not send event 1H or 1I triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

8.6.1.3 Correct reporting of neighbours in fading propagation conditions

8.6.1.3.1 3,84 Mcps TDD Option

8.6.1.3.1.1 Definition and applicability

In the event triggered reporting, the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD (3,84 Mcps option) UE.

8.6.1.3.1.2 Minimum requirement

The requirements are the same as in sub clause 8.6.1.1.2

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.2.1, 8.1.2.2.2 and A.8.1.3

8.6.1.3.1.3 Test purpose

To verify that the UE meets the minimum requirements and also verify that the UE performs sufficient layer 1 filtering of the measurements. The test is performed in fading propagation conditions.

8.6.1.3.1.4 Method of test

8.6.1.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Tables 8.6.1.3.1 and 8.6.1.3.2. The test consists of one time period with time duration of T1. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The TTI of the UL DCCH shall be 20ms.

Table 8.6.1.3.1: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 1	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	200	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	Sent before the beginning of time period T1
T1		s	200	

Table 8.6.1.3.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T1	T1	T1
DL timeslot number		0	8	0	8
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3	n.a.	-3	n.a.
SCH_Ec/lor	dB	-9	-9	-9	-9
SCH_t _{offset}		0	0	2	2
PICH_Ec/lor	dB	n.a.	-3	n.a.	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	7	7	2	2
PCCPCH RSCP	dBm	-66	n.a.	-71	n.a.
I_{oc}	dBm/3,84 MHz	-70			
Propagation Condition		Case 4 as specified in Annex DTS25.102 Annex B			

8.6.1.3.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 200 seconds from the beginning of T1, the UE is switched off.
- 6) Repeat steps 1-5 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	FALSE
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	FALSE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

8.6.1.3.1.5 Test requirements

The number of Event 1G triggered measurement reports during time period T1 shall be less than 60.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

8.6.1.3.2 1,28 Mcps TDD Option

Void.

8.6.1.3.3 7,68 Mcps TDD Option

8.6.1.3.3.1 Definition and applicability

In the event triggered reporting, the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD (7,68 Mcps option) UE.

8.6.1.3.3.2 Minimum requirement

The requirements are the same as in sub clause 8.6.1.1.2

The normative reference for this requirement is TS 25.123 [2] clauses , 8.1B.2.2.2 and A.8.1.3.3

8.6.1.3.3.3 Test purpose

To verify that the UE meets the minimum requirements and also verify that the UE performs sufficient layer 1 filtering of the measurements. The test is performed in fading propagation conditions.

8.6.1.3.3.4 Method of test

8.6.1.3.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Tables 8.6.1.3.3.4.1.1 and 8.6.1.3.3.4.1.2. The test consists of one time period with time duration of T1. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The TTI of the UL DCCH shall be 20ms.

Table 8.6.1.3.3.4.1.1: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 1	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	200	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	Sent before the beginning of time period T1
T1		s	200	

Table 8.6.1.3.3.4.1.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T1	T1	T1
DL timeslot number		0	8	0	8
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3	n.a.	-3	n.a.
SCH_Ec/lor	dB	-9	-9	-9	-9
SCH_toffset		0	0	2	2
PICH_Ec/lor	dB	n.a.	-3	n.a.	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12
\hat{I}_{or}/I_{oc}	dB	7	7	2	2
PCCPCH RSCP	dBm	-66	n.a.	-71	n.a.
I_{oc}	dBm/7,68 MHz	-70			
Propagation Condition		Case 4 as specified in TS25.102 Annex B			

8.6.1.3.3.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 200 seconds from the beginning of T1, the UE is switched off.
- 6) Repeat steps 1-5 until the confidence level according to annex F.6.2 is achieved..

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	FALSE
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator	FALSE
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TDD
-CHOICE <i>mode</i>	FALSE
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

8.6.1.3.3.5 Test requirements

The number of Event 1G triggered measurement reports during time period T1 shall be less than 60.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

8.6.2 TDD inter frequency measurements

8.6.2.1 Correct reporting of neighbours in AWGN propagation condition

8.6.2.1.1 Definition and applicability

8.6.2.1.1.1 3,84 Mcps TDD Option

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD (3,84 Mcps option) UE.

8.6.2.1.1.2 1,28 Mcps TDD Option

The purpose of this test is to verify that the UE makes correct reporting of an event within the required times when doing inter frequency measurements on a neighbouring TDD cell. The test will partly verify the requirements in section 8.1A.2 and 9.1. of [2]. The requirements and this test apply to the TDD (1.28 Mcps option) UE.

8.6.2.1.1.3 7,68 Mcps TDD Option

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD (7,68 Mcps option) UE.

8.6.2.1.2 Minimum requirement

8.6.2.1.2.1 3,84 Mcps TDD Option

When idle intervals are used for inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within

$$T_{\text{identify inter}} = \text{Max} \left\{ 5000, N_{\text{basic identify TDD inter}} \cdot \frac{T_{\text{measurement period TDD inter}} \cdot N_{\text{Freq}}}{N_{\text{TDD inter}}} \right\} \text{ms}$$

If the UE does not require idle intervals to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

When idle intervals are used for TDD inter frequency measurements, the UE shall be capable of performing P-CCPCH RSCP measurements for $X_{\text{measurement TDD inter}}$ inter-frequency TDD cells per TDD frequency of the monitored set.

The UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in section 9 and with a measurement period of $T_{\text{measurement inter}}$.

$$T_{\text{measurement inter}} = \text{Max} \left\{ T_{\text{measurement period TDD inter}}, N_{\text{basic measurement TDD inter}} \cdot \frac{T_{\text{measurement period TDD inter}} \cdot N_{\text{Freq}}}{N_{\text{TDD inter}}} \right\} \text{ms}$$

If the UE does not require idle intervals to perform TDD inter-frequency measurements, the measurement period for inter frequency P-CCPCH RSCP measurements shall be 480 ms.

Where,

$$X_{\text{measurement_TDD_inter}} = 6 \text{ (cells)}$$

$T_{\text{measurement_period_inter}} = 480 \text{ ms}$. The time period used for calculating the measurement period $T_{\text{measurement_inter}}$ for inter frequency P-CCPCH RSCP measurements.

$N_{\text{TDD_inter}}$: This is the available number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period $T_{\text{TDD_inter}}$. The UE shall consider that a measurement opportunity on a Beacon timeslot of an inter-frequency TDD cell is provided if an idle interval of length equal to or greater than 3 timeslots less $2 \times 0.5 \text{ ms}$ implementation margin for frequency switching per idle interval completely overlaps in time with the Beacon timeslot of the inter-frequency TDD cell.

$N_{\text{basic_identify_TDD_inter}} = 80$. This is a number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period used in the inter frequency TDD equation where the maximum allowed time for the UE to identify a new detectable inter-frequency TDD cell is defined.

$N_{\text{basic_measurement_TDD_inter}} = 5$. This is a number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period $T_{\text{TDD_inter}}$ used in the inter-frequency TDD equation where the measurement period for inter-frequency P-CCPCH RSCP measurements is defined.

$N_{\text{Freq_TDD}}$: This is the number of TDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify_inter}}$ defined in 25.123 [2]. When L3 filtering is used, an additional delay can be expected.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.3.1, 8.1.2.3.2 and A.8.2.1

8.6.2.1.2.2 1,28 Mcps TDD Option

When idle intervals are used for inter-frequency TDD measurements, the UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify_inter}} = \text{Max} \left\{ 5000, N_{\text{basic_identify_TDD_inter}} \cdot \frac{T_{\text{Measurement_Period_Inter}}}{N_{\text{Inter}}} \cdot N_{\text{Freq}} \right\} \text{ms}$$

when

N_{Inter} : This is the minimum number of sub-frame in that the signal of P-CCPCH and DwPCH can be received for inter frequency target cell during the period $T_{\text{Measurement_Period_inter}}$ with an arbitrarily chosen timing. It depends on the channel allocation and is calculated by assuming $2 \times 0.1 \text{ ms}$ implementation margin (for the description of the idle intervals see Annex A of 25.225).

$T_{\text{basic_identify_TDD_inter}} = 800 \text{ ms}$. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new TDD cell is defined.

$T_{\text{Measurement_Period_Inter}} = 480 \text{ ms}$. The period used for calculating the measurement period $T_{\text{measurement_inter}}$ for inter frequency P-CCPCH RSCP measurements.

N_{Freq} : Number of TDD frequencies indicated in the inter frequency measurement control information.

If the UE does not require idle intervals to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

A cell shall be considered detectable when P-CCPCH $E_c/I_o \geq -8 \text{ dB}$ and DwPCH $E_c/I_o \geq -5 \text{ dB}$. When L3 filtering is used an additional delay can be expected.

The test consist of 2 successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.8.2C and A.8.2D below. Two cells shall be present in the test, cell 1 being the active cell and cell 2 being a 1.28Mcps TDD option neighbour cell on the unused frequency.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in 25.331 [9]

8.6.2.1.2.3 7,68 Mcps TDD Option

When idle intervals are used for inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within

$$T_{\text{identify_inter}} = \text{Max} \left\{ 5000, N_{\text{basic_identify_TDD_inter}} \cdot \frac{T_{\text{measurement_period_TDD_inter}}}{N_{\text{TDD_inter}}} \cdot N_{\text{Freq}} \right\} \text{ms}$$

If the UE does not require idle intervals to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

When idle intervals are used for TDD inter frequency measurements, the UE shall be capable of performing P-CCPCH RSCP measurements for $X_{\text{measurement_TDD_inter}}$ inter-frequency TDD cells per TDD frequency of the monitored set.

The UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in section 9 and with a measurement period of $T_{\text{measurement_inter}}$.

$$T_{\text{measurement_inter}} = \text{Max} \left\{ T_{\text{measurement_period_TDD_inter}}, N_{\text{basic_measurement_TDD_inter}} \cdot \frac{T_{\text{measurement_period_TDD_inter}}}{N_{\text{TDD_inter}}} \cdot N_{\text{Freq}} \right\} \text{ms}$$

If the UE does not require idle intervals to perform TDD inter-frequency measurements, the measurement period for inter frequency P-CCPCH RSCP measurements shall be 480 ms.

Where,

$$X_{\text{measurement_TDD_inter}} = 6 \text{ (cells)}$$

$T_{\text{measurement_period_inter}} = 480$ ms. The time period used for calculating the measurement period $T_{\text{measurement_inter}}$ for inter frequency P-CCPCH RSCP measurements.

$N_{\text{TDD_inter}}$: This is the available number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period $T_{\text{TDD_inter}}$. The UE shall consider that a measurement opportunity on a Beacon timeslot of an inter-frequency TDD cell is provided if an idle interval of length equal to or greater than 3 timeslots less $2 \cdot 0.5$ ms implementation margin for frequency switching per idle interval completely overlaps in time with the Beacon timeslot of the inter-frequency TDD cell.

$N_{\text{basic_identify_TDD_inter}} = 80$. This is a number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period used in the inter frequency TDD equation where the maximum allowed time for the UE to identify a new detectable inter-frequency TDD cell is defined.

$N_{\text{basic_measurement_TDD_inter}} = 5$. This is a number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period $T_{\text{TDD_inter}}$ used in the inter-frequency TDD equation where the measurement period for inter-frequency P-CCPCH RSCP measurements is defined.

$N_{\text{Freq_TDD}}$: This is the number of TDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify_inter}}$ defined in 25.123 [2]. When L3 filtering is used, an additional delay can be expected.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1B.2.3.1, 8.1B.2.3.2 and A.8.2.1

8.6.2.1.3 Test purpose

8.6.2.1.3.1 3,84 Mcps TDD Option

To verify that the UE meets the minimum requirement.

8.6.2.1.3.2 1,28 Mcps TDD Option

To verify that the UE meets the minimum time requirements for identifying neighbouring TDD cells

8.6.2.1.3.3 7,68 Mcps TDD Option

To verify that the UE meets the minimum time requirements for identifying neighbouring interfrequency TDD cells.

8.6.2.1.4 Method of test

8.6.2.1.4.1 3,84 Mcps TDD Option

8.6.2.1.4.1.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.6.2.1.1 and 8.6.2.1.2. The test consists of 2 successive time periods, with a time duration T1 and T2. Two cells shall be present in the test, cell 1 being the serving cell and cell 2 being a UTRA TDD neighbour cell on the unused frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. The TTI of the uplink DCCH shall be 20 ms.

Table 8.6.2.1.1: General test parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition (3,84 Mcps option)

Parameter		Unit	Value	Comment
DPCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in Annex CTS 25.102 annex A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	UTRA TDD cell
	Neighbour cell		Cell 2	UTRA TDD cell
Threshold non used frequency		dB	-71	Applicable for event 2C
Hysteresis		dB	0	Applicable for event 2C
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			24 on channel 1 16 on channel 2	
T1		s	10	
T2		s	10	

Table 8.6.2.1.2: Cell specific parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition (3,84 Mcps option)

Parameter	Unit	Cell 1				Cell 2			
		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_offset		0	0	0	0	15	15	15	15
PICH_Ec/lor				-3	-3			-3	-3
OCNS		-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	-Infinity	9	-Infinity	9
I_{oc}	dBm/3,84 MHz	-70							
PCCPCH_RSCP	dB	-70	-70			-Infinity	-64		
Propagation Condition		AWGN							

8.6.2.1.4.1.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2c for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5080 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 10 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 8) Repeat steps 1-7 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

NOTE: Numbers in brackets after an item e.g “Message Type (10.2.17)” in the IE description are references to clause numbers in TS 25.331 [9] describing that item in more detail. MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TDD
-UARFCN(Nt)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE TDD option	3,84 Mcps TDD
-CHOICE Sync case	2
-Timeslot	0
-cell parameters ID	Set to cell parameters ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2 as described in Table 8.6.2.1.2
-Timeslot list	Not Present
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting Cell Status (10.3.61)	
-CHOICE reported cell	Report cells within active and/or monitored

Information Element/Group name	Value/Remark
- Maximum number of reported cells - Parameters required for each non-used frequency - Threshold non-used frequency - W non-used frequency	set on used frequency or within virtual active and/or monitored set on non-used frequency 3 -71 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2
-CHOICE mode	TDD
-Primary CCPCH Info	
-CHOICE mode	TDD
-CHOICE TDD Option	3,84 Mcps TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

8.6.2.1.4.2 1,28 Mcps TDD Option

Test environment : normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested : mid range ;see clauses G.2.4.

Cell 1 is the active cell, Cell 2 is a neighbour cell on the unused frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event". General test parameters are given in the table 8.6.2.1.3 below and they are signalled from test device. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell has to be reported together with Event 2C reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts. The cell specific test parameters are shown in Table 8.6.2.1.4.

Table 8.6.2.1.3: General test parameters for correct reporting of TDD inter frequency neighbours in AWGN propagation condition 1,28Mcps option

Parameter		Unit	Value	Comment
DPCH parameters active cell			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2. The DPCH is located in an other timeslot than 0
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	1.28Mcps TDD cell
	Neighbour cell		Cell 2	1.28Mcps TDD cell
Final conditions	Active cell		Cell 1	
Threshold non used frequency		dBm	-71	Absolute P-CCPCH RSCP threshold for event 2C
W non-used frequency			1	Applicable for event 2C
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			24 on channel 1 16 on channel 2	Measurement control information is sent before T1 starts.
T1		s	10	
T2		s	10	

Table 8.6.2.1.4 Cell Specific Parameters for Correct Reporting of Neighbours in AWGN Propagation Condition 1,28Mcps option

Parameter	Unit	Cell 1				Cell 2			
		0		DwPTS		0		DwPTS	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2
UTRARF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/lor	dB	-3				-3			
DwPCH_Ec/lor	dB			0				0	
OCNS_Ec/lor	dB	-3				-3			
\hat{I}_{or}/I_{oc}	dB	3	3			-Infinity	8		
I_{oc}	dBm/1.28 MHz	-70							
PCCPCH_RSCP	dBm	-70	-70			-Infinity	-65		
Propagation Condition		AWGN							

NOTE: The DPCH of all cells are located in a timeslot other than 0.

8.6.2.1.4.2.2 Test Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2c for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5080 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 10 seconds from the beginning of T2, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

8) Repeat steps 1-7 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

Note: Numbers in brackets after an item e.g. “Message Type (10.2.17)” in the IE description are references to clause numbers in TS 25.331 [9] describing that item in more detail.

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TDD
-UARFCN(Nt)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE TDD option	1,28 Mcps TDD
-cell parameters ID	Set to cell parameters ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2 as described in Table 8.6.2.1.2
-Timeslot list	Not Present
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting Cell Status (10.3.61)	
-CHOICE reported cell	Report cells within active and/or monitored

Information Element/Group name	Value/Remark
- Maximum number of reported cells - Parameters required for each non-used frequency - Threshold non-used frequency - W non-used frequency	set on used frequency or within virtual active and/or monitored set on non-used frequency 3 -71 1
Physical channel information elements - DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
- CHOICE Measurement	Inter-frequency Measured results list
- Inter-frequency measured results	1
- Frequency info	
- CHOICE mode	TDD
- UARFCN(Nt)	Same frequency as channel 2
- UTRA carrier RSSI	Not Present
- Inter-frequency cell measured results	1
- Cell measured results (10.3.7.3)	
- Cell identity	Not Present
- SFN-SFN observed time difference	Not Present
- Cell synchronisation info	Not Present
- CHOICE mode	TDD
- Cell parameters ID	Set to cell parameters ID of Cell 2
- Proposed TGSN	Not Present
- Primary CCPCH RSCP	Checked that this IE is present
- Pathloss	Not Present
- Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
- CHOICE event result	Inter-frequency measurement event results
- Inter-frequency event identity	2C
- Inter-frequency cells	1
- Frequency Info	
- CHOICE mode	TDD
- UARFCN(Nt)	Same frequency as channel 2
- Non frequency related measurement event results	
- CHOICE mode	TDD
- Primary CCPCH Info	
- CHOICE mode	TDD
- CHOICE TDD Option	1.28 Mcps TDD
- TSTD indicator	TRUE
- Cell Parameters ID	Set to cell parameters ID of Cell 2
- SCTD Indicator	FALSE

8.6.2.1.4.3 7,68 Mcps TDD Option

8.6.2.1.4.3.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.6.2.1.4.3.1.1 and 8.6.2.1.4.3.1.2. The test consists of 2 successive time periods, with a time duration T1 and T2. Two cells shall be present in the test, cell 1 being the serving cell and cell 2 being a UTRA TDD neighbour cell on the unused frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. The TTI of the uplink DCCH shall be 20 ms.

Table 8.6.2.1.4.3.1.1: General test parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition (7,68 Mcps option)

Parameter	Unit	Value	Comment
DPCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 annex A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	UTRA TDD cell
	Neighbour cell	Cell 2	UTRA TDD cell
Threshold non used frequency	dB	-71	Applicable for event 2C
Hysteresis	dB	0	Applicable for event 2C
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	
T1	s	10	
T2	s	10	

Table 8.6.2.1.4.3.1.2: Cell specific parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition (7,68 Mcps option)

Parameter	Unit	Cell 1				Cell 2			
		0		8		0		8	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_offset		0	0	0	0	15	15	15	15
PICH_Ec/lor				-3	-3			-3	-3
OCNS		-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	-Infinity	9	-Infinity	9
I_{oc}	dBm/7.68 MHz	-70							
PCCPCH_RSCP	dB	-70	-70			-Infinity	-64		
Propagation Condition		AWGN							

8.6.2.1.4.3.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2c for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5080 ms. If the UE fails to report the event within the

required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

- 7) After 10 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 8) Repeat steps 1-7 until the confidence level according to annex F.6.2 is achieved..

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

Note: Numbers in brackets after an item e.g. “Message Type (10.2.17)” in the IE description are references to clause numbers in TS 25.331 [9] describing that item in more detail. MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TDD
-UARFCN(Nt)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE TDD option	7,68 Mcps TDD
-CHOICE Sync case	2
-Timeslot	0
-cell parameters ID	Set to cell parameters ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2 as described in Table 8.6.2.1.2
-Timeslot list	Not Present
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting Cell Status (10.3.61)	
-CHOICE reported cell	Report cells within active and/or monitored

Information Element/Group name	Value/Remark
- Maximum number of reported cells - Parameters required for each non-used frequency - Threshold non-used frequency - W non-used frequency	set on used frequency or within virtual active and/or monitored set on non-used frequency 3 -71 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2
-CHOICE mode	TDD
-Primary CCPCH Info	
-CHOICE mode	TDD
-CHOICE TDD Option	7,68 Mcps TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

8.6.2.1.5 Test requirements

8.6.2.1.5.1 3,84 Mcps TDD Option

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 5080ms from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

8.6.2.1.5.2 1,28 Mcps TDD Option

The UE shall send an EVENT 2C message of cell 2 within 5080ms from the beginning of the time T2

The UE shall not send any event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

8.6.2.1.5.3 7,68 Mcps TDD Option

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 5080ms from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

8.6.3 FDD measurements

8.6.3.1 Correct reporting of FDD neighbours in AWGN propagation condition

8.6.3.1.1 Definition and applicability

8.6.3.1.1.1 3,84 Mcps TDD Option

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the combined FDD and TDD (3,84 Mcps option) UE.

8.6.3.1.1.2 1,28 Mcps TDD Option

The purpose of this test is to verify that the UE makes correct reporting of an event when measuring on UTRA FDD cells. This test will partly verify the requirements in section 8.1A.2 and 9.1. of [2]

The test consists of two successive time periods, with a time duration T1 and T2. Two cells shall be present in the test, cell 1 being current active 1.28Mcps TDD cell and cell 2 being a UTRA FDD neighbouring cell.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used and the CPICH RSCP of the best cell on the unused frequency shall be reported together with Event 2C. The measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in 25.331 [9].

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.6.3.1.1.3 7,68 Mcps TDD Option

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the combined FDD and TDD (7,68 Mcps option) UE.

8.6.3.1.2 Minimum requirement

8.6.3.1.2.1 3,84 Mcps TDD Option

When idle intervals are used for inter-frequency FDD measurements, the UE shall be able to identify a new detectable inter-frequency FDD cell belonging to the monitored set within

$$T_{\text{identify FDDinter}} = \text{Max} \left\{ 5000, T_{\text{basic identify FDDinter}} \cdot \frac{T_{\text{measurement period FDDinter}}}{T_{\text{FDDinter}}} \cdot N_{\text{Freq}} \right\} \text{ms}$$

If the UE does not require idle intervals to perform FDD inter-frequency measurements, the UE shall be able to identify a new detectable inter-frequency FDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

An inter-frequency FDD cell shall be considered detectable, when CPICH Ec/Io \geq -20 dB, SCH_Ec/Io \geq -17 dB and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code.

When idle intervals are used for FDD inter frequency measurements, the UE physical layer shall be capable of reporting measurements to higher layers with measurement period given by

$$T_{\text{measurement FDD inter}} = \text{Max} \left\{ T_{\text{measurement period FDD inter}}, T_{\text{basic measurement FDD inter}} \cdot \frac{T_{\text{measurement period FDD inter}}}{T_{\text{FDD inter available}}} \cdot N_{\text{Freq, FDD}} \right\} \text{ms}$$

If the UE does not require idle intervals to perform FDD inter-frequency measurements, the measurement period for inter frequency CPICH measurements shall be 480 ms.

The UE shall be capable of performing CPICH measurements for $X_{\text{measurement FDD inter}}$ inter-frequency FDD cells per frequency of the monitored set and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{\text{measurement FDD inter}}$.

$$X_{\text{basic measurement FDD inter}} = 6 \text{ (cells)}$$

$T_{\text{measurement period FDD inter}} = 480$ ms. The time period used for calculating the measurement period $T_{\text{measurement FDD inter}}$ for inter frequency CPICH measurements.

$T_{\text{FDD inter available}}$: This is the available time for measurements on inter-frequency FDD cells. $T_{\text{FDD inter available}}$ shall be derived from $T_{\text{FDD inter}}$ by assuming 2*0.5 ms implementation margin for frequency switching per idle interval and by only taking into account the remaining number of full timeslots per idle interval. Idle intervals smaller than 3 timeslots shall not be taken into account for calculating $T_{\text{FDD inter available}}$.

$T_{\text{basic identify FDD inter}} = 800$ ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new detectable inter-frequency FDD cell is defined.

$T_{\text{basic measurement FDD inter}} = 50$ ms. This is the time period used in the inter-frequency equation for defining the measurement period for inter frequency CPICH measurements.

N_{Freq} : This is the number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify inter}}$ defined in 25.123 [2]. When L3 filtering is used, an additional delay can be expected.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.4 and A.8.3.1

8.6.3.1.2.2 1,28 Mcps TDD Option

The UE shall send the Event 2C triggered measurement report, with a measurement reporting delay less than 5.08 s from the beginning of time period T2.

8.6.3.1.2.3 7,68 Mcps TDD Option

When idle intervals are used for inter-frequency FDD measurements, the UE shall be able to identify a new detectable inter-frequency FDD cell belonging to the monitored set within

$$T_{\text{identify FDD inter}} = \text{Max} \left\{ 5000, T_{\text{basic identify FDD inter}} \cdot \frac{T_{\text{measurement period FDD inter}}}{T_{\text{FDD inter}}} \cdot N_{\text{Freq}} \right\} \text{ms}$$

If the UE does not require idle intervals to perform FDD inter-frequency measurements, the UE shall be able to identify a new detectable inter-frequency FDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

An inter-frequency FDD cell shall be considered detectable, when CPICH Ec/Io \geq -20 dB, SCH_Ec/Io \geq -17 dB and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code.

When idle intervals are used for FDD inter frequency measurements, the UE physical layer shall be capable of reporting measurements to higher layers with measurement period given by

$$T_{\text{measurement FDD inter}} = \text{Max} \left\{ T_{\text{measurement period FDD inter}}, T_{\text{basic measurement FDD inter}} \cdot \frac{T_{\text{measurement period FDD inter}}}{T_{\text{FDD inter available}}} \cdot N_{\text{Freq, FDD}} \right\} \text{ms}$$

If the UE does not require idle intervals to perform FDD inter-frequency measurements, the measurement period for inter frequency CPICH measurements shall be 480 ms.

The UE shall be capable of performing CPICH measurements for $X_{\text{measurement FDD inter}}$ inter-frequency FDD cells per frequency of the monitored set and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{\text{measurement FDD inter}}$.

$$X_{\text{basic measurement FDD inter}} = 6 \text{ (cells)}$$

$T_{\text{measurement_period FDD inter}} = 480$ ms. The time period used for calculating the measurement period $T_{\text{measurement_FDD inter}}$ for inter frequency CPICH measurements.

$T_{\text{FDD inter available}}$: This is the available time for measurements on inter-frequency FDD cells. $T_{\text{FDD inter available}}$ shall be derived from $T_{\text{FDD inter}}$ by assuming $2 \cdot 0.5$ ms implementation margin for frequency switching per idle interval and by only taking into account the remaining number of full timeslots per idle interval. Idle intervals smaller than 3 timeslots shall not be taken into account for calculating $T_{\text{FDD inter available}}$.

$T_{\text{basic_identify_FDD inter}} = 800$ ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new detectable inter-frequency FDD cell is defined.

$T_{\text{basic_measurement_FDD inter}} = 50$ ms. This is the time period used in the inter-frequency equation for defining the measurement period for inter frequency CPICH measurements.

N_{Freq} : This is the number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify inter}}$ defined in 25.123 [2]. When L3 filtering is used, an additional delay can be expected.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1B.2.4 and A.8.3.1

8.6.3.1.3 Test purpose

8.6.3.1.3.1 3,84 Mcps TDD Option

To verify that the UE meets the minimum requirement.

8.6.3.1.3.2 1,28 Mcps TDD Option

To verify that the UE meets the minimum time requirements for identifying neighbouring FDD cells.

8.6.3.1.3.3 7,68 Mcps TDD Option

To verify that the UE meets the minimum time requirements for identifying neighbouring FDD cells.

8.6.3.1.4 Method of test

8.6.3.1.4.1 3,84 Mcps TDD Option

8.6.3.1.4.1.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.6.3.1.1 and 8.6.3.1.2. The test consists of two successive time periods, with time durations of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA TDD cell and cell 2 being a UTRA FDD neighbour cells on the unused frequency.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used and that CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C. The

Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. The TTI of the uplink DCCH shall be 20 ms.

Table 8.6.3.1.1: General test parameters for Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition (3,84 Mcps option)

Parameter		Unit	Value	Comment
DPCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	UTRA TDD cell
	Neighbour cell		Cell 2	UTRA FDD cell
Final conditions	Active cell		Cell 1	
Threshold non used frequency		dB	-18	Applicable for event 2C
W non-used frequency			1	Applicable for event 2C
Hysteresis		dB	0	Applicable for event 2C
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on channel 1 6 FDD neighbours on channel 2	
T1		s	15	
T2		s	10	

Table 8.6.3.1.2: Cell specific parameters for Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition (3,84 Mcps option)

Parameter	Unit	Cell 1				Cell 2	
		0		8		n.a	
Timeslot Number		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2	
CPICH_Ec/lor	dB	n.a.		n.a.		-10	
PCCPCH_Ec/lor	dB	-3	-3			-12	
SCH_Ec/lor	dB	-9	-9	-9	-9	-12	
SCH_toffset		0	0	0	0	n.a.	
PICH_Ec/lor				-3	-3	-15	
OCNS	dB	-4,28	-4,28	-4,28	-4,28	-0,941	
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	-infinity	-1.8
I_{oc}	dBm/3,84 MHz	-70				-70	
CPICH_Ec/lo		n.a.				-infinity	-14
PCCPCH_RSCP	dB	-70	-70	-70	-70	n.a.	
Propagation Condition		AWGN				AWGN	

8.6.3.1.4.1.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 15 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5040 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 10 seconds from the beginning of T2, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 8) Repeat steps 1-7 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

Note: 10.x.y.z in the IE description refers to clauses in TS 25.331 [9].

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE <i>mode</i>	FDD
-Primary CPICH info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-Primary CPICH Tx Power	Set to Primary CPICH Tx Power of Cell2 described in Table 8.6.3.1.2
-Tx Diversity Indicator	FALSE
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/No
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE <i>mode</i>	FDD
-CPICH Ec/No reporting indicator	TRUE
-CPICH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting Cell Status (10.3.61)	
-CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency
-Maximum number of reported cells	3

Information Element/Group name	Value/Remark
-Parameters required for each non-used frequenc - Threshold non-used frequency - W non-used frequency	-18 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	FDD
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Checked that this IE is present
-CPICH RSCP	Not Present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-CHOICE mode	FDD
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

8.6.3.1.4.2 1,28 Mcps TDD Option

Cell 1 is current active TDD cell, Cell 2 is a FDD cell. The power level of CPICH RSCP of cell 2 and the P-CCPCH RSCP of cell 1 is changed. General test parameters are given in the table 8.6.3.1.3 below and they are signalled from test device. New measurement control information, which defines neighbour cells etc., is always sent before the handover starts. The test parameters are given in Table 8.6.3.1.4 below.

Table 8.6.3.1.3: General test parameters for Correct reporting of FDD neighbours in AWGN propagation condition 1,28Mcps option

Parameter		Unit	Value	Comment
DPCH parameters active cell			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0.
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Active cell Initial conditions	Active cell		Cell 1	1.28Mcps TDD cell
	Neighbour cell		Cell2	FDD cell
Final conditions	Active cell		Cell 1	1.28Mcps TDD cell
Threshold non used frequency		dBm	-86	Absolute CPICH RSCP threshold for event 2C
Hysteresis		dB	0	
W non-used frequency			1	Applicable for event 2C
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 FDD neighbours on Channel 2	Measurement control information is sent before T1 starts.
T1		s	10	
T2		s	10	

Table 8.6.3.1.4 Cell Specific parameters for Correct reporting of FDD neighbours in AWGN propagation condition: 1,28Mcps option

Parameter	Unit	Cell 1				Cell 2	
		0		DwPTS		n.a.	n.a.
Timeslot Number		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2	
CPICH_Ec/lor	dB	n.a.		n.a.		-10	-10
PCCPCH_Ec/lor	dB	-3	-3			-12	-12
SCH_Ec/lor	dB	n.a.	n.a.	n.a.	n.a.	-12	-12
PICH_Ec/lor	dB	n.a.	n.a.	n.a.	n.a.	-15	-15
DwPCH_Ec/lor	dB			0	0	n.a.	n.a.
OCNS	dB	-3	-3			-0,941	-0,941
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	-Infinity	-2
I_{oc}	dBm/1.28 MHz	-70					
I_{oc}	dBm/3.84 MHz					-70	
CPICH_RSCP	dBm	n.a.				-Infinity	-82
PCCPCH_RSCP	dBm	-70	-70			n.a.	n.a.
Propagation Condition		AWGN				AWGN	

Note: The DPCH of cell 1 is located in a timeslot other than 0.

8.6.3.1.4.2.1 Test Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 15 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5040 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 10 seconds from the beginning of T2, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 8) Repeat steps 1-7 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

Note: 10.x.y.z in the IE description refers to clauses in TS 25.331 [9].

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE <i>mode</i>	FDD
-Primary CPICH info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-Primary CPICH Tx Power	Set to Primary CPICH Tx Power of Cell2 described in Table 8.6.3.1.2
-Tx Diversity Indicator	FALSE
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	FDD
-Measurement quantity for frequency quality estimate	CPICH_RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE <i>mode</i>	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting Cell Status (10.3.61)	
-CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency
-Maximum number of reported cells	3

Information Element/Group name	Value/Remark
-Parameters required for each non-used frequenc - Threshold non-used frequency - W non-used frequency	-86 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	FDD
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Checked that this IE is present
-CPICH RSCP	Not Present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-CHOICE mode	FDD
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

8.6.3.1.4.3 7,68 Mcps TDD Option

8.6.3.1.4.3.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.6.3.1.4.3.1.1 and 8.6.3.1.4.3.1.2. The test consists of two successive time periods, with time durations of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA TDD cell and cell 2 being a UTRA FDD neighbour cells on the unused frequency.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used and that CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. The TTI of the uplink DCCH shall be 20 ms.

Table 8.6.3.1.4.3.1.1: General test parameters for Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition (7,68 Mcps option)

Parameter		Unit	Value	Comment
DPCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	UTRA TDD cell
	Neighbour cell		Cell 2	UTRA FDD cell
Final conditions	Active cell		Cell 1	
Threshold non used frequency		dB	-18	Applicable for event 2C
W non-used frequency			1	Applicable for event 2C
Hysteresis		dB	0	Applicable for event 2C
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on channel 1 6 FDD neighbours on channel 2	
T1		s	15	
T2		s	10	

Table 8.6.3.1.4.3.1.2: Cell specific parameters for Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition (7,68 Mcps option)

Parameter	Unit	Cell 1				Cell 2	
		0		8		n.a.	
Timeslot Number		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2	
CPICH_Ec/lor	dB	n.a.		n.a.		-10	
PCCPCH_Ec/lor	dB	-3	-3			-12	
SCH_Ec/lor	dB	-9	-9	-9	-9	-12	
SCH_offset		0	0	0	0	n.a.	
PICH_Ec/lor				-3	-3	-15	
OCNS	dB	-4,28	-4,28	-4,28	-4,28	-0,941	
\hat{I}_{or}/I_{oc}	dB	3	3	3	3	-infinity	-1.8
I_{oc}	dBm/7.68 MHz	-70				-70	
CPICH_Ec/lo		n.a.				-infinity	-14
PCCPCH_RSCP	dB	-70	-70	-70	-70	n.a.	
Propagation Condition		AWGN				AWGN	

8.6.3.1.4.3.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 15 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5040 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

- 7) After 10 seconds from the beginning of T2, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 8) Repeat steps 1-7 until the confidence level according to annex F.6.2 is achieved..

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

Note: 10.x.y.z in the IE description refers to clauses in TS 25.331 [9].

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE <i>mode</i>	FDD
-Primary CPICH info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-Primary CPICH Tx Power	Set to Primary CPICH Tx Power of Cell2 described in Table 8.6.3.1.2
-Tx Diversity Indicator	FALSE
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/No
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE <i>mode</i>	FDD
-CPICH Ec/No reporting indicator	TRUE
-CPICH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting Cell Status (10.3.61)	
-CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency
-Maximum number of reported cells	3

Information Element/Group name	Value/Remark
-Parameters required for each non-used frequenc - Threshold non-used frequency - W non-used frequency	-18 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	FDD
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Checked that this IE is present
-CPICH RSCP	Not Present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-CHOICE mode	FDD
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

8.6.3.1.5 Test requirements

8.6.3.1.5.1 3,84 Mcps TDD Option

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 5040ms from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS] % of the cases.

8.6.3.1.5.2 1,28 Mcps TDD Option

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 5080ms from the beginning of time period T2.

The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90% .

8.6.3.1.5.3 7,68 Mcps TDD Option

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 5040ms from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

8.6.4 GSM measurements

8.6.4.1 Correct reporting of GSM neighbours in AWGN propagation condition

8.6.4.1.1 3,84 Mcps TDD option

FFS

8.6.4.1.2 1,28 Mcps TDD option

8.6.4.1.2.1 Definition and applicability

.In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH. The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements on a neighbouring GSM cell. The test will partly verify the requirements in section 8.4 of [2].

The requirements and this test apply to the combined GSM and TDD (1,28Mcps option) UE.

8.6.4.1.2.2 Minimum requirement

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter-RAT GSM measurements.

8.6.4.1.2.3 Test purpose

To verify that the UE meets the minimum time requirements for identifying neighbouring GSM cells.

8.6.4.1.2.4 Method of test

8.6.4.1.2.4.1 Initial condition of Test 1

Test 1 is with BSIC verification required case.

Two cells shall be present in the test, Cell 1 is current active TDD cell, cell 2 is a GSM cell. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. The test parameters are given in Tables 8.6.4.1.2.1 and 8.6.4.1.2.2 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3B and 3C shall be used. At the start of time duration T1, the UE may not have any timing information of cell 2. The power level of cell 2 is increased and then reduced, and a measurement report should be triggered at each transition.

Table 8.6.4.1.2.1 General test parameters for Correct reporting of GSM neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2. The DPCH is located in an other timeslot than 0.
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Active cell		Cell 1	
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		12 TDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before T1 starts.
T Identify abort	s	5.0	
T Reconfirm abort	s	5.0	
T1	s	5	
T2	s	7	
T3	s	5	

Table 8.6.4.1.2.2 Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 1) LCR TDD

Parameter	Unit	Cell 1	
		T1, T2, T3	
Timeslot Number		0	DwPTS
UTRA RF Channel Number		Channel 1	
PCCPCH_Ec/lor	dB	-3	
DwPCH_Ec/lor	dB		0
OCNS_Ec/lor	dB	-3	
\hat{I}_{or}/I_{oc}	dB	3	
I_{oc}	dBm/1.28 MHz	-70	
PCCPCH_RSCP	dBm	-70	
Propagation Condition		AWGN	
Note 1: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor.			
Note 2: PCCPCH RSCP levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.			

Table 8.6.4.1.2.3 Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 2) GSM

Parameter	Unit	Cell 2		
		T1	T2	T3
Absolute RF Channel Number		ARFCN 1		
RXLEV	dBm	-infinity	-75	-85

8.6.4.1.2.4.1 Initial condition of Test 2

Test 2 is without BSIC verification required case.

Two cells shall be present in the test, Cell 1 is current active TDD cell, cell 2 is a GSM cell. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. The test parameters are given in Tables 8.6.4.1.2.4 and 8.6.4.1.2.5 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3B and 3C shall be used. At the start of time duration T1, the UE may not have any timing information of cell 2. The power level of cell 2 is increased and then reduced, and a measurement report should be triggered at each transition.

Table 8.6.4.1.2.4 General test parameters for Correct reporting of GSM neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2. The DPCH is located in an other timeslot than 0.
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Active cell		Cell 1	
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		12 TDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before T1 starts.
T Identify abort	s	5.0	
T Reconfirm abort	s	5.0	
T1	s	5	
T2	s	2	
T3	s	5	

Table 8.6.4.1.2.5 Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 1) LCR TDD

Parameter	Unit	Cell 1	
		T1, T2, T3	
Timeslot Number		0	DwPTS
UTRA RF Channel Number		Channel 1	
PCCPCH_Ec/lor	dB	-3	
DwPCH_Ec/lor	dB		0
OCNS_Ec/lor	dB	-3	
\hat{I}_{or}/I_{oc}	dB	3	
I_{oc}	dBm/1.28 MHz	-70	
PCCPCH_RSCP	dBm	-70	
Propagation Condition		AWGN	
Note 1: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor.			
Note 2: PCCPCH RSCP levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.			

Table 8.6.4.1.2.6 Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 2) GSM

Parameter	Unit	Cell 2		
		T1	T2	T3
Absolute RF Channel Number		ARFCN 1		
RXLEV	dBm	-infinity	-75	-85

8.6.4.1.2.5 Test Procedure

8.6.4.1.2.5.1 Test 1

- 1) The RF parameters are set up according to test T1.(see Table 8.6.4.1.2.2 and Table 8.6.4.1.2.3)
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit the MEASUREMENT CONTROL message.
- 5) After 5seconds from the beginning of T1, the SS shall switch the GSM level setting from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 6.04s. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 7seconds from the beginning of T2, the SS shall switch the GSM level setting from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 3B for cell 2. The measurement reporting delay from the beginning of T3 shall be less than 1040ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 9) After the SS receives the measurement report message in step 8) or 5 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat steps 1-9 according to Annex F.6.2 Table F.6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions.:

Note: Numbers in brackets after an item e.g “Message Type (10.2.17)” in the IE description are references to clause numbers in TS 25.331 [9] describing that item in more detail.

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	0
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	2 Setup AM RLC Event trigger Not Present
-CHOICE <i>Measurement type</i> -Inter-RAT measurement (10.3.7.27) -Inter-RAT measurement objects list (10.3.7.23) -Inter-RAT measurement quantity (10.3.7.29) -Measurement quantity for UTRAN quality estimate (10.3.7.38) -Filter coefficient -CHOICE mode -Measurement quantity -CHOICE system -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24) -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -CHOICE reported cell -Maximum number of reported cells -Inter-RAT event identity (10.3.7.24) -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -CHOICE reported cell -Maximum number of reported cells	Inter-RAT measurement Not Present 0 TDD PCcPCH_RSCP GSM GSM Carrier RSSI 0 Required Not Present Inter-RAT measurement reporting criteria 2 Event 3B Not Present Not Present -80 dBm 0 dB 0 ms Report cells within active set or within virtual active set or of the other RAT 2 Event 3C Not Present Not Present -80 dBm 0 dB 0 ms Report cells within active set or within virtual active set or of the other RAT 2
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

First MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	GSM
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	3C
-Inter-frequency cells	1

Second MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	GSM
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	3B
-Inter-frequency cells	1

8.6.4.1.2.5.2 Test 2

- 1) The RF parameters are set up according to test T1.(see Table 8.6.4.1.2.5 and Table 8.6.4.1.2.6)
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit the MEASUREMENT CONTROL message.
- 5) After 5 seconds from the beginning of T1, the SS shall switch the GSM level setting from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 1040ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 2 seconds from the beginning of T2, the SS shall switch the GSM level setting from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 3B for cell 2. The measurement reporting delay from the beginning of T3 shall be less than 1040ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 9) After the SS receives the measurement report message in step 8) or 5 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

10) Repeat steps 1-9 according to Annex F.6.2 Table F.6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions.:

Note: Numbers in brackets after an item e.g. “Message Type (10.2.17)” in the IE description are references to clause numbers in TS 25.331 [9] describing that item in more detail.

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate (10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	TDD
-Measurement quantity	PCcPCH_RSCP
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Not Required
-Inter-RAT reporting quantity (10.3.7.32)	
-Reporting cell status (10.3.7.61)	Not Present
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	2
-Inter-RAT event identity (10.3.7.24)	Event 3B
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

First MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE <i>mode</i>	GSM
-UARFCN uplink (Nu)	Not Present

-UARFCN downlink (Nd) -UTRA carrier RSSI Event results (10.3.7.7) -CHOICE event result -Inter-frequency event identity -Inter-frequency cells	Same frequency as channel 2 Not Present Inter-frequency measurement event results 3C 1
--	--

Second MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	GSM
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	3B
-Inter-frequency cells	1

8.6.4.1.2.6 Test requirements

8.6.4.1.2.6.1 Test 1

The UE shall send one Event 3C triggered measurement report for cell 2, with a measurement reporting delay less than 6.04s from the beginning of time period T2.

The UE shall send one Event 3B triggered measurement report for cell 2, with a measurement reporting delay less than 1040 ms from the beginning of time period T3.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of events correctly reported during repeated tests shall be at least 90%.

8.6.4.1.2.6.2 Test 2

The UE shall send one Event 3C triggered measurement report for cell 2, with a measurement reporting delay less than 1040ms from the beginning of time period T2.

The UE shall send one Event 3B triggered measurement report for cell 2, with a measurement reporting delay less than 1040 ms from the beginning of time period T3.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of events correctly reported during repeated tests shall be at least 90%.

8.6.4.1.3 7,68 Mcps TDD option

8.6.4.1.3.1 Definition and applicability

.In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH. The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements on a neighbouring GSM cell. The test will partly verify the requirements in section 8.4 of [2].

The requirements and this test apply to the combined GSM and TDD (7,68Mcps option) UE.

8.6.4.1.3.2 Minimum requirement

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter-RAT GSM measurements.

8.6.4.1.3.3 Test purpose

To verify that the UE meets the minimum time requirements for identifying neighbouring GSM cells.

8.6.4.1.3.4 Method of test

8.6.4.1.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

Two cells shall be present in the test, Cell 1 is current active TDD cell, cell 2 is a GSM cell. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. The test parameters are given in Tables 8.6.4.1.3.4.1.1, 8.6.4.1.3.4.1.2 and 8.6.4.1.3.4.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3B and 3C shall be used. At the start of time duration T1, the UE may not have any timing information of cell 2. The power level of cell 2 is increased and then reduced, and a measurement report should be triggered at each transition.

Table 8.6.4.1.3.4.1.1: General test parameters for correct reporting of GSM neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Active cell		Cell 1	
Inter-RAT measurement quantity		GSM carrier RSSI	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for Events 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		12 TDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the start of time period T1.
T _{identify abort}	s	5	As specified in section 8.1.2B.5 of [2]
T _{reconfirm abort}	s	5	As specified in section 8.1.2B.5 of [2]
T1	s	10	
T2	s	10	
T3	s	10	

Table 8.6.4.1.3.4.1.2: Cell specific parameters for correct reporting of GSM neighbours in AWGN propagation condition (cell 1)

Parameter	Unit	Cell 1	
		T1, T2, T3	
DL timeslot number		0	1
UTRA RF Channel number		Channel 1	
PCCPCH_Ec/Ior	dB	-3	n.a.
SCH_Ec/Ior	dB	-9	n.a.
SCH_offset		0	n.a.
OCNS_Ec/Ior	dB	-3,12	Note 2
DPCH_Ec/Ior	dB	n.a.	Note 1
Ior/Ioc	dB	6	6
Io, Note 1	dBm / 7.68 MHz	-70	
Propagation condition		AWGN	
Note 1: The DPCH level is controlled by the power control loop			
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior.			

Table 8.6.4.1.3.4.1.3: Cell specific parameters for correct reporting of GSM neighbours in AWGN propagation condition (cell 2)

Parameter	Unit	Cell 2		
		T1	T2	T3
Absolute RF Channel Number		ARFCN 1		
RXLEV	dBm	-85	-75	-85

8.6.4.1.3.4.2 Test Procedure

- 1) The RF parameters are set up according to test T1.(see Table 8.6.4.1.3.4.1.2 and Table 8.6.4.1.3.4.1.3)
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit the MEASUREMENT CONTROL message.
- 5) After 5seconds from the beginning of T1, the SS shall switch the GSM level setting from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 1040ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 7seconds from the beginning of T2, the SS shall switch the GSM level setting from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 3B for cell 2. The measurement reporting delay from the beginning of T3 shall be less than 1040ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 9) After the SS receives the measurement report message in step 8) or 5 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat steps 1-until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions.:

Note: Numbers in brackets after an item e.g “Message Type (10.2.17)” in the IE description are references to clause numbers in TS 25.331 [9] describing that item in more detail.

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	0
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	2 Setup AM RLC Event trigger Not Present
-CHOICE <i>Measurement type</i> -Inter-RAT measurement (10.3.7.27) -Inter-RAT measurement objects list (10.3.7.23) -Inter-RAT measurement quantity (10.3.7.29) -Measurement quantity for UTRAN quality estimate (10.3.7.38) -Filter coefficient -CHOICE mode -Measurement quantity -CHOICE system -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24) -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -CHOICE reported cell -Maximum number of reported cells -Inter-RAT event identity (10.3.7.24) -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -CHOICE reported cell -Maximum number of reported cells	Inter-RAT measurement Not Present 0 TDD PCCPCH_RSCP GSM GSM Carrier RSSI 0 Required Not Present Not Present Inter-RAT measurement reporting criteria 2 Event 3B Not Present Not Present -80 dBm 0 dB 0 ms Report cells within active set or within virtual active set or of the other RAT 2 Event 3C Not Present Not Present -80 dBm 0 dB 0 ms Report cells within active set or within virtual active set or of the other RAT 2
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

First MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	GSM
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	3C
-Inter-frequency cells	1
Inter-RAT cell info indication	Not present

Second MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	GSM
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	3B
-Inter-frequency cells	1
Inter-RAT cell info indication	Not present

8.6.4.1.3.4.3 Method of test

The UE shall send one Event 3C triggered measurement report for cell 2, with a measurement reporting delay less than 1040 ms from the start of time period T2.

The UE shall send one Event 3B triggered measurement report for cell 2, with a measurement reporting delay less than 1040 ms from the start of time period T3.

The UE shall not send any Event 3B or 3C triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90% .

8.6.4.2 Combined UTRA TDD inter-frequency and GSM Cell search under AWGN propagation condition

Editor's note: This section is incomplete. The following aspects are either missing or not yet determined:

- *The Test system uncertainties applicable to this test are undefined*
- *The Test tolerances applicable to this test are undefined*

8.6.4.2.2 1.28 Mcps TDD option

8.6.4.2.2.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH.

The requirements and this test apply to the combined GSM and TDD (1,28Mcps option) UE.

8.6.4.2.2.2 Minimum requirement

This test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements and GSM measurements.

8.6.4.2.2.3 Test Purpose

This test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements and GSM measurements. The test will partly verify the requirements in TS 25.123 section 8.1A.2.3 combined 8.1A.2.6 [2] under AWGN propagation conditions.

8.6.4.2.2.4 Method of test

This test scenario comprised of 2 UTRA TDD cells working on different frequency, and 1 GSM cell. Test parameters are given in Table 8.6.4.2.2.1, 8.6.4.2.2.2, and 8.6.4.2.2.3. Scheduled idle interval of 80ms period as defined in TS25.331 is provided. Two UTRA TDD cells shall be synchronized, i.e. sharing the same frame and timeslot timing.

The test consists of 3 successive time periods, with time duration T1, T2 and T3. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C and 3C shall be used.

Table 8.6.4.2.2.1: General test parameters for combined UTRA TDD inter-frequency and GSM cells search under AWGN propagation conditions

Parameter	Unit	Value	Comment
DPCCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2.
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Active cell		Cell 1	1.28Mcps TDD cell operating on channel 1
Neighbour cell		Cell 2	1.28Mcps TDD cell operating on channel 2
		Cell 3	GSM cell
$T_{\text{non used } 2c}$	dBm	-71	Absolute P-CCPCH RSCP threshold for event 2C
Inter-RAT measurement quantity		GSM carrier RSSI	
BSIC verification required		Required	
$T_{\text{other_RAT}}$	dBm	-80	Absolute GSM carrier RSSI threshold for event 3C
H_{2c}	dB	0	The hysteresis parameter for the event 2C
H_{3c}	dB	0	The hysteresis parameter for the event 3C
TimeToTrigger	ms	0	
Filter coefficient		0	L3 filtering is not used
Monitored cell list size		16 TDD neighbour on channel 1 6 GSM neighbours including ARFCN 1	
Propagation Condition		AWGN	
T1	s	5	During T1, cell 2 and cell 3 shall be powered off.
T2	s	6	
T3	s	8	

Table 8.6.4.2.2.2: Cell specific test parameters for combined UTRA TDD inter-frequency and E-UTRA FDD cell search under fading propagation conditions (cell 1 and cell 2)

Parameter	Unit	Cell 1 (UTRA)						Cell 2 (UTRA)					
		0			DwPTS			0			DwPTS		
Timeslot Number		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number*		Channel 1						Channel 2					
PCCPCH_Ec/lor	dB	-3			0			-3			0		
DwPCH_Ec/lor	dB	-3						-3					
\hat{I}_{or}/I_{oc}	dB	3	3					-Infinity	6				
I_{oc}	dBm/ 1.28 MHz	-70						-70					
PCCPCH RSCP	dBm	-70						-Infinity	-67				
Propagation Condition		AWGN											

Table 8.6.4.2.2.3: Cell specific test parameters for combined UTRA TDD inter-frequency and GSM cell search under AWGN propagation conditions (cell 3)

Parameter	Unit	Cell 3		
		T1	T2	T3
Absolute RF Channel Number		ARFCN 1		
RXLEV	dBm	-Infinity		-75

8.6.4.2.2.5 Test Procedure

- 1) The RF parameters are set up according to test T1.(see Table 8.6.6.1.2.2 and Table 8.6.6.1.2.2).
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.
- 4) SS shall transmit the MEASUREMENT CONTROL message(inter frequency).
- 5) SS shall transmit the MEASUREMENT CONTROL message(event triggered inter RAT).
- 6) After 5seconds from the beginning of T1, the SS shall switch the power setting of cell 2 from T1 to T2.
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5.08s. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 8) After 6seconds from the beginning of T2, the SS shall switch the GSM level setting from T2 to T3.
- 9) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C for cell 2. The measurement reporting delay from the beginning of T3 shall be less than 6.04s. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 10) After the SS receives the measurement report message in step 8) or 8 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 and cell 3 is deleted in the UE.
- 11) Repeat steps 1-9 according to Annex F.6.2 Table F.6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL (Step 4)

Information Element/Group name	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info	0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list	1 Modify AM RLC Event trigger Not Present
-CHOICE <i>Measurement type</i> -Inter-frequency measurement -Inter-frequency measurement objects list -CHOICE inter-frequency cell removal -New inter-frequency cells -Inter-frequency cell id -Frequency info -CHOICE mode -UARFCN(Nt) -Cell info -Cell individual offset -Reference time difference to cell -Read SFN indicator -CHOICE mode -Primary CCPCH info -CHOICE mode -CHOICE TDD option -cell parameters ID -SCTD indicator -Primary CCPCH Tx power -Timeslot list -Cell selection and re-selection info -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode -Measurement quantity for frequency quality estimate	Inter-frequency measurement No inter-frequency cells removed 1 1 TDD Same frequency as channel 2 Not Present Not Present False TDD TDD 1,28 Mcps TDD Set to cell parameters ID of cell 2 FALSE Set to Primary CCPCH Tx power of cell 2 as described in Table 8.6.2.1.2 Not Present Not Present Not Present Inter-frequency reporting criteria 0 TDD Primary CCPCH RSCP
-Inter-frequency reporting quantity	
-UTRA carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode -Timeslot ISCP reporting indicator -Proposed TGSN Reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	TDD FALSE FALSE TRUE FALSE
-Reporting cell status -Measurement validity -CHOICE <i>report criteria</i> -Inter-frequency measurement reporting criteria -Parameters required for each event	Not Present Not Present Inter-frequency measurement reporting criteria 1
-Inter-frequency event identity -Parameters required for each non-used frequenc - Threshold non-used frequency - W non-used frequency	Event 2C -71 1
Physical channel information elements -DPCH compressed mode status info	Not Present

MEASUREMENT CONTROL (Step 5)

Information Element/Group name	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	No present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list	Not Present
-CHOICE <i>Measurement type</i>	Inter-RAT measurement
-Inter-RAT measurement	
-Inter-RAT measurement objects list	Not Present
-Inter-RAT measurement quantity	
-Measurement quantity for UTRAN quality estimate	
- Filter coefficient	0
-CHOICE mode	TDD
-Measurement quantity	PCCPCH RSCP
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
- Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity	
- UTRAN estimated quality	FALSE
- CHOICE system	GSM
- Observed time difference to GSM cell reporting indicator	FALSE
- GSM Carrier RSSI reporting indicator	TRUE
-Reporting cell status	Not Present
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria	
-Inter-RAT event identity	Event 3C
-Threshold other system	-80
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
Physical channel information elements	
-DPCH compressed mode status info	Not present.

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Message Type	
Integrity check info	Not Present
Measurement identity	1
Measured Results	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2
-Non frequency related measurement event results	
-CHOICE mode	TDD
-Primary CCPCH Info	
-CHOICE mode	TDD
-CHOICE TDD Option	1.28 Mcps TDD
-TSTD indicator	TRUE
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

MEASUREMENT REPORT(Step 9)

Information Element	Value/remark
Message Type	
Integrity check info	Not Present
Measurement identity	2
Event results	
-CHOICE event result	Inter-RAT measurement event results
-Inter-frequency event identity	3C
- CHOICE BSIC	
- Non verified BSIC	
- BCCH ARFCN	Same as cell 3

8.6.4.2.2.6 Test Requirement

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 5080ms from the beginning of time period T2.

The UE shall send one Event 3C triggered measurement report for cell 3, with a measurement reporting delay less than 6040ms from the beginning of time period T3.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of events correctly reported during repeated tests shall be at least 90%.

8.6.5 E-UTRA measurements

8.6.5.1 UTRA TDD to E-UTRA FDD cell search under fading propagation conditions

Editor's note: This Test case is incomplete for frequencies above 3GHz

- *The Test system uncertainties applicable above 3GHz are undefined*
- *The Test Tolerances and Test Requirements applicable above 3GHz are undefined*

8.6.5.1.1 Definition and applicability

8.6.5.1.1.1 3,84 Mcps TDD Option

8.6.5.1.1.2 1,28 Mcps TDD Option

The purpose of this test is to verify that the UE makes correct reporting of an event when measuring on E-UTRA FDD cells. This test will partly verify the E-UTRA FDD cell search requirements in TS 25.123 [2] section 8.1A.2.6 under fading propagation conditions.

The requirements and this test apply to release 9 and later releases UTRA 1.28Mcps TDD UEs that support release 8 and later releases E-UTRA FDD release 9 and later releases UTRA 1.28Mcps TDD UEs that support release 8 and later releases E-UTRA TDD.

8.6.5.1.1.3 7,68 Mcps TDD Option

8.6.5.1.2 Minimum requirement

8.6.5.1.2.1 3,84 Mcps TDD Option

8.6.5.1.2.2 1,28 Mcps TDD Option

The requirements in this section apply only to UEs supporting 1.28Mcps TDD and E-UTRAN FDD.

1) For a UE requiring idle intervals to perform E-UTRAN FDD measurements:

- a minimum idle interval of 6ms shall be scheduled by the network.
- when signalled by UTRAN, the UE shall continuously measure previously detected E-UTRAN FDD cells and search for new E-UTRAN FDD cells.

2) For a UE not requiring idle intervals to perform E-UTRAN FDD measurements:

- the UE shall measure either all E-UTRAN FDD cells present in the monitored set or, if only frequencies are provided in the neighbour cell list, the strongest cells present in the detected set, up to the monitoring capabilities of the UE.
- the relevant requirements for E-UTRAN FDD dedicated mode when a [TBD] channel is assigned in 3GPP TS 36.133 [26] shall apply. This is further detailed in the following subclauses.

When idle intervals are used for E-UTRAN FDD measurements, the UE shall be able to identify a new detectable E-UTRAN FDD cell within

$$T_{\text{Identify E-UTRAN FDD}} = T_{\text{Basic_Identify_E-UTRAN FDD}} \cdot \frac{T_{\text{Measurement_Period_E-UTRAN FDD}}}{T_{\text{E-UTRAN FDD}}} \quad \text{ms};$$

If the UE does not need idle intervals to perform E-UTRAN FDD measurements, the UE shall be able to identify a new detectable E-UTRAN FDD cell within $T_{\text{Basic_Identify_E-UTRAN FDD}}$ ms.

Where:

$T_{E-UTRAN\ FDD}$: This is the minimum time that is available for E-UTRAN FDD measurements during the measurement period $T_{Measurement_Period_E-UTRAN\ FDD}$ with an arbitrarily chosen timing. The minimum time per idle interval is calculated by assuming $2*0.5$ ms for implementation margin.

$$T_{Basic_Identify_E-UTRAN\ FDD} = 480\text{ ms}$$

When L3 filtering is used an additional delay can be expected.

An E-UTRAN FDD cell shall be considered detectable when:

- RSRP related side condition given in Section 9.1 of TS 36.133 [26] are fulfilled for a corresponding Band,
- $SCH_RP|_{dBm} \geq -127$ dBm for Bands 1, 4, 6, 10, defined in TS 36.101 [27] and $SCH_E_s/Iot \geq -4$ dB,
- $SCH_RP|_{dBm} \geq -126$ dBm for Band 9 defined in [26] and $SCH_E_s/Iot \geq -4$ dB,
- $SCH_RP|_{dBm} \geq -125$ dBm for Bands 2, 5, 7, 11, 17 defined in TS 36.101 [27] and $SCH_E_s/Iot \geq -4$ dB,
- $SCH_RP|_{dBm} \geq -124$ dBm for Bands 3, 8, 12, 13, 14 defined in TS 36.101 [27] and $SCH_E_s/Iot \geq -4$ dB.

When idle intervals are scheduled for E-UTRAN FDD measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in TS 25.123 [2] sub-clause 9.1.1.5a and 9.1.1.5b with measurement period of $T_{Measurement_Period_E-UTRAN\ FDD} = 480 \times N_{Freq}$ ms where N_{Freq} is the number of FDD frequencies indicated in the E-UTRAN measurement control information.

The UE shall be capable of performing RSRP measurements of at least 4 E-UTRAN FDD cells per E-UTRAN FDD frequency for up to 3 FDD E-UTRAN frequencies.

Reported measurements contained in periodically triggered measurement reports shall meet the requirements in TS 25.123 [2] section 9.

Reported measurements contained in event triggered measurement reports shall meet the requirements in TS 25.123 [2] section 9.

The UE shall not send any event triggered measurement reports, as long as no reporting criteria are fulfilled.

The measurement reporting delay is defined as the time between an event that will trigger a measurement report and the point when the UE starts to transmit the measurement report over the air interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is: $[2] \times TTI_{DCCH}$. This measurement reporting delay excludes a delay which caused by no UL resources for UE to send the measurement report.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{identify\ E-UTRAN\ FDD}$ defined in TS 25.123 [2] Section 8.1A.2.6.1. When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{identify\ E-UTRAN\ FDD}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement_Period_E-UTRAN_FDD}$ provided the timing to that cell has not changed more than [FFS] while idle interval has not been available and the L3 filter has not been used.

The normative reference for this requirement is TS 25.123 [2] clause 8.1A.2.6 and A.8.5.1.

8.6.5.1.2.3 7,68 Mcps TDD Option

8.6.5.1.3 Test purpose

8.6.5.1.3.1 3,84 Mcps TDD Option

8.6.5.1.3.2 1,28 Mcps TDD Option

To verify that the UE makes correct reporting of an event when measuring on E-UTRA FDD cells.

- 8.6.5.1.3.3 7,68 Mcps TDD Option
- 8.6.5.1.4 Method of test
- 8.6.5.1.4.1 3,84 Mcps TDD Option
- 8.6.5.1.4.2 1,28 Mcps TDD Option
- 8.6.5.1.4.2.1 Initial conditions

Test environment : normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested : see table J.2 in Annex J.

This test scenario comprised of 1 UTRA TDD serving cell, and 1 E-UTRA FDD cell to be searched. Test parameters are given in Table 8.6.5.1.4.2.1-1, 8.6.5.1.4.2.1-2, and 8.6.5.1.4.2.1-3. Idle interval of 80ms period as defined in TS25.331 [9] is provided.

In the measurement control information, it is indicated to the UE that event-triggered reporting with Event 3c is used. The test consists of two successive time periods, with time duration of T1 and T2 respectively.

Table 8.6.5.1.4.2.1-1: General test parameters for UTRA TDD to E-UTRA FDD cell search under fading propagation conditions

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0.
Active cell		Cell 1	1.28Mcps TDD cell
Neighbour cell		Cell 2	E-UTRA FDD cell
CP length of cell 2		normal	
Idle intervals period	ms	80	As specified in TS 25.331 [9]
$T_{\text{other_RAT}}$	dBm	-100	Absolute RSRP threshold for event 3c
$CIO_{\text{other_RAT}}$	dB	0	Cell individual offset
H_{3c}	dB	0	Hysteresis parameter for event 3c
TimeToTrigger	dB	0	
Filter coefficient		0	L3 filtering is not used
T1	s	5	During T1, cell 2 shall be powered off, and during the off time the physical layer cell identity shall be changed.
T2	s	10	

Table 8.6.5.1.4.2.1-2: Cell specific test parameters for cell search UTRA TDD to E-UTRA FDD test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
		0		DwPTS	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number*		Channel 1			
PCCPCH_Ec/lor	dB	-3	-3		
DwPCH_Ec/lor	dB			0	0
OCNS_Ec/lor	dB	-3	-3		
\hat{I}_{or}/I_{oc}	dB	3	3	3	3
I_{oc}	dBm/1.28 MHz	-70			
PCCPCH RSCP	dBm	-70	-70	n.a.	n.a.
Propagation Condition		Case 3			
* Note: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.					

Table 8.6.5.1.4.2.1-3: Cell specific test parameters for cell search UTRA TDD to E-UTRA FDD test case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2
E-UTRA RF Channel Number		2	
BW _{channel}	MHz	10	
OCNG Pattern defined in D.1.2 (OP.2 FDD) in TS 36.521-3 [33]		OP.2 FDD	OP.2 FDD
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RB	dB		
SSS_RB	dB		
PCFICH_RA	dB		
PHICH_RA	dB		
PHICH_RB	dB		
PDCCH_RA	dB		
PDCCH_RB	dB		
PDSCH_RA	dB		
PDSCH_RB	dB		
OCNG_RA ^{NOTE 1}	dB		
OCNG_RB ^{NOTE 1}	dB		
\hat{E}_s / N_{oc}	dB		
N_{oc}	dBm/15kHz	-98	
\hat{E}_s / I_{ot}	dB	-Infinity	9
RSRP ^{NOTE 2}	dBm/15kHz	-Infinity	-89
SCH_RP ^{NOTE 2}	dBm/15kHz	-Infinity	-89
I_o ^{NOTE 2}	dBm/9MHz	-70.22	-60.70
Propagation Condition		ETU70	
<p>Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: RSRP, SCH_RP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 3: The resources for uplink transmission are assigned to the UE prior to the start of time period T2.</p>			

8.6.5.1.4.2.2 Test Procedure

- 1) The RF parameters are set up according to T1 in table 8.6.5.1.5.2-1 and table 8.6.5.1.5.2-2.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds from the beginning of T1, the SS shall switch the E-UTRA FDD Cell 2 power settings from T1 to T2 according to table 8.6.5.1.5.2-2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 3c for Cell 2. The measurement reporting delay from the beginning of T2 shall be less than 7.7s. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 10 seconds from the beginning of T2, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 8) Repeat steps 1-7 until the confidence level according to Tables G.2.3-1 in TS 36.521-3 [33] is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 4.4 and 4.7B.1 of TS 36.508 [28], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Derivation Path: 36.508 [28], clause 4.7B.1 Table 4.7B.1-3: MEASUREMENT CONTROL			
Information Element	Value/remark	Comment	Condition
Message Type			
RRC transaction identifier	0		
Measurement Identity	1		
CHOICE Measurement type	Inter-RAT measurement		
- CHOICE report criteria	Inter-RAT measurement reporting criteria		
- Parameters required for each event	1 entry		
- Inter-RAT event identity	3c		
- Threshold other system	-75 (-100 dBm)	When measurement quantity is RSRP, range should be (-115..-19), the actual value = Threshold other system - 25 [dBm]	
- Hysteresis	0 dB		
- Time to trigger	0 ms		
- Reporting cell status			
- CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT		
- Maximum number of reported cells	2		
- Idle Interval Information			
- k	3 (80 ms)	The actual idle interval period equal to 2^k radio frames.	
- offset	Not present	Default value is 0.	

- 8.6.5.1.4.3 7,68 Mcps TDD Option
- 8.6.5.1.5 Test requirements
- 8.6.5.1.5.1 3,84 Mcps TDD Option
- 8.6.5.1.5.2 1,28 Mcps TDD Option

Table 8.6.5.1.5.2-1: Cell specific test parameters for cell search UTRA TDD to E-UTRA FDD test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
		0		DwPTS	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number*		Channel 1			
PCCPCH_Ec/lor	dB	-3	-3		
DwPCH_Ec/lor	dB			0	0
OCNS_Ec/lor	dB	-3	-3		
\hat{I}_{or}/I_{oc}	dB	3	3	3	3
I_{oc}	dBm/1.28 MHz	-70			
PCCPCH RSCP	dBm	-70	-70	n.a.	n.a.
Propagation Condition		Case 3			
* Note: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.					

Table 8.6.5.1.5.2-2: Cell specific test parameters for cell search UTRA TDD to E-UTRA FDD test case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2
E-UTRA RF Channel Number		2	
BWchannel	MHz	10	
OCNG Pattern defined in D.1.2 (OP.2 FDD) in TS 36.521-3 [33]		OP.2 FDD	OP.2 FDD
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RB	dB		
SSS_RB	dB		
PCFICH_RA	dB		
PHICH_RA	dB		
PHICH_RB	dB		
PDCCH_RA	dB		
PDCCH_RB	dB		
PDSCH_RA	dB		
PDSCH_RB	dB		
OCNG_RA ^{NOTE 1}	dB		
OCNG_RB ^{NOTE 1}	dB		
\hat{E}_s / N_{oc}	dB		
N_{oc}	dBm/15kHz	-98	
\hat{E}_s / I_{ot}	dB	-Infinity	9
RSRP ^{NOTE 2}	dBm/15kHz	-Infinity	-89
SCH_RP ^{NOTE 2}	dBm/15kHz	-Infinity	-89
I_o ^{NOTE 2}	dBm/9MHz	-70.22	-60.70
Propagation Condition		ETU70	
<p>Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: RSRP, SCH_RP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 3: The resources for uplink transmission are assigned to the UE prior to the start of time period T2.</p>			

The UE shall send one Event 3c triggered measurement report, with a measurement reporting delay less than 7.7s from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: The actual overall delays measured in the test may be up to $2xTTI_{DCCH}$ higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in DCCH.

8.6.5.1.5.3 7,68 Mcps TDD Option

8.6.5.2 UTRA TDD to E-UTRA TDD cell search under fading propagation conditions

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.6.5.2.1 Definition and applicability

8.6.5.2.1.1 3,84 Mcps TDD Option

8.6.5.2.1.2 1,28 Mcps TDD Option

The purpose of this test is to verify that the UE makes correct reporting of an event when measuring on E-UTRA TDD cells. This test will partly verify the E-UTRA TDD cell search requirements in TS 25.123 [2] section 8.1A.2.7 under fading propagation conditions.

The requirements and this test apply to the combined TDD (1.28 Mcps option) and E-UTRA TDD UE of Release 8 and later.

8.6.5.2.1.3 7,68 Mcps TDD Option

8.6.5.2.2 Minimum requirement

8.6.5.2.2.1 3,84 Mcps TDD Option

8.6.5.2.2.2 1,28 Mcps TDD Option

The requirements in this section apply only to UEs supporting 1.28Mcps TDD and E-UTRAN TDD.

1) For a UE requiring idle intervals to perform E-UTRAN TDD measurements:

- a minimum idle interval of 6ms shall be scheduled by the network.
- when signalled by UTRAN, the UE shall continuously measure previously detected E-UTRAN TDD cells and search for new E-UTRAN TDD cells.

2) For a UE not requiring idle intervals to perform E-UTRAN TDD measurements:

- the UE shall measure either all E-UTRAN TDD cells present in the monitored set or, if only frequencies are provided in the neighbour cell list, the strongest cells present in the detected set, up to the monitoring capabilities of the UE.
- the relevant requirements for E-UTRAN TDD dedicated mode when a [TBD] channel is assigned in 3GPP TS 36.133 [26] shall apply. This is further detailed in the following subclauses.

When idle intervals are used for E-UTRAN measurements, the UE shall be able to identify a new detectable E-UTRAN TDD cell within

$$T_{\text{Identify E-UTRAN TDD}} = T_{\text{Basic_Identify_E-UTRAN TDD}} \cdot \frac{T_{\text{Measurement_Period_E-UTRAN TDD}}}{T_{\text{E-UTRAN TDD}}} \text{ ms};$$

If the UE does not need idle intervals to perform E-UTRAN TDD measurements, the UE shall be able to identify a new detectable E-UTRAN TDD cell within $T_{\text{Basic_Identify_E-UTRAN TDD}}$ ms.

Where:

$T_{\text{E-UTRAN TDD}}$: This is the minimum time that is available for E-UTRAN TDD measurements during the measurement period $T_{\text{Measurement_Period_E-UTRAN TDD}}$ with an arbitrarily chosen timing. The minimum time per idle interval is calculated by assuming $2 \cdot 0.5$ ms for implementation margin.

$$T_{\text{Basic_Identify_E-UTRAN TDD}} = 480 \text{ ms}$$

When L3 filtering is used an additional delay can be expected.

An E-UTRAN TDD cell shall be considered detectable when

- RSRP related side condition given in Section 9.1 of TS 36.133 [26] are fulfilled for a corresponding Band,
- $\text{SCH_RP}|_{\text{dBm}} \geq -127$ dBm for Bands 33, 34, 35, 36, 37, 38, 39 and 40 defined in TS 36.101 [27] and $\text{SCH_}\hat{\text{E}}\text{s}/\text{Iot} \geq -4$ dB,

When idle intervals are scheduled for E-UTRAN TDD measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in TS 25.123 [2] sub-clause 9.1.1.5a and 9.1.1.5b with measurement period of $T_{\text{Measurement_Period_E-UTRAN_TDD}} = 480 \times N_{\text{Freq}}$ ms where N_{Freq} is the number of TDD frequencies indicated in the E-UTRAN measurement control information.

The UE shall be capable of performing RSRP measurements of at least 4 E-UTRAN TDD cells per E-UTRAN TDD frequency for up to 3 E-UTRAN TDD frequencies.

Reported measurements contained in periodically triggered measurement reports shall meet the requirements in TS 25.123 [2] section 9.

Reported measurements contained in event triggered measurement reports shall meet the requirements in section TS 25.123 [2] 9.

The UE shall not send any event triggered measurement reports, as long as no reporting criteria are fulfilled.

The measurement reporting delay is defined as the time between an event that will trigger a measurement report and the point when the UE starts to transmit the measurement report over the air interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is: $[2] \times TTI_{\text{DCCH}}$. This measurement reporting delay excludes a delay which caused by no UL resources for UE to send the measurement report.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{Identify_E-UTRAN_TDD}}$ defined in TS 25.123 [2] Section 8.1A.2.7.1. When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{\text{Identify_E-UTRAN_TDD}}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{\text{Measurement_Period_E-UTRAN_TDD}}$ provided the timing to that cell has not changed more than [FFS] while idle interval has not been available and the L3 filter has not been used.

The normative reference for this requirement is TS 25.123 [2] clause 8.1A.2.7 and A.8.5.2

8.6.5.2.2.3 7,68 Mcps TDD Option

8.6.5.2.3 Test purpose

8.6.5.2.3.1 3,84 Mcps TDD Option

8.6.5.2.3.2 1,28 Mcps TDD Option

To verify that the UE makes correct reporting of an event when measuring on E-UTRA TDD cells.

8.6.5.2.3.3 7,68 Mcps TDD Option

8.6.5.2.4 Method of test

8.6.5.2.4.1 3,84 Mcps TDD Option

8.6.5.2.4.2 1,28 Mcps TDD Option

8.6.5.2.4.2.1 Initial conditions

Test environment : normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested : see table J.2 in Annex J.

This test scenario comprised of Cell 1 UTRA TDD serving cell, and Cell 2 E-UTRA TDD cell to be searched. Test parameters are given in Table A.8.5.2.1.2-1, A.8.5.2.1.2-2, and A.8.5.2.1.2-3. Idle interval of 80ms period as defined in TS25.331 is provided.

In the measurement control information, it is indicated to the UE that event-triggered reporting with Event 3c is used. The test consists of two successive time periods, with time duration of T1 and T2 respectively.

Table 8.6.5.2.4.2.1-1: General test parameters for UTRA TDD to E-UTRA TDD cell search under fading propagation conditions

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0.
Active cell		Cell 1	1.28Mcps TDD cell
Neighbour cell		Cell 2	E-UTRA TDD cell
Uplink-downlink configuration of cell 2		1	As specified in table 4.2.2 in TS 36.211
Special subframe configuration of cell 2		6	As specified in table 4.2.1 in TS 36.211
CP length of cell 2		normal	
Idle intervals period	ms	80	As specified in TS 25.331
$T_{\text{other_RAT}}$	dBm	-100	Absolute RSRP threshold for event 3c
$CIO_{\text{other_RAT}}$	dB	0	Cell individual offset
H_{3c}	dB	0	Hysteresis parameter for event 3c
Time To Trigger	dB	0	
Filter coefficient		0	L3 filtering is not used
T1	s	5	During T1, cell 2 shall be powered off, and during the off time the physical layer cell identity shall be changed.
T2	s	10	

Table 8.6.5.2.4.2.1-2: Cell specific test parameters for cell search UTRA TDD to E-UTRA TDD test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
		0		DwPTS	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number*		Channel 1			
PCCPCH E_c/I_{or}	dB	-3	-3		
DwPCH E_c/I_{or}	dB			0	0
OCNS E_c/I_{or}	dB	-3	-3		
\hat{I}_{or}/I_{oc}	dB	3	3	3	3
I_{oc}	dBm/1.28 MHz	-70			
PCCPCH RSCP	dBm	-70	-70	n.a.	n.a.
Propagation Condition		Case 3			
* Note:	In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.				

Table 8.6.5.2.4.2.1-3: Cell specific test parameters for cell search UTRA TDD to E-UTRA TDD test case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2
E-UTRA RF Channel Number		2	
BW_{channel}	MHz	10	
OCNG Pattern defined in D.2.2 (OP.2 TDD) in TS 36.521-3 [33]		OP.2 TDD	OP.2 TDD
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RB	dB		
SSS_RB	dB		
PCFICH_RA	dB		
PHICH_RA	dB		
PHICH_RB	dB		
PDCCH_RA	dB		
PDCCH_RB	dB		
PDSCH_RA	dB		
PDSCH_RB	dB		
OCNG_RA ^{NOTE 1}	dB		
OCNG_RB ^{NOTE 1}	dB		
\hat{E}_s / N_{oc}	dB		
N_{oc}	dBm/15kHz	-98	
\hat{E}_s / I_{ot}	dB	-Infinity	9
RSRP ^{NOTE 2}	dBm/15kHz	-Infinity	-89
SCH_RP ^{NOTE 2}	dBm/15kHz	-Infinity	-89
I_o ^{NOTE 2}	dBm/9MHz	-70.22	-60.70
Propagation Condition		ETU70	
<p>Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: RSRP, SCH_RP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 3: The resources for uplink transmission are assigned to the UE prior to the start of time period T2.</p>			

8.6.5.2.4.2.2 Test Procedure

- 1) The RF parameters are set up according to T1 in table 8.6.5.2.5.2-1 and table 8.6.5.2.5.2-2.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds from the beginning of T1, the SS shall switch the E-UTRA TDD Cell 2 power settings from T1 to T2 according to table 8.6.5.2.5.2-2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 3c for Cell 2. The measurement reporting delay from the beginning of T2 shall be less than 7.7s. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 10 seconds from the beginning of T2, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 8) Repeat steps 1-7 until the confidence level according to Tables G.2.3-1 in TS 36.521-3 [33] is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and clause 4.4 and 4.7B.1 of TS 36.508 [28], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Derivation Path: 36.508 [28], clause 4.7B.1 Table 4.7B.1-3: MEASUREMENT CONTROL			
Information Element	Value/remark	Comment	Condition
Message Type			
RRC transaction identifier	0		
Measurement Identity	1		
CHOICE Measurement type	Inter-RAT measurement		
- CHOICE report criteria	Inter-RAT measurement reporting criteria		
- Parameters required for each event	1 entry		
- Inter-RAT event identity	3c		
- Threshold other system	-75 (-100 dBm)	When measurement quantity is RSRP, range should be (-115..-19), the actual value = Threshold other system - 25 [dBm]	
- Hysteresis	0 dB		
- Time to trigger	0 ms		
- Reporting cell status			
- CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT		
- Maximum number of reported cells	2		
- Idle Interval Information			
- k	3 (80 ms)	The actual idle interval period equal to 2 ^k radio frames.	
- offset	Not present	Default value is 0.	

- 8.6.5.2.4.3 7,68 Mcps TDD Option
- 8.6.5.2.5 Test requirements
- 8.6.5.2.5.1 3,84 Mcps TDD Option
- 8.6.5.2.5.2 1,28 Mcps TDD Option

Table 8.6.5.2.5.2-1: Cell specific test parameters for cell search UTRA TDD to E-UTRA TDD test case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
		0		DwPTS	
Timeslot Number		T1	T2	T1	T2
UTRA RF Channel Number*		Channel 1			
PCCPCH_Ec/I _{or}	dB	-3	-3		
DwPCH_Ec/I _{or}	dB			0	0
OCNS_Ec/I _{or}	dB	-3	-3		
\hat{I}_{or}/I_{oc}	dB	3	3	3	3
I_{oc}	dBm/1.28 MHz	-70			
PCCPCH RSCP	dBm	-70	-70	n.a.	n.a.
Propagation Condition		Case 3			
* Note: In the case of multi-frequency cell, the UTRA RF Channel Number is the primary frequency's channel number.					

Table 8.6.5.2.5.2-2: Cell specific test parameters for cell search UTRA TDD to E-UTRA TDD test case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2
E-UTRA RF Channel Number		2	
BWchannel	MHz	10	
OCNG Pattern defined in D.2.2 (OP.2 TDD) in TS 36.521-3 [33]		OP.2 TDD	OP.2 TDD
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RB	dB		
SSS_RB	dB		
PCFICH_RA	dB		
PHICH_RA	dB		
PHICH_RB	dB		
PDCCH_RA	dB		
PDCCH_RB	dB		
PDSCH_RA	dB		
PDSCH_RB	dB		
OCNG_RA ^{NOTE 1}	dB		
OCNG_RB ^{NOTE 1}	dB		
\hat{E}_s / N_{oc}	dB		
N_{oc}	dBm/15kHz	-98	
\hat{E}_s / I_{ot}	dB	-Infinity	9
RSRP ^{NOTE 2}	dBm/15kHz	-Infinity	-89
SCH_RP ^{NOTE 2}	dBm/15kHz	-Infinity	-89
I_o ^{NOTE 2}	dBm/9MHz	-70.22	-60.70
Propagation Condition		ETU70	
<p>Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: RSRP, SCH_RP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 3: The resources for uplink transmission are assigned to the UE prior to the start of time period T2.</p>			

The UE shall send one Event 3c triggered measurement report, with a measurement reporting delay less than 7.7s from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

NOTE: The actual overall delays measured in the test may be up to $2 \times TTI_{DCCH}$ higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in DCCH.

8.6.5.2.5.3 7,68 Mcps TDD Option

8.6.5.3 Combined UTRA TDD inter-frequency and E-UTRA FDD cell search under fading propagation conditions

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.6.5.3.1 Definition and applicability

8.6.5.3.1.1 3,84 Mcps TDD Option

8.6.5.3.1.2 1,28 Mcps TDD Option

The cell search delay is defined as the time from the beginning of a cell becoming detectable and fulfilling an event triggering condition, to the moment when the UE sends event triggered measurement report for this cell. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH.

The requirements and this test apply to release 9 and later releases UTRA 1.28Mcps TDD UEs that support release 8 and later releases E-UTRA FDD.

8.6.5.3.1.3 7,68 Mcps TDD Option

8.6.5.3.2 Minimum requirement

8.6.5.3.2.1 3,84 Mcps TDD Option

8.6.5.3.2.2 1,28 Mcps TDD Option

The UE shall send one Event 2B triggered measurement report for inter-frequency UTRA TDD cell (Cell2), with a measurement reporting delay less than 5s from the beginning of time period T2.

The UE shall send one Event 3a triggered measurement report for E-UTRA FDD cell (Cell3), with a measurement reporting delay less than 4270ms from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90% .

NOTE: The actual overall delays measured in the test may be up to $2xTTI_{DCCH}$ higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in DCCH.

8.6.5.3.2.3 7,68 Mcps TDD Option

8.6.5.3.3 Test purpose

8.6.5.3.3.1 3,84 Mcps TDD Option

8.6.5.3.3.2 1,28 Mcps TDD Option

The purpose of this test is to verify that the UE makes correct reporting of an event within the required times when doing inter frequency and E-UTRA FDD measurements. To verify that the UE meets the minimum time requirements for identifying neighbouring inter-frequency TDD cell and E-UTRA FDD cell. The test will partly verify the requirements in section 8.1A.2.3 combined 8.1A.2.6 and 9.1 of [2] under fading propagation conditions.

8.6.5.3.3.3 7,68 Mcps TDD Option

8.6.5.3.4 Method of test

8.6.5.3.4.1 3,84 Mcps TDD Option

8.6.5.3.4.2 1,28 Mcps TDD Option

8.6.5.3.4.2.1 Initial conditions

Test environment : normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested : see table J.2 in Annex J.

This test scenario comprised of 2 UTRA TDD cells working on different frequency, and 1 E-UTRA FDD cell. General test parameters are given in the table 8.6.5.3.4.2-1, and they are signalled from test device. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2B and Event 3A shall be used. New measurement control information, which defines neighbour cells etc., is always sent before the event starts. Scheduled idle interval of 80ms period as defined in TS25.331 is provided. Two UTRA TDD cells shall be synchronised, i.e. sharing the same frame and timeslot timing.

The test consists of two successive time periods, with time duration of T1 and T2 respectively. The cell specific test parameters are shown in table 8.6.5.3.4.2-2 and table 8.6.5.3.4.2-3.

Table 8.6.5.3.4.2-1: General test parameters for combined UTRA TDD inter-frequency and E-UTRA FDD cells search under fading propagation conditions

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2. The DPCH is located in an other timeslot than 0.
Active cell		Cell 1	1.28Mcps TDD cell operating on channel 1
Neighbour cell		Cell 2	1.28Mcps TDD cell operating on channel 2
		Cell 3	E-UTRA FDD cell
CP length of cell 3		Normal	
Idle intervals period	ms	80	As specified in TS 25.331
$T_{used\ 2b}$	dBm	-73	Absolute P-CCPCH RSCP threshold for event 2B
$T_{non\ used\ 2b}$	dBm	-82	Absolute P-CCPCH RSCP threshold for event 2B
T_{used}	dBm	-73	Absolute P-CCPCH RSCP threshold for event 3A
T_{other_RAT}	dBm	-100	Absolute RSRP threshold for event 3A
H_{2b}	dB	0	The hysteresis parameter for the event 2B
H_{3a}	dB	0	The hysteresis parameter for the event 3A
CIO_{other_RAT}	dB	0	Cell individual offset for the cell of the other system
TimeToTrigger	ms	0	
Filter coefficient		0	L3 filtering is not used
Monitored cell list size		24 on channel 1 16 on channel 2	
T1	s	5	During T1, cell 2 and cell 3 shall be powered off, and during the off time the physical layer cell identity shall be changed.
T2	s	7	

Table 8.6.5.3.4.2-2: Cell specific test parameters for combined UTRA TDD inter-frequency and E-UTRA FDD cell search under fading propagation conditions (cell 1 and cell 2)

Parameter	Unit	Cell 1 (UTRA)				Cell 2 (UTRA)			
		0		DwPTS		0		DwPTS	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number ^{Note 1}		Channel 1				Channel 2			
PCCPCH_Ec/Ior	dB	-3				-3			
DwPCH_Ec/Ior	dB	0				0			
OCNS_Ec/Ior	dB	-3				-3			
\hat{I}_{or}/I_{oc}	dB	4	4	4	4	-Infinity	12	-Infinity	12
I_{oc}	dBm/ 1.28 MHz	-80							
PCCPCH_RSCP ^{Note 2}	dBm	-79	-79	n.a.		-Infinity	-71	n.a.	
I_o ^{Note 2}	dBm/ 1.28 MHz	-74.54	-74.54	-74.54	-74.54	-80.00	-67.73	-80.00	-67.73
Propagation Condition		AWGN				Case 3			
<p>Nnot 1: In the case of multi-frequency network, the UTRA RF Channel Number can be set for the primary frequency in this test.</p> <p>Note 2: PCCPCH_RSCP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 3: The DPCH of all cells are located in a timeslot other than 0.</p>									

Table 8.6.5.3.4.2-3: Cell specific test parameters for combined UTRA TDD inter-frequency and E-UTRA FDD cell search under fading propagation conditions (cell 3)

Parameter	Unit	Cell 3	
		T1	T2
E-UTRA RF Channel Number		3	
BW_{channel}	MHz	10	
OCNG Pattern defined in D.1.2 (OP.2 FDD) in TS 36. 521-3 [33]		OP.2 FDD	OP.2 FDD
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RB	dB		
SSS_RB	dB		
PCFICH_RA	dB		
PHICH_RA	dB		
PHICH_RB	dB		
PDCCH_RA	dB		
PDCCH_RB	dB		
PDSCH_RA	dB		
PDSCH_RB	dB		
OCNG_RA ^{Note 1}	dB		
OCNG_RB ^{Note 1}	dB		
\hat{E}_s / N_{oc}	dB		
N_{oc}	dBm/15kHz	-98	
\hat{E}_s / I_{ot}	dB	-Infinity	9
RSRP ^{Note 3}	dBm/15kHz	-Infinity	-89
SCH_RP ^{Note 3}	dBm/15kHz	-Infinity	-89
I_o ^{Note 3}	dBm/9MHz	-70.22	-60.70
Propagation Condition		ETU70 (Note 4)	
<p>Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: The resources for uplink transmission are assigned to the UE prior to the start of time period T2.</p> <p>Note 3: RSRP, SCH_RP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 4: ETU70 propagation conditions are specified in Annex B.2 of 3GPP TS 36.101.</p>			

8.6.5.3.4.2.2 Test Procedure

- 1) The UE is switched on.
- 2) The RF parameters are set up according to T1 in tables 8.6.5.3.5.2-1 and 8.6.5.3.5.2-2.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.2 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message (event 2B for inter frequency).
- 5) SS shall transmit a MEASUREMENT CONTROL message (event 3A for inter-RAT).
- 6) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 according to tables 8.6.5.3.5.2-1 and 8.6.5.3.5.2-2.
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event 3A for cell 3. The measurement reporting delay from the beginning of T2 shall be less than 4270ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 2B for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5s. If the UE fails to report the event within the

required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

9) After 7 seconds from the beginning of T2, the connection will be released, and the UE will enter IDLE state.

10) Repeat steps 2-9 until the confidence level according to Tables G.2.3-1 in TS 36.521-3 [33] is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 4.4 and 4.7B.1 of TS 36.508 [28], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17 in TS25.331)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
- message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AMRLC
-Measurement Report Transfer Mode	Event trigger
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE <i>mode</i>	TDD
-UARFCN(Nt)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE TDD option	1,28 Mcps TDD
-cell parameters ID	Set to cell parameters ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2 as described in Table 8.6.5.3.4.2-2
-Timeslot list	Not Present
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i>	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity	Event 2B

Information Element/Group name	Value/Remark
-Threshold used frequency -W Used frequency -Hysteresis -Time to trigger -Reporting Cell Status (10.3..61) -CHOICE reported cell	-73 0 0 dB 0 ms
-Maximum number of reported cells -Parameters required for each non-used frequency - Threshold non-used frequency - W non-used frequency	Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency 3 -82 0
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT CONTROL message (step 5):

Derivation Path: 36.508 [28], clause 4.7B.1 Table 4.7B.1-3: MEASUREMENT CONTROL			
Information Element	Value/remark	Comment	Condition
Message Type			
RRC transaction identifier	0		
Measurement Identity	2		
CHOICE Measurement type	Inter-RAT measurement		
- CHOICE report criteria	Inter-RAT measurement reporting criteria		
- Parameters required for each event	1 entry		
- Inter-RAT event identity	3a		
- Threshold own system	-73 dBm		
- W	0		
- Threshold other system	-75 (-100 dBm)	When measurement quantity is RSRP, range should be (-115..-19), the actual value = Threshold other system - 25 [dBm]	
- Hysteresis	0 dB		
- Time to trigger	0 ms		
- Reporting cell status			
- CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT		
- Maximum number of reported cells	2		
- Idle Interval Information			
- k	3 (80 ms)	The actual idle interval period equal to 2 ^k radio frames.	
- offset	Not present	Default value is 0.	

- 8.6.5.3.4.2.3 7,68 Mcps TDD Option
- 8.6.5.3.5 Test requirements
- 8.6.5.3.5.1 3,84 Mcps TDD Option
- 8.6.5.3.5.2 1,28 Mcps TDD Option

Table 8.6.5.3.5.2-1: Cell specific test parameters for combined UTRA TDD inter-frequency and E-UTRA FDD cell search under fading propagation conditions (cell 1 and cell 2)

Parameter	Unit	Cell 1 (UTRA)				Cell 2 (UTRA)			
		0		DwPTS		0		DwPTS	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number ^{Note 1}		Channel 1				Channel 2			
PCCPCH_Ec/Ior	dB	-3				-3			
DwPCH_Ec/Ior	dB			0				0	
OCNS_Ec/Ior	dB	-3				-3			
\hat{I}_{or}/I_{oc}	dB	3.20	3.20	3.20	3.20	-Infinity	12.00	-Infinity	12.00
I_{oc}	dBm/ 1.28 MHz	-80.00							
PCCPCH_RSCP ^{Note 2}	dBm	-79.80	-79.80	n.a.		-Infinity	-71.00	n.a.	
I_o ^{Note 2}	dBm/ 1.28 MHz	-75.10	-75.10	-75.10	-75.10	-80.00	-67.73	-80.00	-67.73
Propagation Condition		AWGN				Case 3			
<p>Nnot 1: In the case of multi-frequency network, the UTRA RF Channel Number can be set for the primary frequency in this test.</p> <p>Note 2: PCCPCH_RSCP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 3: The DPCH of all cells are located in a timeslot other than 0.</p>									

Table 8.6.5.3.5.2-2: Cell specific test parameters for combined UTRA TDD inter-frequency and E-UTRA FDD cell search under fading propagation conditions (cell 3)

Parameter	Unit	Cell 3	
		T1	T2
E-UTRA RF Channel Number		3	
BW_{channel}	MHz	10	
OCNG Pattern defined in D.1.2 (OP.2 FDD) in TS 36.521-3 [33]		OP.2 FDD	OP.2 FDD
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RB	dB		
SSS_RB	dB		
PCFICH_RA	dB		
PHICH_RA	dB		
PHICH_RB	dB		
PDCCH_RA	dB		
PDCCH_RB	dB		
PDSCH_RA	dB		
PDSCH_RB	dB		
OCNG_RA ^{Note 1}	dB		
OCNG_RB ^{Note 1}	dB		
\hat{E}_s/N_{oc}	dB		
N_{oc}	dBm/15kHz	-98.00	
\hat{E}_s/I_{ot}	dB	-Infinity	9.00
RSRP ^{Note 3}	dBm/15kHz	-Infinity	-89.00
SCH_RP ^{Note 3}	dBm/15kHz	-Infinity	-89.00
I_o ^{Note 3}	dBm/9MHz	-70.22	-60.70
Propagation Condition		ETU70 (Note 4)	
Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols. Note 2: The resources for uplink transmission are assigned to the UE prior to the start of time period T2. Note 3: RSRP, SCH_RP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves. Note 4: ETU70 propagation conditions are specified in Annex B.2 of 3GPP TS 36.101.			

The UE shall not send any event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

8.6.5.3.5.3 7,68 Mcps TDD Option

8.6.5.4 Combined UTRA TDD inter-frequency and E-UTRA TDD cell search under fading propagation conditions

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.6.5.4.1 Definition and applicability

8.6.5.4.1.1 3,84 Mcps TDD Option

8.6.5.4.1.2 1,28 Mcps TDD Option

The cell search delay is defined as the time from the beginning of a cell becoming detectable and fulfilling an event triggering condition, to the moment when the UE sends event triggered measurement report for this cell. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH.

The requirements and this test apply to release 9 and later releases UTRA 1.28Mcps TDD UEs that support release 8 and later releases E-UTRA TDD.

8.6.5.4.1.3 7,68 Mcps TDD Option

8.6.5.4.2 Minimum requirement

8.6.5.4.2.1 3,84 Mcps TDD Option

8.6.5.4.2.2 1,28 Mcps TDD Option

The UE shall send one Event 2B triggered measurement report for inter-frequency UTRA TDD cell (Cell2), with a measurement reporting delay less than 5s from the beginning of time period T2.

The UE shall send one Event 3a triggered measurement report for E-UTRA TDD cell (Cell3), with a measurement reporting delay less than 4270ms from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90% .

NOTE: The actual overall delays measured in the test may be up to $2xTTI_{DCCH}$ higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in DCCH.

8.6.5.4.2.3 7,68 Mcps TDD Option

8.6.5.4.3 Test purpose

8.6.5.4.3.1 3,84 Mcps TDD Option

8.6.5.4.3.2 1,28 Mcps TDD Option

The purpose of this test is to verify that the UE makes correct reporting of an event within the required times when doing inter frequency and E-UTRA TDD measurements. To verify that the UE meets the minimum time requirements for identifying neighbouring inter-frequency TDD cell and E-UTRA TDD cell. The test will partly verify the requirements in section 8.1A.2.3 combined 8.1A.2.6 and 9.1 of [2] under fading propagation conditions.

8.6.5.4.3.3 7,68 Mcps TDD Option

8.6.5.4.4 Method of test

8.6.5.4.4.1 3,84 Mcps TDD Option

8.6.5.4.4.2 1,28 Mcps TDD Option

8.6.5.4.4.2.1 Initial conditions

Test environment : normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested : see table J.2 in Annex J.

This test scenario comprised of 2 UTRA TDD cells working on different frequency, and 1 E-UTRA TDD cell. General test parameters are given in the table 8.6.5.4.4.2-1, and they are signalled from test device. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2B and Event 3A shall be used. New measurement control information, which defines neighbour cells etc., is always sent before the event starts. Scheduled idle interval of 80ms period as defined in TS25.331 is provided. Two UTRA TDD cells shall be synchronised, i.e. sharing the same frame and timeslot timing.

The test consists of two successive time periods, with time duration of T1 and T2 respectively. The cell specific test parameters are shown in table 8.6.5.4.4.2-2 and table 8.6.5.4.4.2-3.

Table 8.6.5.4.4.2-1: General test parameters for combined UTRA TDD inter-frequency and E-UTRA TDD cells search under fading propagation conditions

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2. The DPCH is located in an other timeslot than 0.
Active cell		Cell 1	1.28Mcps TDD cell operating on channel 1
Neighbour cell		Cell 2	1.28Mcps TDD cell operating on channel 2
		Cell 3	E-UTRA TDD cell
CP length of cell 3		Normal	
Idle intervals period	ms	80	As specified in TS 25.331
$T_{used\ 2b}$	dBm	-73	Absolute P-CCPCH RSCP threshold for event 2B
$T_{non\ used\ 2b}$	dBm	-82	Absolute P-CCPCH RSCP threshold for event 2B
T_{used}	dBm	-73	Absolute P-CCPCH RSCP threshold for event 3A
T_{other_RAT}	dBm	-100	Absolute RSRP threshold for event 3A
H_{2b}	dB	0	The hysteresis parameter for the event 2B
H_{3a}	dB	0	The hysteresis parameter for the event 3A
CIO_{other_RAT}	dB	0	Cell individual offset for the cell of the other system
TimeToTrigger	dB	0	
Filter coefficient		0	L3 filtering is not used
Monitored cell list size		24 on channel 1 16 on channel 2	
T1	s	5	During T1, cell 2 and cell 3 shall be powered off, and during the off time the physical layer cell identity shall be changed.
T2	s	7	

Table 8.6.5.4.4.2-2: Cell specific test parameters for combined UTRA TDD inter-frequency and E-UTRA TDD cell search under fading propagation conditions (cell 1 and cell 2)

Parameter	Unit	Cell 1 (UTRA)				Cell 2 (UTRA)			
		0		DwPTS		0		DwPTS	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number ^{Note 1}		Channel 1				Channel 2			
PCCPCH_Ec/I _{or}	dB	-3				-3			
DwPCH_Ec/I _{or}	dB			0				0	
OCNS_Ec/I _{or}	dB	-3				-3			
\hat{I}_{or}/I_{oc}	dB	4	4	4	4	-Infinity	12	-Infinity	12
I_{oc}	dBm/ 1.28 MHz	-80							
PCCPCH RSCP ^{Note 2}	dBm	-79	-79	n.a.		-Infinity	-71	n.a.	
I_o ^{Note 2}	dBm/ 1.28 MHz	-74.54	-74.54	-74.54	-74.54	-80.00	-67.73	-80.00	-67.73
Propagation Condition		AWGN				Case 3			
<p>Note 1: In the case of multi-frequency network, the UTRA RF Channel Number can be set for the primary frequency in this test.</p> <p>Note 2: PCCPCH_RSCP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 3: The DPCH of all cells are located in a timeslot other than 0.</p>									

Table 8.6.5.4.4.2-3: Cell specific test parameters for combined UTRA TDD inter-frequency and E-UTRA TDD cell search under fading propagation conditions (cell 3)

Parameter	Unit	Cell 3	
		T1	T2
E-UTRA RF Channel Number		3	
$BW_{channel}$	MHz	10	
OCNG Pattern defined in D.2.2 (OP.2 TDD) in TS 36.521-3 [33]		OP.2 TDD	OP.2 TDD
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RB	dB		
SSS_RB	dB		
PCFICH_RA	dB		
PHICH_RA	dB		
PHICH_RB	dB		
PDCCH_RA	dB		
PDCCH_RB	dB		
PDSCH_RA	dB		
PDSCH_RB	dB		
OCNG_RA ^{Note 1}	dB		
OCNG_RB ^{Note 1}	dB		
\hat{E}_s / N_{oc}	dB		
N_{oc}	dBm/15kHz	-98	
\hat{E}_s / I_{ot}	dB	-Infinity	9
RSRP ^{Note 3}	dBm/15kHz	-Infinity	-89
SCH_RP ^{Note 3}	dBm/15kHz	-Infinity	-89
I_o ^{Note 3}	dBm/9MHz	-70.22	-60.70
Propagation Condition		ETU70 (Note 4)	
<p>Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: The resources for uplink transmission are assigned to the UE prior to the start of time period T2.</p> <p>Note 3: RSRP, SCH_RP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 4: ETU70 propagation conditions are specified in Annex B.2 of 3GPP TS 36.101.</p>			

8.6.5.4.4.2.2 Test Procedure

- 1) The UE is switched on.
- 2) The RF parameters are set up according to T1 in tables 8.6.5.4.5.2-1 and 8.6.5.4.5.2-2.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.3 to place the UE in CELL_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 according to tables 8.6.5.4.5.2-1 and 8.6.5.4.5.2-2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 3A for cell 3. The measurement reporting delay from the beginning of T2 shall be less than 4270ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event 2B for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5s. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

- 8) After 7 seconds from the beginning of T2, the connection will be released, and the UE will enter IDLE state.
- 9) Repeat steps 2-8 until the confidence level according to tables G.2.3-1 in TS 36.521-3 [33].

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

NOTE: Numbers in brackets after an item e.g “Message Type (10.2.17)” in the IE description are references to clause numbers in TS 25.331 [9] describing that item in more detail.

MEASUREMENT CONTROL message (step 4):

FFS

Table 8.6.5.4.5.2-1: Cell specific test parameters for combined UTRA TDD inter-frequency and E-UTRA TDD cell search under fading propagation conditions (cell 1 and cell 2)

Parameter	Unit	Cell 1 (UTRA)				Cell 2 (UTRA)			
		0		DwPTS		0		DwPTS	
Timeslot Number		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number ^{Note 1}		Channel 1				Channel 2			
PCCPCH_Ec/Ior	dB	-3				-3			
DwPCH_Ec/Ior	dB			0				0	
OCNS_Ec/Ior	dB	-3				-3			
\hat{I}_{or}/I_{oc}	dB	3.20	3.20	3.20	3.20	-Infinity	12,00	-Infinity	12.00
I_{oc}	dBm/ 1.28 MHz	-80.00							
PCCPCH RSCP ^{Note 2}	dBm	-79.80	-79.80	n.a.		-Infinity	-71.00	n.a.	
I_o ^{Note 2}	dBm/ 1.28 MHz	-75.10	-75.10	-75.10	-75.10	-80.00	-67.73	-80.00	-67.73
Propagation Condition		AWGN				Case 3			
<p>Nnot 1: In the case of multi-frequency network, the UTRA RF Channel Number can be set for the primary frequency in this test.</p> <p>Note 2: PCCPCH_RSCP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 3: The DPCH of all cells are located in a timeslot other than 0.</p>									

Table 8.6.5.4.5.2-2: Cell specific test parameters for combined UTRA TDD inter-frequency and E-UTRA TDD cell search under fading propagation conditions (cell 3)

Parameter	Unit	Cell 3	
		T1	T2
E-UTRA RF Channel Number		3	
BW_{channel}	MHz	10	
OCNG Pattern defined in D.2.2 (OP.2 TDD) in TS 36.521-3 [33]		OP.2 TDD	OP.2 TDD
PBCH_RA	dB	0	0
PBCH_RB	dB		
PSS_RB	dB		
SSS_RB	dB		
PCFICH_RA	dB		
PHICH_RA	dB		
PHICH_RB	dB		
PDCCH_RA	dB		
PDCCH_RB	dB		
PDSCH_RA	dB		
PDSCH_RB	dB		
OCNG_RA ^{Note 1}	dB		
OCNG_RB ^{Note 1}	dB		
\hat{E}_s/N_{oc}	dB		
N_{oc}	dBm/15kHz	-98.00	
\hat{E}_s/I_{ot}	dB	-Infinity	9.00
RSRP ^{Note 3}	dBm/15kHz	-Infinity	-89.00
SCH_RP ^{Note 3}	dBm/15kHz	-Infinity	-89.00
I_o ^{Note 3}	dBm/9MHz	-70.22	-60.70
Propagation Condition		ETU70 (Note 4)	
Note 1: OCNG shall be used such that cell is fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols. Note 2: The resources for uplink transmission are assigned to the UE prior to the start of time period T2. Note 3: RSRP, SCH_RP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves. Note 4: ETU70 propagation conditions are specified in Annex B.2 of 3GPP TS 36.101.			

The UE shall not send any event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of 95% of the cases.

8.6.5.4.5.3 7,68 Mcps TDD Option

8.7 Measurements Performance Requirements

Unless explicitly stated:

- Reported measurements shall be within defined range in 90 % of the cases.
- Measurement channel is 12.2 kbps as defined in annex C, sub-clause C.3.1. This measurement channel is used in active cell and cells to be measured.
- Cell 1 is the active cell.
- Single task reporting.
- Power control is active.

8.7.1 P-CCPCH RSCP

8.7.1.1 Intra frequency measurement accuracy for 3,84 Mcps TDD Option

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

P-CCPCH RSCP \geq -102 dBm.

$$\left(\frac{P-CCPCH-E_c}{I_o} \right)_{in\ dB} \geq -8dB$$

$$\left(\frac{SCH-E_c}{I_o} \right)_{in\ dB} \geq -13dB$$

Table 8.7.1.1.1.1: P-CCPCH_RSCP absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions I_o [dBm/3.84MHz]
		Normal condition	Extreme condition	
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.1.1.1.1.

8.7.1.1.1.3 Test Purpose

The purpose of this test is to verify that the absolute P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1.1.4 Method of test

8.7.1.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: P-CCPCH RSCP intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3		-3	
SCH_Ec/lor	dB	-9		-9		-9	
SCH_t _{offset}		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,12		-3,12		-3,12	
lor	dBm / 3,84 MHz	-75.7		-59.8		-98.7	
lor/lor	dB	5	2	9	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.7	-76.7	-53.8	-60.8	-98.7	-101.7
lo, Note 1	dBm / 3,84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH_RSCP value in MEASUREMENT REPORT messages. PCCPCH_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH_RSCP power for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i> (10.3.7.53)	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.1.1.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1.2 Relative accuracy requirement

8.7.1.1.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.1.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

$$P\text{-CCPCH RSCP} \geq -102 \text{ dBm.}$$

$$\left(\frac{P\text{-CCPCH} - E_c}{I_o} \right)_{in \text{ dB}} \geq -8 \text{ dB}$$

$$\left(\frac{SCH - E_c}{I_o} \right)_{in \text{ dB}} \geq -13 \text{ dB}$$

$$\left| P\text{-CCPCH RSCP1}_{in \text{ dB}} - P\text{-CCPCH RSCP2}_{in \text{ dB}} \right| \leq 20 \text{ dB}$$

Relative I_o difference [dB] \leq relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1.2.1: P-CCPCH_RSCP intra-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions	
		Normal condition	Extreme condition	I_o [dBm/3.8 4MHz]	relative RSCP difference [dB]
P-CCPCH_RSCP	dBm	± 1	± 1	-94...-50	<2
		± 2	± 2		2...14
		± 3	± 3		>14

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.1.1.

8.7.1.1.2.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1.2.4 Method of test

8.7.1.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 4) The result of step 3) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.
- 5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for intra frequency measurement in clause 8.7.1.1.1.4.2 shall be used.

8.7.1.1.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.2.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1A Intra frequency measurement accuracy for 1,28 Mcps TDD Option

8.7.1.1A.1 Absolute accuracy requirement

8.7.1.1A.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE 1,28 Mcps option.

8.7.1.1A.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1A.1.1 are valid under the following conditions:

P-CCPCH RSCP \geq -102 dBm.

$$\left(\frac{P - CCPCH - E_c}{I_o} \right)_{in \ dB} \geq -8dB$$

$$\left(\frac{D_{wPCH} - E_c}{I_o} \right)_{in\ dB} \geq -5dB$$

Table 8.7.1.1A.1.1: P-CCPCH_RSCP absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	I_o [dBm/1.28MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.2.1.1.1.

8.7.1.1A.1.3 Test Purpose

The purpose of this test is to verify that the absolute P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1A.1.4 Method of test

8.7.1.1A.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 5 and the UL DPCH shall be transmitted in timeslot 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1A.1.2.

Table 8.7.1.1A.1.2: P-CCPCH RSCP Intra frequency test parameters

		Test 1			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	5		2	
I_{oc}	dBm/1,28 MHz	-76.6			
PCCPCH RSCP, Note 1	dBm	-74.6		-77.6	
lo, Note 1	dBm/1,28 MHz	-69			
Propagation condition		AWGN			
		Test 2			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	9		2	
I_{oc}	dBm/1,28 MHz	-60.2			
PCCPCH RSCP, Note 1	dBm	-54.2		-61.2	
lo, Note 1	dBm/1,28 MHz	-50			
Propagation condition		AWGN			
		Test 3			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	5		3	
I_{oc}	dBm/1,28 MHz	-101.9			
PCCPCH RSCP, Note 1	dBm	-99.9		-101.9	
lo, Note 1	dBm/1,28 MHz	-94			
Propagation condition		AWGN			
NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1A.1.2.

8.7.1.1A.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH_RSCP value in MEASUREMENT REPORT messages. PCCPCH_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH_RSCP power for each MEASUREMENT REPORT message.

- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1A.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1A.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	setup
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i> (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.1.1A.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1A.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1A.2 Relative accuracy requirement

8.7.1.1A.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE 1,28 Mcps option.

8.7.1.1A.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1A.2.1 are valid under the following conditions:

P-CCPCH RSCP \geq -102 dBm.

$$\left(\frac{P - CCPCH - E_c}{I_o} \right)_{in\ dB} \geq -8dB$$

$$\left(\frac{DwPCH - E_c}{I_o} \right)_{in\ dB} \geq -5dB$$

$$\left| P - CCPCH\ RSCP1 \Big|_{in\ dBm} - P - CCPCH\ RSCP2 \Big|_{in\ dBm} \right| \leq 8dB$$

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1A.2.1: P-CCPCH_RSCP intra-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Condition s
		Normal condition	Extreme condition	Io [dBm /1.28 MHz]
P-CCPCH_RSCP	dBm	± 3	± 3	-94...-50

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.2.1.1.1.

8.7.1.1A.2.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1A.2.4 Method of test

8.7.1.1A.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 5 and the UL DPCH shall be transmitted in timeslot 2. P-CCPCH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1A.1.2.

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1A.1.2.

8.7.1.1A.2.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.

- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 4) The result of step 3) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.
- 5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1A.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1A.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for intra frequency measurement in clause 8.7.1.1A.1.4.2 shall be used.

8.7.1.1A.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1A.2.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1A.3 Absolute accuracy requirement with two neighbouring cells

8.7.1.1A.3.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

8.7.1.1A.3.2 Minimum Requirements

In each case, at least 900 of the 1000 measurement reports must meet the requirements.

8.7.1.1A.3.3 Test purpose

The purpose of the test is to verify that in multi-cell environment with frequency offset, phase offset, and inter-cell delay, the P-CCPCH RSCP absolute accuracy of all cells measured by the UE meets the requirements of the specifications. In this way, the multi-cell detection performance of the UE can be checked.

8.7.1.1A.3.4 Method of test

8.7.1.1A.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

Cell condition:

Three 1.28Mcps TDD intra-frequency cells are configured.

Signal propagation condition: AWGN

P-CCPCH RSCP –102 dBm.

$$\left(\frac{P - CCPCH - E_c}{I_o} \right) \Big|_{in \ dB} \geq -8dB$$

$$\left(\frac{DwPCH - E_c}{I_o} \right) \Big|_{in \ dB} \geq -5dB$$

Table 8.7.1.1A.3.1: P-CCPCH RSCP Intra-frequency test parameters

Test 1							
Parameter	Unit	Cell 1		Cell 2		Cell 3	
Timeslot Number		0	DwPTS	0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3		-3	
DwPCH_Ec/lor	dB		0		0		0
OCNS_Ec/lor	dB	-3		-3		-3	
\hat{I}_{or}/I_{oc}	dB	9		3		1	
I_{oc}	dBm/ 1.28 MHz	-79.5					
PCCPCH RSCP (Note 1)	dBm	-73.5		-79.5		-81.5	
Io (Note 1)	dBm/ 1.28 MHz	-69					
Initial Time Delay (c_{init}) (Note 2)	Chip	1		5		7	
Initial Frequency Shift (f_{init}) (Note 3)	Hz	20		40		-40	
Initial Phase (ϕ_{init}) (Note 4)	Degree	0		$\pi/2$		π	
Propagation condition		AWGN					
Test 2							
Parameter	Unit	Cell 1		Cell 2		Cell 3	
Timeslot Number		0	DwPTS	0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3		-3	
DwPCH_Ec/lor	dB		0		0		0
OCNS_Ec/lor	dB	-3		-3		-3	
\hat{I}_{or}/I_{oc}	dB	7		7		1	
I_{oc}	dBm/ 1.28 MHz	-60.5					
PCCPCH RSCP (Note 1)	dBm	-56.5		-56.5		-62.5	
Io (Note 1)	dBm/ 1.28 MHz	-50					
Initial Time Delay (c_{init}) (Note 2)	Chip	1		5		7	
Initial Frequency Shift (f_{init}) (Note 3)	Hz	20		40		-40	
Initial Phase (ϕ_{init}) (Note 4)	Degree	0		$\pi/2$		π	
Propagation condition		AWGN					
Test 3							
Parameter	Unit	Cell 1		Cell 2		Cell 3	
Timeslot Number		0	DwPTS	0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3		-3	

DwPCH_Ec/lor	dB		0		0		0
OCNS_Ec/lor	dB	-3		-3		-3	
\hat{I}_{or}/I_{oc}	dB	3		3		3	
I_{oc}	dBm/ 1.28 MHz	-101.8					
PCCPCH RSCP (Note 1)	dBm	-101.8		-101.8		-101.8	
Io (Note 1)	dBm/ 1.28 MHz	-94					
Initial Time Delay (c_{init}) (Note 2)	Chip	1		5		7	
Initial Frequency Shift (f_{init}) (Note 3)	Hz	20		40		-40	
Initial Phase (ϕ_{init}) (Note 4)	Degree	0		$\pi/2$		π	
Propagation condition		AWGN					

Note 1: PCCPCH RSCP and Io levels are calculated from other parameters for information purposes.

Note 2: The delay of each base station (c) is moving between [0chips, 2chips] around the base point,

that is, the initial cell delay (c_{init}). The delay variation interval is $\frac{1}{8}$ chip / 5ms. c_n is the current subframe delay. The definition is as follows:

$$\begin{cases} c_n = c_{init} + \frac{1}{8} \times (n \bmod 16), & \lfloor n/16 \rfloor \bmod 2 = 0 \\ c_n = c_{init} + 2 - \frac{1}{8} \times (n \bmod 16), & \lfloor n/16 \rfloor \bmod 2 = 1 \end{cases}$$

Here, n is the difference between the current subframe and initial subframe in the cell.

Note 3: Frequency offset (f) is the difference between the actual transmit frequency and the nominal frequency in the cell. f_{init} is the frequency offset of the initial subframe, f_n is the frequency offset of the current subframe, and f_{n+1} is the frequency offset of the next subframe. The frequency offset variation interval is 1Hz / 5ms. The definition is as follows:

$$\begin{cases} f_{n+1} = f_n + \Delta \\ \Delta_{init} = 1 \\ \Delta = -\Delta, \text{ (if } f_n = \pm 100\text{Hz)} \end{cases}$$

Here, n is the difference between the current subframe and initial subframe in the cell.

Note 4: The cell phase (ϕ) is changing continuously in the range of $[0, 2\pi)$. ϕ_{init} is the initial phase of the cell, ϕ_n is the current subframe cell phase, and the phase variation interval is

$$\frac{\pi}{16} / 5\text{ms}. \text{ The definition is as follows:}$$

$$\phi_n = (\phi_{init} + n \times \frac{\pi}{16}) \bmod 2\pi$$

Here, n is the difference between the current subframe and initial subframe in the cell.

MEASUREMENT CONTROL message in P-CCPCH RSCP absolute accuracy measurement (step 1)

Information Element/Group Name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AMRLC
-Periodical Reporting/Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronization information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronization information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.1.1A.3.4.2 Procedure

- 1) A call is set up according to the test procedure specified in 3GPP TS 34.108 sub-clause 7.3.2.3.
- 2) The RF parameters for Test 1 are set up according to table 1.
- 3) SS shall transmit MEASUREMENT CONTROL message.
- 4) UE shall transmit periodically MEASUREMENT REPORT messages.

- 5) SS shall check PCCPCH_RSCP value in MEASUREMENT REPORT messages. PCCPCH_RSCP power of Cell 1, Cell 2, and Cell 3 reported by UE is compared to actual PCCPCH_RSCP power for each MEASUREMENT REPORT message.
- 6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table1 for Test 2. While RF parameters are set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, repeat steps 3 and 4. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table1 for Test 3. While RF parameters are set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, repeat steps 3 and 4.
- 7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.1A.3.5 Test requirements

P-CCPCH_RSCP intra-frequency measurement accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/ 1.28 MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

In each case, at least 900 of the 1000 measurement reports must meet the requirements.

8.7.1.1B Intra frequency measurement accuracy for 7,68 Mcps TDD Option

8.7.1.1B.1 Absolute accuracy requirement

8.7.1.1B.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.1B.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1B.1.2.1 are valid under the following conditions:

$$P\text{-CCPCH RSCP} \geq -102 \text{ dBm.}$$

$$\left(\frac{P\text{-CCPCH} - E_c}{I_o} \right)_{in \text{ dB}} \geq -11 \text{ dB}$$

$$\left(\frac{SCH - E_c}{I_o} \right)_{in \text{ dB}} \geq -13 \text{ dB}$$

Table 8.7.1.1B.1.2.1: P-CCPCH_RSCP absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.3 and A.9.3.1.1.1.

8.7.1.1B.1.3 Test Purpose

The purpose of this test is to verify that the absolute P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1B.1.4 Method of test

8.7.1.1B.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1B.1.4.1.1.

Table 8.7.1.1B.1.4.1.1: P-CCPCH RSCP intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3		-3	
SCH_Ec/lor	dB	-9		-9		-9	
SCH_t _{offset}		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,12		-3,12		-3,12	
loc	dBm / 7.68 MHz	-75.7		-59.8		-98.7	
lor/loc	dB	5	2	9	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.7	-76.7	-53.8	-60.8	-98.7	-101.7
lo, Note 1	dBm / 7.68 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1B.1.4.1.1.

8.7.1.1B.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH_RSCP value in MEASUREMENT REPORT messages. PCCPCH_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH_RSCP power for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	1 Modify AM RLC Periodical reporting Not Present
-CHOICE <i>Measurement type</i> -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE <i>mode</i> -Measurement quantity list -Measurement quantity	Intra-frequency measurement Not Present 0 TDD 1
-Intra-frequency reporting quantity (10.3.7.41)	Primary CCPCH RSCP
-Reporting quantities for active set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE <i>mode</i> -Timeslot ISCP reporting indicator -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	No report FALSE TRUE TDD FALSE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE <i>mode</i> -Timeslot ISCP reporting indicator -Proposed TGSN reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	No report FALSE TRUE TDD FALSE FALSE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -CHOICE <i>reported cell</i> -Maximum number of reported cells -Measurement validity (10.3.7.51) -CHOICE <i>report criteria</i> -Periodical reporting criteria (10.3.7.53) -Amount of reporting -Reporting interval	Report all active set cells + cells within monitored set on used frequency 1 Not Present Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.1.1B.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1B.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1B.2 Relative accuracy requirement

8.7.1.1B.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.1B.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1B.2.2.1 are valid under the following conditions:

P-CCPCH RSCP \geq -102 dBm.

$$\left(\frac{P-CCPCH-E_c}{I_o} \right)_{in\ dB} \geq -11dB$$

$$\left(\frac{SCH-E_c}{I_o} \right)_{in\ dB} \geq -13dB$$

$$\left| P-CCPCH\ RSCP1 \Big|_{in\ dB} - P-CCPCH\ RSCP2 \Big|_{in\ dB} \right| \leq 20dB$$

Relative I_o difference [dB] \leq relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1B.2.2.1: P-CCPCH_RSCP intra-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions	
		Normal condition	Extreme condition	I_o [dBm/7.68MHz]	relative RSCP difference [dB]
P-CCPCH_RSCP	dBm	± 1	± 1	-94...-50	<2
		± 2	± 2		2...14
		± 3	± 3		>14

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2.3 and A.9.3.1.1.1.

8.7.1.1B.2.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1B.2.4 Method of test

8.7.1.1B.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1B.1.4.1.1.

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1B.2.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 4) The result of step 3) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.
- 5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for intra frequency measurement in clause 8.7.1.1B.1.4.2 shall be used.

8.7.1.1B.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1B.2.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.2 Inter frequency measurement accuracy for 3,84 Mcps TDD Option

8.7.1.2.1 Relative accuracy requirement

8.7.1.2.1.1 Definition and applicability

The P-CCPCH_RSCP inter-frequency relative accuracy is defined as the P-CCPCH_RSCP measured from one cell compared to the P-CCPCH_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.2.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

P-CCPCH RSCP \geq -102 dBm.

$$\left| P - \text{CCPCH RSCP1} \Big|_{in \text{ dB}} - P - \text{CCPCH RSCP2} \Big|_{in \text{ dB}} \right| \leq 20 \text{ dB}$$

$$\left(\frac{P - \text{CCPCH}_{-}E_c}{I_o} \right)_{in \text{ dB}} \geq -8\text{dB}$$

$$\left(\frac{\text{SCH}_{-}E_c}{I_o} \right)_{in \text{ dB}} \geq -13\text{dB}$$

Table 8.7.1.2.1.1 P-CCPCH_RSCP inter-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions I _o [dBm/3.84MHz]
		Normal condition	Extreme condition	
P-CCPCH_RSCP	dBm	± 6	± 6	-94...-50

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.

8.7.1.2.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

8.7.1.2.1.4 Method of test

8.7.1.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Table 8.7.1.2.1.2: P-CCPCH RSCP inter frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/lor	dB	-3		-3		-3	
SCH_Ec/lor	dB	-9		-9		-9	
SCH _{offset}		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,12		-3,12		-3,12	
loc	dBm / 3,84 MHz	-75.2	-75.2	-57.8	-54.1	-98.7	-97
lor/loc	dB	5	5	7	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.2	-73.2	-54.8	-55.1	-98.7	-100
I _o , Note 1	dBm / 3,84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: PCCPCH RSCP and I _o levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2.1.2.

8.7.1.2.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL messages for intra frequency and inter frequency measurements.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 4) The result of step 3) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.
- 5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

First MEASUREMENT CONTROL message for intra frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i> (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

Second MEASUREMENT CONTROL message for inter frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE <i>report criteria</i> (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.1.2.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.2A Inter frequency measurement accuracy for 1,28 Mcps TDD Option

8.7.1.2A.1 Relative accuracy requirement

8.7.1.2A.1.1 Definition and applicability

The P-CCPCH_RSCP inter-frequency relative accuracy is defined as the P-CCPCH_RSCP measured from one cell compared to the P-CCPCH_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE 1,28 Mcps option.

8.7.1.2A.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2A.1.1 are valid under the following conditions:

P-CCPCH RSCP \geq -102 dBm.

$$\left| P\text{-CCPCH RSCP1}_{in\ dB} - P\text{-CCPCH RSCP2}_{in\ dB} \right| \leq 20dB$$

$$\left(\frac{P\text{-CCPCH} - E_c}{I_o} \right)_{in\ dB} \geq -8dB$$

$$\left(\frac{DwPCH - E_c}{I_o} \right)_{in\ dB} \geq -5dB$$

Table 8.7.1.2A.1.1 P-CCPCH_RSCP inter-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions I _o [dBm/1.28MHz]
		Normal condition	Extreme condition	
P-CCPCH_RSCP	dBm	± 6	± 6	-94...-50

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.2.1.

8.7.1.2A.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

8.7.1.2A.1.4 Method of test

8.7.1.2A.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2A.1.2.

Table 8.7.1.2A.1.2: P-CCPCH RSCP Inter frequency test parameters

		Test 1			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	5		5	
I_{oc}	dBm/ 1,28 MHz	-75.2		-75.2	
PCCPCH RSCP, Note 1	dBm	-73.2		-73.2	
Io, Note 1	dBm/ 1,28 MHz	-69			
Propagation condition		AWGN			
		Test 2			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	7		2	
I_{oc}	dBm/ 1,28 MHz	-57.8		-54.1	
PCCPCH RSCP, Note 1	dBm	-53.8		-55.1	
Io, Note 1	dBm/ 1,28 MHz	-50			
Propagation condition		AWGN			
		Test 3			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	3		0	
I_{oc}	dBm/ 1,28 MHz	-98.7		-97	
PCCPCH RSCP, Note 1	dBm	-98.7		-100	
Io, Note 1	dBm/ 1,28 MHz	-94			
Propagation condition		AWGN			
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2A.1.2.

8.7.1.2A.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.

- 3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 4) The result of step 3) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.
- 5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2A.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	setup
-Measurement Reporting Mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical reporting
- Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurement list	Intra-frequency measurement
-CHOICE Measurement Type	
-Intra-frequency measurement	
- Intra-frequency measurement objects list	Not Present
-Intra-frequency cell info list	
-Intra-frequency measurement quantity	0
-Filter coefficient	TDD
-CHOICE mode	PCCPCH RSCP
- Measurement quantity	
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	TRUE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TDD
-CHOICE mode	FALSE
- Timeslot ISCP reporting indicator	FALSE
- Proposed TGSN Reporting required	TRUE
- Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	FALSE
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	FDD
-CHOICE mode	FALSE
- Timeslot ISCP reporting indicator	FALSE
- Proposed TGSN Reporting required	TRUE
PCCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	Not Present
-Reporting quantities for detected set cells	Report all active set cells + cells within monitored set on used frequency
-Reporting cell status	Virtual/active set cells + 2
-CHOICE reported cell	Not Present
-Maximum number of reported cells	Periodical reporting criteria
-Measurement validity	Infinity
-CHOICE <i>report criteria</i>	250 ms
-Amount of reporting	
-Reporting interval	
Physical channel information elements	
-DPCH compressed mode status info	Not Present

Second MEASUREMENT CONTROL message for Inter frequency measurement (step 1):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter coefficient	0
-CHOICE mode	TDD
- Measurement quantity for frequency quality estimate	PCCPCH RSCP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-Timeslot ISCP reporting indicator	FALSE
- Proposed TGSN Reporting required	FALSE
-PCCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status	Report cells within monitored set on non-used frequency
-CHOICE reported cell	
-Maximum number of reported cells	2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity 500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.2A.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2A.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.2A.2 Absolute accuracy requirement

8.7.1.2A.2.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.7.1.2A.2.2 Minimum Requirements

In each case, at least 900 of the 1000 measurement reports must meet the requirements.

8.7.1.2A.2.3 Test Purpose

The purpose of the test is to verify that the absolute accuracy of P-CCPCH RSCP in inter-frequency case meets the requirements of the specifications.

8.7.1.2A.2.4 Method of test

8.7.1.2A.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

Cell condition:

Two 1.28Mcps TDD inter-frequency cells are configured.

Signal propagation condition: AWGN

Test instrument: AWGN noise source

P-CCPCH RSCP –102 dBm.

$$\left| P\text{-CCPCH RSCP1} \Big|_{in\ dB} - P\text{-CCPCH RSCP2} \Big|_{in\ dB} \right| \leq 20dB$$

$$\left(\frac{P\text{-CCPCH} - E_c}{I_o} \right) \Big|_{in\ dB} \geq -8dB$$

$$\left(\frac{DwPCH - E_c}{I_o} \right) \Big|_{in\ dB} \geq -5dB$$

Table 8.7.1.2A.2.1: P-CCPCH RSCP Inter frequency test parameter

Test 1					
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRARF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	5		5	
I_{oc}	dBm/1.28 MHz	-75.2		-75.2	
PCCPCH RSCP (Note 1)	dBm	-73.2		-73.2	
Io (Note 1)	dBm/1.28 MHz	-69			
Propagation condition		AWGN			
Test 2					
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRARF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	7		2	
I_{oc}	dBm/1.28 MHz	-57.8		-54.1	
PCCPCH RSCP (Note 1)	dBm	-53.8		-55.1	
Io (Note 1)	dBm/1.28 MHz	-50			
Propagation condition		AWGN			
Test 3					
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRARF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	3		0	
I_{oc}	dBm/1.28 MHz	-98.7		-97	
PCCPCH RSCP (Note 1)	dBm	-98.7		-100	
Io (Note 1)	dBm/1.28 MHz	-94			
Propagation condition		AWGN			
Note 1: PCCPCH RSCP and Io levels are calculated from other parameters for information purposes.					

8.7.1.2A.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in 3GPP TS 34.108 sub-clause 7.3.2.3.
- 2) The RF parameters for Test 1 are set up according to table1.
- 3) SS shall transmit MEASUREMENT CONTROL message.
- 4) UE shall transmit periodically MEASUREMENT REPORT messages.
- 5) SS shall check PCCPCH_RSCP value in MEASUREMENT REPORT messages. PCCPCH_RSCP power of Cell 1 and CELL 2 reported by UE is compared to actual PCCPCH_RSCP power for each MEASUREMENT REPORT message.
- 6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table1 for Test 2. While RF parameters are set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, repeat steps 3 and 4. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table1 for Test 3. While RF parameters are set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, repeat steps 3 and 4.
- 7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

First MEASUREMENT CONTROL message for Intra frequency measurement (step 1)

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	setup
-Measurement Reporting Mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical reporting
- Periodical Reporting/Event Trigger Reporting Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	
-CHOICE mode	0
- Measurement quantity	TDD
-Intra-frequency reporting quantity	PCCPCH RSCP
-Reporting quantities for active set cells	
-Cell synchronization information reporting indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TRUE
-Timeslot ISCP reporting indicator	TDD
-Proposed TGSN Reporting required	FALSE
-PCCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells	FALSE
-Cell synchronization information reporting indicator	
-Cell Identity reporting indicator	FALSE
-CHOICE mode	TRUE
-Timeslot ISCP reporting indicator	TDD
-Proposed TGSN Reporting required	FALSE
-PCCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells	FALSE
-Reporting cell status	Not Present
-CHOICE reported cell	
-Maximum number of reported cells	Report all active set cells + cells within monitored set on used frequency
-Measurement validity	Virtual/active set cells + 2
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity 250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

Second MEASUREMENT CONTROL message for Inter frequency measurement (step 1)

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting/Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter coefficient	0
-CHOICE mode	TDD
-Measurement quantity for frequency quality estimate	PCCPCH RSCP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronization information reporting indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TRUE
-Timeslot ISCP reporting indicator	TDD
-Proposed TGSN Reporting required	FALSE
-PCCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	Report cells within monitored set on non-used frequency
-Maximum number of reported cells	
-Measurement validity	2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity 500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

8.7.1.2A.2.5 Test requirements

Table 8.7.1.2A.2.2: P-CCPCH RSCP Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Condition
		Normal Condition	Extreme Condition	Io[dBm/1.28 MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

In each case, at least 900 of the 1000 measurement reports must meet the requirements.

The rate of correct measurement observed during repeated tests shall be at least 90% with a confidence level of 95%.

8.7.1.2B Inter frequency measurement accuracy for 7,68 Mcps TDD Option

8.7.1.2B.1 Relative accuracy requirement

8.7.1.2B.1.1 Definition and applicability

The P-CCPCH_RSCP inter-frequency relative accuracy is defined as the P-CCPCH_RSCP measured from one cell compared to the P-CCPCH_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.2B.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2B.1.2.1 are valid under the following conditions:

$$P\text{-CCPCH RSCP} \geq -102 \text{ dBm.}$$

$$\left| P\text{-CCPCH RSCP1}_{in \text{ dB}} - P\text{-CCPCH RSCP2}_{in \text{ dB}} \right| \leq 20 \text{ dB}$$

$$\left(\frac{P\text{-CCPCH} - E_c}{I_o} \right)_{in \text{ dB}} \geq -11 \text{ dB}$$

$$\left(\frac{SCH - E_c}{I_o} \right)_{in \text{ dB}} \geq -13 \text{ dB}$$

Table 8.7.1.2B.1.2.1 P-CCPCH_RSCP inter-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/7.68 MHz]
P-CCPCH_RSCP	dBm	± 6	± 6	-94...-50

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2.3 and A.9.3.1.

8.7.1.2B.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

8.7.1.2B.1.4 Method of test

8.7.1.2B.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2B.1.4.1.1.

Table 8.7.1.2B.1.4.1.1: P-CCPCH RSCP inter frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/lor	dB	-3		-3		-3	
SCH_Ec/lor	dB	-9		-9		-9	
SCH_t _{offset}		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,12		-3,12		-3,12	
loc	dBm / 7.68 MHz	-75.2	-75.2	-57.8	-54.1	-98.7	-97
lor/loc	dB	5	5	7	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.2	-73.2	-54.8	-55.1	-98.7	-100
lo, Note 1	dBm / 7.68 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2B.1.4.1.1.

8.7.1.2B.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL messages for intra frequency and inter frequency measurements.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 4) The result of step 3) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.
- 5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

First MEASUREMENT CONTROL message for intra frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i> (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

Second MEASUREMENT CONTROL message for inter frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE <i>report criteria</i> (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.1.2B.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2B.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.3 Local cell accuracy for 3.84 Mcps TDD option

Void

8.7.1.3A Local cell accuracy for 1.28 Mcps TDD option

8.7.1.3A.1 Absolute accuracy requirement

8.7.1.3A.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.7.1.3A.1.2 Minimum Requirements

Parameter	Unit	Accuracy		Condition
		Normal Condition	Extreme Condition	Io[dBm/1.28 MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

8.7.1.3A.1.3 Test purpose

The purpose of this test is to verify that the Single-Cell Absolute Accuracy is within the specified limits.

8.7.1.3A.1.4 Method of test

8.7.1.3A.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

Cell condition:

One 1.28Mcps TDD cell must be configured. The DL DPCH is configured in timeslot 5, and the UL DPCH is configured in timeslot 2.

P-CCPCH RSCP □ -102 dBm.

$$\left(\frac{P - CCPCH - E_c}{I_o} \right)_{in \ dB} \geq -8dB \quad \left(\frac{DwPCH - E_c}{I_o} \right)_{in \ dB} \geq -5dB$$

Table 8.7.1.3A.1.1: P-CCPCH RSCP local cell test parameters

		Test 1	
Parameter	Unit	Cell 1	
Timeslot Number		0	DwPTS
UTRA RF Channel Number		Channel 1	
PCCPCH_Ec/lor	dB	0	
DwPCH_Ec/lor	dB		0
\hat{I}_{or}	dBm/1.28 MHz	-76.6	
PCCPCH RSCP	dBm	-76.6	
		Test 2	
Parameter	Unit	Cell 1	
Timeslot Number		0	DwPTS
UTRA RF Channel Number		Channel 1	
PCCPCH_Ec/lor	dB	0	
DwPCH_Ec/lor	dB		0
\hat{I}_{or}	dBm/1.28 MHz	-85	
PCCPCH RSCP	dBm	-85	
		Test 3	
Parameter	Unit	Cell 1	
Timeslot Number		0	DwPTS
UTRA RF Channel Number		Channel 1	
PCCPCH_Ec/lor	dB	0	
DwPCH_Ec/lor	dB		0
\hat{I}_{or}	dBm/1.28 MHz	-90	
PCCPCH RSCP	dBm	-90	
		Test 4	
Parameter	Unit	Cell 1	
Timeslot Number		0	DwPTS
UTRA RF Channel Number		Channel 1	
PCCPCH_Ec/lor	dB	0	
DwPCH_Ec/lor	dB		0
\hat{I}_{or}	dBm/1.28 MHz	-95	
PCCPCH RSCP	dBm	-95	

MEASUREMENT CONTROL message in P-CCPCH RSCP absolute accuracy measurement (step 1)

Information Element/Group Name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AMRLC
-Periodical Reporting/Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronization information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronization information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.1.3A.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in 3GPP TS 34.108 sub-clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 1.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.

- 4) SS shall check PCCPCH_RSCP value in MEASUREMENT REPORT messages. PCCPCH_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH_RSCP power for each MEASUREMENT REPORT message.
- 5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table1 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, repeat steps 3 and 4. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table1 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3 and 4 are repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.3A.1.5 Test requirements

Parameter	Unit	Accuracy		Condition
		Normal Condition	Extreme Condition	Io[dBm/1.28 MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The success rate shall be more than 90% and the confidence level shall be more than 95% .

8.7.1.3B Local cell accuracy for 7.86 Mcps TDD option

Void

8.7.1.4 Local cell absolute accuracy in white noise for 3.84 Mcps TDD

Void

8.7.1.4A Local cell absolute accuracy in white noise for 1.28 Mcps TDD

8.7.1.4A.1 Absolute accuracy requirement

8.7.1.4A.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.7.1.4A.1.2 Minimum Requirements

Parameter	Unit	Accuracy		Condition
		Normal condition	Extreme condition	Io[dBm/1.28 MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

8.7.1.4A.1.3 Test purpose

The purpose of this test is to verify that the Single-Cell White Noise Environment Measurement Absolute Accuracy is within the specified limits.

8.7.1.4A.1.4 Method of test

8.7.1.4A.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

Cell condition:

One 1.28Mcps TDD cell must be configured. The DL DPCH is configured in timeslot 5, and the UL DPCH is configured in timeslot 2.

Table 8.7.1.4A.1.1: P-CCPCH RSCP single-cell white noise measurement parameters

		Test 1	
Parameter	Unit	Cell 1	
Timeslot Number		0	DwPTS
UTRA RF Channel Number		Channel 1	
PCCPCH_Ec/lor	dB	0	
DwPCH_Ec/lor	dB		0
\hat{I}_{or}/I_{oc}	dB	2	
I_{oc}	dBm/1.28 MHz	-76.6	
PCCPCH RSCP (Note 1)	dBm	-74.6	
Propagation condition		AWGN	
		Test 2	
Parameter	Unit	Cell 1	
Timeslot Number		0	DwPTS
UTRA RF Channel Number		Channel 1	
PCCPCH_Ec/lor	dB	0	
DwPCH_Ec/lor	dB		0
\hat{I}_{or}/I_{oc}	dB	2	
I_{oc}	dBm/1.28 MHz	-87	
PCCPCH RSCP (Note 1)	dBm	-85	
Propagation condition		AWGN	
		Test 3	
Parameter	Unit	Cell 1	
Timeslot Number		0	DwPTS
UTRA RF Channel Number		Channel 1	
PCCPCH_Ec/lor	dB	0	
DwPCH_Ec/lor	dB		0
\hat{I}_{or}/I_{oc}	dB	2	
I_{oc}	dBm/1.28 MHz	-92	
PCCPCH RSCP (Note 1)	dBm	-90	
Propagation condition		AWGN	
		Test 4	
Parameter	Unit	Cell 1	
Timeslot Number		0	DwPTS
UTRA RF Channel Number		Channel 1	
PCCPCH_Ec/lor	dB	0	
DwPCH_Ec/lor	dB		0
\hat{I}_{or}/I_{oc}	dB	2	
I_{oc}	dBm/1.28 MHz	-97	
PCCPCH RSCP (Note 1)	dBm	-95	
Propagation condition		AWGN	
Note 1: PCCPCH RSCP and I_{oc} levels are calculated from other parameters for information purposes.			

MEASUREMENT CONTROL message in P-CCPCH RSCP absolute accuracy measurement (step 1)

Information Element/Group Name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting/Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronization information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronization information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.1.4A.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in 3GPP TS 34.108 sub-clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 1.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check PCCPCH_RSCP value in MEASUREMENT REPORT messages. PCCPCH_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH_RSCP power for each MEASUREMENT REPORT message.

- 5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table1 for Test 2. While RF parameters are set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, repeat steps 3 and 4. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table1 for Test 3. While RF parameters are set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, repeat steps 3 and 4.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.4A.1.5 Test requirements

Parameter	Unit	Accuracy		Condition
		Normal condition	Extreme condition	Io[dBm/1.28 MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The success rate shall be more than 90% and the confidence level shall be more than 95% .

8.7.1.4B Local cell absolute accuracy in white noise for 3.84 Mcps TDD

Void

8.7.2 CPICH measurements (FDD)

8.7.2.1 CPICH RSCP

8.7.2.1.1 Absolute measurement accuracy for 3,84 Mcps TDD Option

8.7.2.1.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured in an UTRA FDD cell on one frequency compared to the actual CPICH RSCP power of that cell on the same frequency.

The requirements and this test apply only to UE supporting both UTRA TDD and UTRA FDD.

8.7.2.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.1.1 are valid under the following conditions:

- $CPICH_RSCP_{1,2}|_{dBm} \geq -114$ dBm.

$$- \left(\frac{I_o}{\hat{I}_{or}} \right)_{in\ dB} - \left(\frac{CPICH - E_c}{I_{or}} \right)_{in\ dB} \leq 20dB .$$

Table 8.7.2.1.1.1: CPICH RSCP inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3,84 MHz]
CPICH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.2.1 and A.9.1.2.1.

8.7.2.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits.

8.7.2.1.1.4 Method of test

8.7.2.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 is a UTRA TDD cell and cell 2 is a UTRA FDD cell. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. No second Beacon timeslot shall be provided for cell 1. CPICH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in table 8.7.2.1.1.2.

Table 8.7.2.1.1.2: CPICH RSCP inter frequency tests parameters

Parameter	Unit	Test 1		Test 2	
		Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	n.a.	0	n.a.
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/lor	dB	n.a.	-10	n.a.	-10
PCCPCH_Ec/lor	dB	-3	-12	-3	-12
SCH_Ec/lor	dB	-9	-12	-9	-12
SCH _{offset}		5	n.a.	5	n.a.
PICH_Ec/lor	dB	n.a.	-15	n.a.	-15
OCNS_Ec/lor	dB	-3.12	-0.94	-3.12	-0.94
loc	dBm/3,84 MHz	-57.7	-60	-84.7	-84
lor/loc	dB	7	9.54	3	0
PCCPCH RSCP, Note 1	dBm	-53.7	n.a.	-84.7	n.a.
CPICH RSCP, Note 1	dBm	n.a.	-60.46	n.a.	-94
lo, Note 1	dBm/3,84 MHz	-50	-50	-80	-81
Propagation condition	-	AWGN		AWGN	
NOTE 1: PCCPCH RSCP, CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					

A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.1.2.

8.7.2.1.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message for inter frequency measurement.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check CPICH RSCP value of Cell 2 in the MEASUREMENT REPORT messages. CPICH RSCP levels of Cell 2 reported by the UE is compared to the actual CPICH RSCP value of Cell 2 for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter coefficient	0
-CHOICE mode	FDD
- Measurement quantity for frequency quality estimate	CPICH RSCP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	FALSE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
- Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

8.7.2.1.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.2.1.1.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.1A.1 Absolute measurement accuracy for 1,28 Mcps TDD Option

8.7.2.1A.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured in an UTRA FDD cell on one frequency compared to the actual CPICH RSCP power of that cell on the same frequency.

The requirements and this test apply only to UE supporting both UTRA TDD and UTRA FDD.

8.7.2.1A.1.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1A.1.1 are valid under the following conditions:

- CPICH_RSCP1,2|dBm ≥ -114 dBm.

$$- \left(\frac{I_o}{I_{or}} \right)_{in \ dB} - \left(\frac{CPICH - E_c}{I_{or}} \right)_{in \ dB} \leq 20dB .$$

Table 8.7.2.1A.1.1: FDD CPICH RSCP inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/ 3,84 MHz]
CPICH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.2.1 and A.9.1.2.1.

8.7.2.1A.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits.

8.7.2.1A.1.4 Method of test

8.7.2.1A.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 is a UTRA 1,28Mcps TDD cell and cell 2 is a UTRA FDD cell. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. No second Beacon timeslot shall be provided for cell 1. CPICH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in table 8.7.2.1A.1.2.

Table 8.7.2.1A.1.2: CPICH RSCP inter frequency tests parameters

Parameter	Unit	Test 1		Test 2	
		Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	DwPTS	n.a.	n.a.
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/lor	dB	n.a.	-10	n.a.	-10
PCCPCH_Ec/lor	dB	-3	-12	-3	-12
DwPCH_Ec/lor	dB		0		0
SCH_Ec/lor	dB	n.a.	-12	n.a.	-12
PICH_Ec/lor	dB	n.a.	-15	n.a.	-15
OCNS_Ec/lor	dB	-3	-0.94	-3	-0.94
loc, Note 2	dBm/3.84 MHz	n.a.	-60	n.a.	-84
loc, Note 2	dBm/1.28 MHz	-57.7	n.a.	-84.7	n.a.
lor/loc	dB	7	9.54	3	0
PCCPCH RSCP, Note 1	dBm	-53.7	n.a.	-84.7	n.a.
CPICH RSCP, Note 1	dBm	n.a.	-60.46	n.a.	-94
lo, Notes 1, 2	dBm/3.84 MHz	n.a.	-50	n.a.	-81
lo, Notes 1, 2	dBm/1.28 MHz	-50	n.a.	-80	n.a.
Propagation condition	-	AWGN		AWGN	
NOTE 1: PCCPCH RSCP, CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					
NOTE 2: loc and lo are given independently for TDD and FDD cells.					

A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1A.1.2.

8.7.2.1A.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message for inter frequency measurement.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check CPICH RSCP value of Cell 2 in the MEASUREMENT REPORT messages. CPICH RSCP levels of Cell 2 reported by the UE is compared to the actual CPICH RSCP value of Cell 2 for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE.
- 5) After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1A.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter coefficient	0
-CHOICE mode	FDD
- Measurement quantity for frequency quality estimate	CPICH RSCP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	FALSE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
- Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

8.7.2.1.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.2.1A.1.2 in at least 900 of the measurements in each test.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.1B.1 Absolute measurement accuracy for 7,68 Mcps TDD Option

8.7.2.1B.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured in an UTRA FDD cell on one frequency compared to the actual CPICH RSCP power of that cell on the same frequency.

The requirements and this test apply only to UE supporting both UTRA TDD and UTRA FDD.

8.7.2.1B.1.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1B.1.2.1 are valid under the following conditions:

- CPICH_RSCP_{1,2}_{dBm} ≥ -114 dBm.

$$- \left(\frac{I_o}{\hat{I}_{or}} \right)_{in \text{ dB}} - \left(\frac{CPICH - E_c}{I_{or}} \right)_{in \text{ dB}} \leq 20dB .$$

Table 8.7.2.1B.1.2.1: CPICH RSCP inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions lo [dBm/3,84 MHz]
		Normal condition	Extreme condition	
CPICH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.2.1 and A.9.3.2.1.

8.7.2.1B.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits.

8.7.2.1B.1.4 Method of test

8.7.2.1B.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 is a UTRA TDD cell and cell 2 is a UTRA FDD cell. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. No second Beacon timeslot shall be provided for cell 1. CPICH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in table 8.7.2.1B.1.4.1.1.

Table 8.7.2.1B.1.4.1.1: CPICH RSCP inter frequency tests parameters

Parameter	Unit	Test 1		Test 2	
		Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	n.a.	0	n.a.
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/lor	dB	n.a.	-10	n.a.	-10
PCCPCH_Ec/lor	dB	-3	-12	-3	-12
SCH_Ec/lor	dB	-9	-12	-9	-12
SCH_offset		5	n.a.	5	n.a.
PICH_Ec/lor	dB	n.a.	-15	n.a.	-15
OCNS_Ec/lor	dB	-3.12	-0.94	-3.12	-0.94
loc	dBm/3,84 MHz	-57.7	-60	-84.7	-84
lor/loc	dB	7	9.54	3	0
PCCPCH RSCP, Note 1	dBm	-53.7	n.a.	-84.7	n.a.
CPICH RSCP, Note 1	dBm	n.a.	-60.46	n.a.	-94
lo, Note 1	dBm/3,84 MHz	-50	-50	-80	-81
Propagation condition	-	AWGN		AWGN	
NOTE 1: PCCPCH RSCP, CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					

A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1B.1.4.1.1.

8.7.2.1B.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message for inter frequency measurement.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check CPICH RSCP value of Cell 2 in the MEASUREMENT REPORT messages. CPICH RSCP levels of Cell 2 reported by the UE is compared to the actual CPICH RSCP value of Cell 2 for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter coefficient	0
-CHOICE mode	FDD
- Measurement quantity for frequency quality estimate	CPICH RSCP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	FALSE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
- Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

8.7.2.1B.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.2.1B.1.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.2 CPICH Ec/Io

Void

NOTE: This section is included for consistency with numbering in TS 25.123 [2] currently no test covering requirements in section 9.1.1.3 of [2] exists.

8.7.3 Timeslot ISCP

8.7.3.1 Intra frequency measurement accuracy for 3,84 Mcps TDD Option

8.7.3.1.1 Absolute accuracy requirement

8.7.3.1.1.1 Definition and applicability

The absolute accuracy of Timeslot ISCP is defined as the Timeslot ISCP measured from one cell / timeslot combination compared to the actual Timeslot ISCP level for the same cell / timeslot combination.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.3.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.3.1.1.1 are valid under the following conditions :

P-CCPCH RSCP \geq -102 dBm.

$$\left(\frac{P - CCPCH - E_c}{I_o} \right)_{in\ dB} \geq -8dB$$

$$\left(\frac{SCH - E_c}{I_o} \right)_{in\ dB} \geq -13dB$$

Table 8.7.3.1.1.1: UE Time slot ISCP intra frequency absolute accuracy (3,84Mcps option)

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/ 3.84 MHz]
Timeslot_ISCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The normative reference for this requirement is TS 25.123 [2] clauses 9.2.1.2.1.1 and A.9.1.3.

8.7.3.1.1.3 Test Purpose

The purpose of this test is to verify that the Timeslot ISCP measurement accuracy is within the specified limits.

8.7.3.1.1.4 Method of test

8.7.3.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The Timeslot ISCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.3.1.1.2.

Table 8.7.3.1.1.2: Timeslot ISCP intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3		-3	
SCH_Ec/lor	dB	-9		-9		-9	
SCH_t _{offset}		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,12		-3,12		-3,12	
lor	dBm / 3,84 MHz	-75.7		-59.8		-98.7	
lor/lor	dB	5	2	9	2	3	0
Timeslot ISCP, Note 1	dBm	-73.7	-70.7	-57.8	-50.8	-98.7	-95.7
lo, Note 1	dBm / 3,84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Timeslot ISCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.3.1.1.2.

8.7.3.1.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check Timeslot ISCP values for Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations in MEASUREMENT REPORT messages. These Timeslot ISCP values reported by the UE are compared to the actual Timeslot ISCP levels for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	
-CHOICE <i>Intra-frequency cell removal</i>	Not present
-New intra-frequency cells	2
-Intra-frequency cell id	1
-Cell info	
-Cell individual offset	0
-Reference time difference to cell	Not present
-Read SFN indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	3,84 Mcps TDD
-CHOICE <i>Sync case</i>	2
-Timeslot	0
-Cell parameters ID	Set to cell parameter ID of cell 1
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 1 as described in Table 8.7.3.1.2.
-Timeslot number	0
-Burst type	1
-Intra-frequency cell id	2
-Cell info	
-Cell individual offset	0
-Reference time difference to cell	Not present
-Read SFN indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	3,84 Mcps TDD
-CHOICE <i>Sync case</i>	2
-Timeslot	0
-Cell parameters ID	Set to cell parameter ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2 as described in Table 8.7.3.1.2.
-Timeslot number	0
-Burst type	1
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Timeslot ISCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	

Information Element/Group name	Value/Remark
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Report all active set cells + cells within monitored set on used frequency
-CHOICE <i>reported cell</i>	
-Maximum number of reported cells	Virtual / active set cells + 1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i> (10.3.7.	Infinity
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	
-Reporting interval	
Physical channel information elements	500 ms
-DPCH compressed mode status info (10.3.6.34)	

8.7.3.1.1.5 Test requirements

The Timeslot ISCP measurement accuracy shall meet the requirements in clause 8.7.3.1.1.2 for at least 900 of the reported Timeslot ISCP levels at each input level in step 4 for both Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3.1A Intra frequency measurement accuracy for 1,28 Mcps TDD Option

8.7.3.1A.1 Absolute accuracy requirement

8.7.3.1A.1.1 Definition and applicability

The absolute accuracy of Timeslot ISCP is defined as the Timeslot ISCP measured from one cell / timeslot combination compared to the actual Timeslot ISCP level for the same cell / timeslot combination.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.3.1A.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.3.1A.1.1 are valid under the following conditions:

P-CCPCH RSCP \geq -102 dBm.

$$\left(\frac{P - CCPCH - E_c}{I_o} \right)_{in \text{ dB}} \geq -8dB$$

$$\left(\frac{DwPCH - E_c}{I_o} \right)_{in \text{ dB}} \geq -5dB$$

Table 8.7.3.1A.1.1: UE TDD Timeslot ISCP intra frequency absolute accuracy (1,28 Mcps option)

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/ 1.28MHz]
Timeslot_ISCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The normative reference for this requirement is TS 25.123 [2] clauses 9.2.1.2.1.2

8.7.3.1A.1.3 Test Purpose

The purpose of this test is to verify that the Timeslot ISCP measurement accuracy is within the specified limits.

8.7.3.1A.1.4 Method of test

8.7.3.1A.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The Timeslot ISCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.3.1A.1.2.

Table 8.7.3.1A.1.2: Timeslot ISCP intra frequency test parameters

		Test 1			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	5		2	
I_{oc}	dBm/1.28 MHz	-76.6			
TS ISCP, Note 1	dBm	-74.6		-71.6	
Io, Note 1	dBm/1.28 MHz	-69			
Propagation condition		AWGN			
		Test 2			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	9		2	
I_{oc}	dBm/1.28 MHz	-60.2			
TS ISCP, Note 1	dBm	-58.2		-51.2	
Io, Note 1	dBm/1.28 MHz	-50			
Propagation condition		AWGN			
		Test 3			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	5		3	
I_{oc}	dBm/1.28 MHz	-101.9			
TS ISCP, Note 1	dBm	-98.9		-96.9	
Io, Note 1	dBm/1.28 MHz	-94			
Propagation condition		AWGN			
NOTE 1: TS ISCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.3.1A.1.2.

8.7.3.1A.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check Timeslot ISCP values for Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations in MEASUREMENT REPORT messages. These Timeslot ISCP values reported by the UE are compared to the actual Timeslot ISCP levels for each MEASUREMENT REPORT message.

- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1A.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	
-CHOICE <i>Intra-frequency cell removal</i>	Not present
-New intra-frequency cells	2
-Intra-frequency cell id	1
-Cell info	
-Cell individual offset	0
-Reference time difference to cell	Not present
-Read SFN indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps TDD
-Timeslot	0
-Cell parameters ID	Set to cell parameter ID of cell 1
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 1 as described in Table 8.7.3.1A.2.
-Timeslot number	0
-Burst type	1
-Intra-frequency cell id	2
-Cell info	
-Cell individual offset	0
-Reference time difference to cell	Not present
-Read SFN indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	1,28 Mcps TDD
-Timeslot	0
-Cell parameters ID	Set to cell parameter ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2 as described in Table 8.7.3.1A.2.
-Timeslot number	0
-Burst type	1
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Timeslot ISCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	

Information Element/Group name	Value/Remark
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Report all active set cells + cells within monitored set on used frequency
-CHOICE <i>reported cell</i>	
-Maximum number of reported cells	Virtual / active set cells + 1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i> (10.3.7.	Infinity
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	
-Reporting interval	
Physical channel information elements	500 ms
-DPCH compressed mode status info (10.3.6.34)	

8.7.3.1A.1.5 Test requirements

The Timeslot ISCP measurement accuracy shall meet the requirements in clause 8.7.3.1A.1.2 for at least 900 of the reported Timeslot ISCP levels at each input level in step 4 for both Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3.1B Intra frequency measurement accuracy for 7,68 Mcps TDD Option

8.7.3.1B.1 Absolute accuracy requirement

8.7.3.1B.1.1 Definition and applicability

The absolute accuracy of Timeslot ISCP is defined as the Timeslot ISCP measured from one cell / timeslot combination compared to the actual Timeslot ISCP level for the same cell / timeslot combination.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.3.1B.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.3.1B.1.2.1 are valid under the following conditions:

P-CCPCH RSCP \geq -102 dBm.

$$\left(\frac{P-CCPCH-E_c}{I_o} \right)_{in\ dB} \geq -11dB$$

$$\left(\frac{SCH-E_c}{I_o} \right)_{in\ dB} \geq -13dB$$

Table 8.7.3.1B.1.2.1: UE Timeslot ISCP intra frequency absolute accuracy (7,68Mcps option)

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/7.68 MHz]
Timeslot_ISCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.3.1.3. and A.9.3.3.

8.7.3.1B.1.3 Test Purpose

The purpose of this test is to verify that the Timeslot ISCP measurement accuracy is within the specified limits.

8.7.3.1B.1.4 Method of test

8.7.3.1B.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The Timeslot ISCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.3.1B.1.4.1.1.

Table 8.7.3.1B.1.4.1.1: Timeslot ISCP intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRARF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_Ioffset		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ior/Ioc	dBm / 7.68 MHz	-75.7		-59.8		-98.7	
Ior/Ioc		5	2	9	2	3	0
Timeslot ISCP, Note 1	dBm	-73.7	-70.7	-57.8	-50.8	-98.7	-95.7
Io, Note 1	dBm / 7.68 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Timeslot ISCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.3.1B.1.4.1.1.

8.7.3.1B.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check Timeslot ISCP values for Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations in MEASUREMENT REPORT messages. These Timeslot ISCP values reported by the UE are compared to the actual Timeslot ISCP levels for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have

been received from UE, the RF parameters are set up according to table 8.7.3.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	
-CHOICE <i>Intra-frequency cell removal</i>	Not present
-New intra-frequency cells	2
-Intra-frequency cell id	1
-Cell info	
-Cell individual offset	0
-Reference time difference to cell	Not present
-Read SFN indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	7,68 Mcps TDD
-CHOICE <i>Sync case</i>	2
-Timeslot	0
-Cell parameters ID	Set to cell parameter ID of cell 1
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 1 as described in Table 8.7.3.1.2.
-Timeslot number	0
-Burst type	1
-Intra-frequency cell id	2
-Cell info	
-Cell individual offset	0
-Reference time difference to cell	Not present
-Read SFN indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE <i>mode</i>	TDD
-CHOICE <i>TDD option</i>	7,68 Mcps TDD
-CHOICE <i>Sync case</i>	2
-Timeslot	0
-Cell parameters ID	Set to cell parameter ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2 as described in Table 8.7.3.1.2.
-Timeslot number	0
-Burst type	1
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Timeslot ISCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	

Information Element/Group name	Value/Remark
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Report all active set cells + cells within monitored set on used frequency Virtual / active set cells + 1 Not Present
-CHOICE <i>reported cell</i>	
-Maximum number of reported cells	
-Measurement validity (10.3.7.51)	
-CHOICE <i>report criteria</i> (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.3.1B.1.5 Test requirements

The Timeslot ISCP measurement accuracy shall meet the requirements in clause 8.7.3.1B.1.2 for at least 900 of the reported Timeslot ISCP levels at each input level in step 4 for both Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4 UTRA carrier RSSI

8.7.4.1 Absolute measurement accuracy for 3,84 Mcps TDD Option

8.7.4.1.1 Definition and applicability

The absolute accuracy of UTRA carrier RSSI is defined as the UTRA carrier RSSI measured from one frequency compared to the actual UTRA carrier RSSI power of that same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.4.1.2 Minimum Requirements

Table 8.7.4.1.1: UTRA carrier RSSI inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions I _o [dBm/ 3,84 MHz]
		Normal condition	Extreme condition	
UTRA carrier RSSI	dBm	± 4	± 7	-94...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.

8.7.4.1.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

8.7.4.1.4 Method of test

8.7.4.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1.2.

Table 8.7.4.1.2: UTRA carrier RSSI inter frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t _{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
loc	dBm / 3,84 MHz	-75.2	-75.2	-57.8	-54.1	-98.7	-97
Ior/loc	dB	5	5	7	2	3	0
Io, Note 1	dBm / 3,84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.1.2.

8.7.4.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message for inter frequency measurements.
- 2) UE shall transmit periodically the MEASUREMENT REPORT messages.
- 3) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE <i>report criteria</i> (10.3.7.)	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.4.1.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.1.2. The effect of assumed thermal noise and noise generated in the receiver (−99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.1.2 as shown in table 8.7.4.1.3.

Table 8.7.4.1.3: UTRA carrier RSSI absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3,84 MHz]
UTRA carrier RSSI	dBm	-4...5.2	-7...8.2	-94...-87
	dBm	± 4	± 7	-87...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause A.9.1.4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4.1A Absolute measurement accuracy for 1,28 Mcps TDD Option

8.7.4.1A.1 Definition and applicability

The absolute accuracy of UTRA carrier RSSI is defined as the UTRA carrier RSSI measured from one frequency compared to the actual UTRA carrier RSSI power of that same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.4.1A.2 Minimum Requirements

Table 8.7.4.1A.1: 1,28Mcps UTRA carrier RSSI inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/ 1,28 MHz]
UTRA carrier RSSI	dBm	± 4	± 7	-94...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.

8.7.4.1A.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

8.7.4.1A.4 Method of test

8.7.4.1A.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1A.2.

Table 8.7.4.1A.2: 1,28Mcps UTRA carrier RSSI inter frequency test parameters

		Test 1			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	5		5	
I_{oc}	dBm/1.28 MHz	-75.2		-75.2	
lo, Note 1	dBm/1.28 MHz	-69			
Propagation condition		AWGN			
		Test 2			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	7		2	
I_{oc}	dBm/1.28 MHz	-57.8		-54.1	
lo, Note 1	dBm/1.28 MHz	-50			
Propagation condition		AWGN			
		Test 3			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	3		0	
I_{oc}	dBm/1.28 MHz	-98.7		-97	
lo, Note 1	dBm/1.28 MHz	-94			
Propagation condition		AWGN			
NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.1A.2.

8.7.4.1A.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message for inter frequency measurements.
- 2) UE shall transmit periodically the MEASUREMENT REPORT messages.
- 3) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE.
- 5) After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1A.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT

messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 2) and 3) above are repeated.

- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1A.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3]

MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE <i>report criteria</i> (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.4.1A.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.1A.2 for at least 900 of the reported RSSI levels at each input level. The effect of assumed thermal noise and noise generated in the receiver (-99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.1A.2 as shown in table 8.7.4.1A.3. (only relevant for the lowest power test 3)

Table 8.7.4.1A.3: 1,28Mcps UTRA carrier RSSI absolute accuracy (corrected for RX noise)

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/1,28 MHz]
UTRA carrier RSSI	dBm	-4...5.2	-7...8.2	-94...-87
	dBm	± 4	± 7	-87...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause A.9.1.4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4.1B Absolute measurement accuracy for 7,68 Mcps TDD Option

8.7.4.1B.1 Definition and applicability

The absolute accuracy of UTRA carrier RSSI is defined as the UTRA carrier RSSI measured from one frequency compared to the actual UTRA carrier RSSI power of that same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.4.1B.2 Minimum Requirements

Table 8.7.4.1B.2.1: UTRA carrier RSSI inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/7.68 MHz]
UTRA Carrier RSSI	dBm	± 4	± 7	-94...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.1.3 and A9.3.4

8.7.4.1B.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

8.7.4.1B.4 Method of test

8.7.4.1B.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1B.4.1.1.

Table 8.7.4.1B.4.1.1: UTRA carrier RSSI inter frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/lor	dB	-3		-3		-3	
SCH_Ec/lor	dB	-9		-9		-9	
SCH_t_offset		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,12		-3,12		-3,12	
loc	dBm / 7.68 MHz	-75.2	-75.2	-57.8	-54.1	-98.7	-97
lor/loc	dB	5	5	7	2	3	0
lo, Note 1	dBm / 7.68 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.1B.4.1.1.

8.7.4.1B.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message for inter frequency measurements.
- 2) UE shall transmit periodically the MEASUREMENT REPORT messages.
- 3) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1B.4.1.1 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1B.4.1.1 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE <i>report criteria</i> (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.4.1B.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.1B.2. The effect of assumed thermal noise and noise generated in the receiver (−99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.1B.2 as shown in table 8.7.4.1B.3.

Table 8.7.4.1B.5.1: UTRA carrier RSSI absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions I _o [dBm/7.68 MHz]
		Normal condition	Extreme condition	
UTRA Carrier RSSI	dBm	-4...5.2	-7...8.2	-94...-87
	dBm	± 4	± 7	-87...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause A.9.3.4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4.2 Relative measurement accuracy for 3,84 Mcps TDD Option

8.7.4.2.1 Definition and applicability

The relative accuracy requirement is defined as the UTRA carrier RSSI measured from one frequency compared to the UTRA Carrier RSSI measured from another frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.4.2.2 Minimum Requirements

The accuracy requirements in table 8.7.4.2.1 are valid under the following condition:

$$|\text{Channel 1}_{\text{Io}}|_{\text{dBm}/3,84 \text{ MHz}} - \text{Channel 2}_{\text{Io}}|_{\text{dBm}/3,84 \text{ MHz}}| < 20 \text{ dB.}$$

Table 8.7.4.2.1: UTRA carrier RSSI inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3,84 MHz]
UTRA carrier RSSI	dBm	± 7	± 11	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.

8.7.4.2.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

8.7.4.2.4 Method of test

8.7.4.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1.2.

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.1.2.

8.7.4.2.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message for Inter-frequency measurements.
- 2) UE shall transmit periodically the MEASUREMENT REPORT messages.
- 3) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been

received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.

- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurements in clause 8.7.4.1.4.2 is used.

8.7.4.2.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.2.2. The effect of assumed thermal noise and noise generated in the receiver (−99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.2.2 as shown in table 8.7.4.2.2.

Table 8.7.4.2.2: UTRA carrier RSSI relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3,84 MHz]
UTRA carrier RSSI	dBm	-4...5.2	-7...8.2	-94...-87
	dBm	± 4	± 7	-87...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause A.9.1.4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4.2A Relative measurement accuracy for 1,28 Mcps TDD Option

8.7.4.2A.1 Definition and applicability

The relative accuracy requirement is defined as the UTRA carrier RSSI measured from one frequency compared to the UTRA Carrier RSSI measured from another frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.4.2A.2 Minimum Requirements

The accuracy requirements in table 8.7.4.2A.1 are valid under the following condition:

$$|\text{Channel 1_Io}|_{\text{dBm}/1.28 \text{ MHz}} - \text{Channel 2_Io}|_{\text{dBm}/1.28 \text{ MHz}}| < 20 \text{ dB.}$$

Table 8.7.4.2A.1: UTRA carrier RSSI inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/1,28 MHz]
UTRA carrier RSSI	dBm	± 7	± 11	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.

8.7.4.2A.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

8.7.4.2A.4 Method of test

8.7.4.2A.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1A.2.

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.2A.2.

Table 8.7.4.2A.2: 1,28Mcps UTRA carrier RSSI inter frequency test parameters

		Test 1			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	5		5	
I_{oc}	dBm/1.28 MHz	-75.2		-75.2	
lo, Note 1	dBm/1.28 MHz	-69			
Propagation condition		AWGN			
		Test 2			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	7		2	
I_{oc}	dBm/1.28 MHz	-57.8		-54.1	
lo, Note 1	dBm/1.28 MHz	-50			
Propagation condition		AWGN			
		Test 3			
Parameter	Unit	Cell 1		Cell 2	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
\hat{I}_{or}/I_{oc}	dB	3		0	
I_{oc}	dBm/1.28 MHz	-98.7		-97	
lo, Note 1	dBm/1.28 MHz	-94			
Propagation condition		AWGN			
NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					

8.7.4.2A.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message for Inter-frequency measurements.
- 2) UE shall transmit periodically the MEASUREMENT REPORT messages.
- 3) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE.
- 5) After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

The same MEASUREMENT CONTROL message for absolute inter frequency measurements in clause 8.7.4.1A.4.2 is used.

8.7.4.2A.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.2A.2 for at least 900 of the reported RSSI levels at each input level. The effect of assumed thermal noise and noise generated in the receiver (-99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.2A.2 as shown in table 8.7.4.2A.3. (only relevant for the lowest power test 3)

Table 8.7.4.2A.3: UTRA carrier RSSI relative accuracy (corrected for RX noise)

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/1,28 MHz]
UTRA carrier RSSI	dBm	-4...5.2	-7...8.2	-94...-87
	dBm	± 4	± 7	-87...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause A.9.1.4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4.2B Relative measurement accuracy for 7,68 Mcps TDD Option

8.7.4.2B.1 Definition and applicability

The relative accuracy requirement is defined as the UTRA carrier RSSI measured from one frequency compared to the UTRA Carrier RSSI measured from another frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.4.2B.2 Minimum Requirements

The accuracy requirements in table 8.7.4.2B.2.1 are valid under the following condition:

$$|\text{Channel 1}_{\text{Io}}|_{\text{dBm}/3,84 \text{ MHz}} - \text{Channel 2}_{\text{Io}}|_{\text{dBm}/3,84 \text{ MHz}}| < 20 \text{ dB.}$$

Table 8.7.4.2B.2.1: UTRA carrier RSSI inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/7.68 MHz]
UTRA Carrier RSSI	dBm	± 7	± 11	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.2 and A9.3.4

8.7.4.2B.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

8.7.4.2B.4 Method of test

8.7.4.2B.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1B.4.1.1.

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.1B.4.1.1.

8.7.4.2B.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message for Inter-frequency measurements.
- 2) UE shall transmit periodically the MEASUREMENT REPORT messages.
- 3) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1B.4.1.1 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1B.4.1.1 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurements in clause 8.7.4.1B.4.2 is used.

8.7.4.2B.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.2B.2. The effect of assumed thermal noise and noise generated in the receiver (-99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.2B.2 as shown in table 8.7.4.2B.5.1.

Table 8.7.4.2B.5.1: UTRA carrier RSSI relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	fo [dBm/3,84 MHz]
UTRA carrier RSSI	dBm	-4...5.2	-7...8.2	-94...-87
	dBm	± 4	± 7	-87...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause A.9.3.4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.5 GSM carrier RSSI

8.7.5.1.1 RSSI (RX_LEV) 3,84 Mcps TDD Option

Void

8.7.5.1A.1 RSSI (RX_LEV) 1,28 Mcps TDD Option

8.7.5.1A.1.1 Definition and applicability

The absolute accuracy of GSM RSSI is defined as the RX_LEV measured in a GSM cell on one frequency compared to the actual power of that cell.

The requirements and this test apply only to UE supporting both 1,28Mcps UTRA TDD and GSM.

8.7.5.1A.1.2 Minimum Requirements

Table 8.7.5.1A.1.1: GSM RX_LEV absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Input level dBm
RX_LEV	dBm	± 4	± 6	-110...-70
	dBm	± 6	± 6	-70...-48
	dBm	± 9	± 9	-48...-38

RXLEV 0	=	less than	-110 dBm.
RXLEV 1	=	-110 dBm	to -109 dBm
RXLEV 2	=	-109 dBm	to -108 dBm
		:	
		:	
RXLEV 62	=	-49 dBm	to -48 dBm
RXLEV 63	=	greater than	-48 dBm

The normative reference for this requirement is TS 45.008 [20] clause 8.1.2

8.7.5.1A.1.3 Test purpose

The purpose of this test is to verify that the GSM RSSI absolute measurement accuracy is within the specified limits.

This test will verify the requirements in section 9.1.1.5 and A.9.1.5 of TS25.123.

8.7.5.1A.1.4 Method of test

8.7.5.1A.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

Cell 1 is a UTRA 1,28Mcps TDD cell and cell 2 is a GSM cell

A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test are set up according to table 8.7.5.1A.1.2.

Table 8.7.5.1A.1.2. General GSM RSSI test parameters

Parameter	Unit	Value	Comment
DCH parameters		DL reference measurement channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Inter-RAT measurement quantity		GSM carrier RSSI	
BSIC verification required		No	
Monitored cell list size		6 GSM neighbours including ARFCN 1	

Table 8.7.5.1A.1.3 Cell 1 (TDD Cell) specific test parameters

Parameter	Unit	Cell 1	
DL timeslot number		0	DwPTS
UTRA RF Channel number		Channel 1	
PCCPCH_Ec/lor	dB	-3	
DwPCH_Ec/lor	dB		0
OCNS_Ec/lor	dB	-3	
lor/loc	dB	3	
loc	dBm / 1.28MHz	-70	
Propagation condition		AWGN	

Table 8.7.5.1A.1.4 Cell 2 specific GSM Cell test parameters

Parameter	Unit	TEST1	TEST2	TEST3
UTRA RF Channel number		2		
Cell Level	dBm/200KHz	-100	-75	-50
Propagation condition		AWGN	AWGN	AWGN

8.7.5.1A.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message for inter RAT measurement. In the measurement control information periodic reporting of the GSM carrier RSSI is requested to the UE.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check RX_LEV value of Cell 2 in the MEASUREMENT REPORT messages. Levels of Cell 2 reported by the UE are compared to the actual level of Cell 2 for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the GSM cell RF parameters are set up according to table 8.7.5.1A.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the GSM cell RF parameters are set up according to table 8.7.5.1A.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Note: Numbers in brackets after an item e.g. “Message Type (10.2.17)” in the IE description are references to clause numbers in TS 25.331 [9] describing that item in more detail.

MEASUREMENT CONTROL message for GSM RSSI measurement (Step 1):

Information Element	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-RAT measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	GSM
- Measurement quantity	RX_LEV
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities	FALSE
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	
-Maximum number of reported cells	Report all active set cells + cells within monitored set on used frequency
-Measurement validity	Virtual/active set cells + 2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria Infinity 500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

8.7.2.1.1.5 Test requirements

The RX_LEV measurement accuracy shall meet the requirements in clause 8.7.5.1A.1.1 for at least 900 of the reported levels at each input level.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.5.1B.1 RSSI (RX_LEV) 7,68 Mcps TDD Option

8.7.5.1B.1.1 Definition and applicability

Cell 1 is a UTRA TDD cell and cell 2 is a GSM cell. In the measurement control information it is indicated to the UE that periodic reporting of the GSM carrier RSSI measurement is used.

The requirements and this test apply only to UE supporting both 7,68Mcps UTRA TDD and GSM.

8.7.5.1B.1.2 Minimum Requirements

Table 8.7.5.1B.1.2.1: GSM RX_LEV absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Input level dBm
RX_LEV	dBm	± 4	± 6	-110...-70
	dBm	± 6	± 6	-70...-48
	dBm	± 9	± 9	-48...-38

RXLEV 0	=	less than	-110 dBm.
RXLEV 1	=	-110 dBm	to -109 dBm
RXLEV 2	=	-109 dBm	to -108 dBm
		:	
		:	
RXLEV 62	=	-49 dBm	to -48 dBm
RXLEV 63	=	greater than	-48 dBm

The normative reference for this requirement is TS 45.008 [20] clause 8.1.2

8.7.5.1B.1.3 Test purpose

The purpose of this test is to verify that the GSM RSSI absolute measurement accuracy is within the specified limits.

This test will verify the requirements in section 9.1.1.5 and A.9.3.5 of TS25.123.

8.7.5.1B.1.4 Method of test

8.7.5.1B.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

Cell 1 is a UTRA 1,28Mcps TDD cell and cell 2 is a GSM cell

A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test are set up according to table 8.7.5.1B.1.4.1.1, 8.7.5.1B.1.4.1.2 and 8.7.5.1B.1.4.1.3.

Table 8.7.5.1B.1.4.1.1 General GSM RSSI test parameters

Parameter	Unit	Value	Comment
DCH parameters		DL reference measurement channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Inter-RAT measurement quantity		GSM carrier RSSI	
BSIC verification required		No	
Monitored cell list size		6 GSM neighbours including ARFCN 1	

Table 8.7.5.1B.1.4.1.2 Cell 1 (TDD Cell) specific test parameters

Parameter	Unit	Cell 1	
		0	1
DL timeslot number		0	1
UTRA RF Channel number		Channel 1	
PCCPCH_Ec/Ior	dB	-3	n.a.
SCH_Ec/Ior	dB	-9	n.a.
SCH _{offset}		0	n.a.
OCNS_Ec/Ior	dB	-3,12	Note 2
DPCH_Ec/Ior	dB	n.a.	Note 1
Ior/Ioc	dB	6	6
I _o , Note 1	dBm / 7.68 MHz	-70	
Propagation condition		AWGN	
Note 1: The DPCH level is controlled by the power control loop			
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior.			

Table 8.7.5.1B.1.4.1.3 Cell 2 specific GSM Cell test parameters

Parameter	Unit	TEST1	TEST2	TEST3
UTRA RF Channel number		2		
Cell Level	dBm/200KHz	-100	-75	-50
Propagation condition		AWGN	AWGN	AWGN

8.7.5.1B.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message for inter RAT measurement. In the measurement control information periodic reporting of the GSM carrier RSSI is requested to the UE.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check RX_LEV value of Cell 2 in the MEASUREMENT REPORT messages. Levels of Cell 2 reported by the UE are compared to the actual level of Cell 2 for each MEASUREMENT REPORT message.
- 4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the GSM cell RF parameters are set up according to table 8.7.5.1B.1.4.1.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the GSM cell RF parameters are set up according to table 8.7.5.1B.1.4.1.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Note: Numbers in brackets after an item e.g “Message Type (10.2.17)” in the IE description are references to clause numbers in TS 25.331 [9] describing that item in more detail.

MEASUREMENT CONTROL message for GSM RSSI measurement (Step 1):

Information Element	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-RAT measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter coefficient	0
-CHOICE mode	GSM
- Measurement quantity	RX_LEV
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities	FALSE
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	
- Maximum number of reported cells	Report all active set cells + cells within monitored set on used frequency
-Measurement validity	Virtual/active set cells + 2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria Infinity 500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

8.7.5.1B.1.5 Test requirements

The RX_LEV measurement accuracy shall meet the requirements in clause 8.7.5.1B.1.2 for at least 900 of the reported levels at each input level.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.6 SIR

Void

8.7.7 Transport Channel BLER

Void

8.7.8 SFN-SFN observed time difference

8.7.8.1 SFN-SFN observed time difference type 1

8.7.8.1.1 Measurement accuracy for 3,84 Mcps TDD Option

8.7.8.1.1.1 Definition and applicability

This measurement is specified in clause 5.1.10 of TS 25.225 [22]. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.8.1.1.2 Minimum requirements

The accuracy requirement in table 8.7.8.1.1.1 is valid under the following conditions:

$P\text{-CCPCH_RSCP}_{1,2} \geq -102 \text{ dBm}$.

$$\left| P\text{-CCPCH_RSCP}_1 \Big|_{in \text{ dBm}} - P\text{-CCPCH_RSCP}_2 \Big|_{in \text{ dBm}} \right| \leq 20 \text{ dB}$$

$$\left(\frac{P\text{-CCPCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} \geq -8 \text{ dB}$$

$$\left(\frac{SCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} \geq -13 \text{ dB}$$

where the received P-CCPCH E_c/I_o is defined as,

$$\left(\frac{P\text{-CCPCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} = \left(\frac{P\text{-CCPCH_}E_c}{I_{or}} \right) \Big|_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right) \Big|_{in \text{ dB}}$$

and the received SCH E_c/I_o is defined as,

$$\left(\frac{SCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} = \left(\frac{SCH_}E_c}{I_{or}} \right) \Big|_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right) \Big|_{in \text{ dB}}$$

and SCH_E_c/I_{or} is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.8.1.1.1: SFN-SFN observed time difference type 1 accuracy

Parameter	Unit	Accuracy [chip]	Conditions
			I_o [dBm/3,84 MHz]
SFN-SFN observed time difference type 1	chip	+/-0,5	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.8 and A.9.1.8.

8.7.8.1.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-SFN observed time difference type 1 is within the limit specified in clause 8.7.8.1.1.2.

8.7.8.1.1.4 Method of test

8.7.8.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...9830400 chip. The SFN-SFN observed time difference type 1 accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.8.1.1.2.

Table 8.7.8.1.1.2: SFN-SFN observed time difference type 1 intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3		-3	
SCH_Ec/lor	dB	-9		-9		-9	
SCH_toffset		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,12		-3,12		-3,12	
loc	dBm / 3,84 MHz	-75.2	-75.2	-57.8	-54.7	-98.7	-98.7
lor/loc	dB	5	5	7	3	3	3
lo, Note 1	dBm / 3,84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.8.1.1.2.

8.7.8.1.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to the actually set SFN-SFN observed time difference type 1 value for each MEASUREMENT REPORT message.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.8.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.8.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	1 Modify AM RLC Periodical reporting Not Present
-CHOICE <i>Measurement type</i> -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE <i>mode</i> -Measurement quantity list -Measurement quantity	Intra-frequency measurement Not Present 0 TDD 1 Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE <i>mode</i> -Timeslot ISCP reporting indicator -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	Type 1 FALSE FALSE TDD FALSE TRUE TRUE
-Reporting quantities for monitored set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE <i>mode</i> -Timeslot ISCP reporting indicator -Proposed TGSN reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	Type 1 FALSE FALSE TDD FALSE FALSE TRUE TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -CHOICE <i>reported cell</i> -Maximum number of reported cells -Measurement validity (10.3.7.51) -CHOICE <i>report criteria</i> (10.3.7. -Periodical reporting criteria (10.3.7.53) -Amount of reporting -Reporting interval	Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.8.1.1.5 Test requirements

The SFN-SFN observed time difference type 1 accuracy shall meet the requirements in clause 8.7.8.1.1.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.8.1.1A Measurement accuracy for 1,28 Mcps TDD Option

Void

8.7.8.1.1B Measurement accuracy for 7,68 Mcps TDD Option

8.7.8.1.1B.1 Definition and applicability

This measurement is specified in clause 5.1.10 of TS 25.225 [22]. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.8.1.1B.2 Minimum requirements

The accuracy requirement in table 8.7.8.1.1B.2.1 is valid under the following conditions:

P-CCPCH_RSCP1,2 ≥ -102 dBm..

$$\left| P\text{-CCPCH RSCP1} \Big|_{in\ dBm} - P\text{-CCPCH RSCP2} \Big|_{in\ dBm} \right| \leq 20dB$$

$$\left(\frac{P\text{-CCPCH}_E_c}{I_o} \right) \Big|_{in\ dB} \geq -11dB$$

$$\left(\frac{SCH_E_c}{I_o} \right) \Big|_{in\ dB} \geq -13dB$$

where the received P-CCPCH E_c/I_o is defined as,

$$\left(\frac{P\text{-CCPCH}_E_c}{I_o} \right) \Big|_{in\ dB} = \left(\frac{P\text{-CCPCH}_E_c}{I_{or}} \right) \Big|_{in\ dB} - \left(\frac{I_o}{\hat{I}_{or}} \right) \Big|_{in\ dB}$$

and the received SCH E_c/I_o is defined as,

$$\left(\frac{SCH_E_c}{I_o} \right) \Big|_{in\ dB} = \left(\frac{SCH_E_c}{I_{or}} \right) \Big|_{in\ dB} - \left(\frac{I_o}{\hat{I}_{or}} \right) \Big|_{in\ dB}$$

and SCH_E_c/I_{or} is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.8.1.1B.2.1: SFN-SFN observed time difference type 1 accuracy

Parameter	Unit	Accuracy [chip]	Conditions
			I_o [dBm/7.68 MHz]
SFN-SFN observed time difference	chip	+/-1 for both type 1 and 2	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.8.1.3 and A.9.3.8.

8.7.8.1.1B.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-SFN observed time difference type 1 is within the limit specified in clause 8.7.8.1.1B.2.

8.7.8.1.1B.4 Method of test

8.7.8.1.1B.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...19660800 chip. The SFN-SFN observed time difference type 1 accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.8.1.1B.4.1.1.

Table 8.7.8.1.1B.4.1.1: SFN-SFN observed time difference type 1 intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRARF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3		-3	
SCH_Ec/lor	dB	-9		-9		-9	
SCH_toffset		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,12		-3,12		-3,12	
loc	dBm / 7.68 MHz	-75.2	-75.2	-57.8	-54.7	-98.7	-98.7
lor/loc	dB	5	5	7	3	3	3
lo, Note 1	dBm / 7.68 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.8.1.1B.4.1.1.

8.7.8.1.1B.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to the actually set SFN-SFN observed time difference type 1 value for each MEASUREMENT REPORT message.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.8.1.1B.4.1.1 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.8.1.1B.4.1.1 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	1 Modify AM RLC Periodical reporting Not Present
-CHOICE <i>Measurement type</i> -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE <i>mode</i> -Measurement quantity list -Measurement quantity	Intra-frequency measurement Not Present 0 TDD 1 Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE <i>mode</i> -Timeslot ISCP reporting indicator -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	Type 1 FALSE FALSE TDD FALSE TRUE TRUE
-Reporting quantities for monitored set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE <i>mode</i> -Timeslot ISCP reporting indicator -Proposed TGSN reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	Type 1 FALSE FALSE TDD FALSE FALSE TRUE TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -CHOICE <i>reported cell</i> -Maximum number of reported cells -Measurement validity (10.3.7.51) -CHOICE <i>report criteria</i> (10.3.7. -Periodical reporting criteria (10.3.7.53) -Amount of reporting -Reporting interval	Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.8.1.1B.5 Test requirements

The SFN-SFN observed time difference type 1 accuracy shall meet the requirements in clause 8.7.8.1.1B.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.8.2 SFN-SFN observed time difference type 2

Void

8.7.9 Observed time difference to GSM cell

Void

8.7.10 UE GPS Timing of Cell Frames for UP

Void

8.7.11 SFN-CFN observed time difference

8.7.11.1 Intra frequency measurement requirement for 3,84 Mcps option

8.7.11.1.1 Definition and applicability

The intra frequency SFN-CFN observed time difference is defined as the SFN-CFN observed time difference from the active cell to a neighbour cell that is in the same frequency. This measurement is specified in clause 5.1.11 of TS 25.225 [22]. The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.11.1.2 Minimum requirements

The accuracy requirement in table 8.7.11.1.1 is valid under the following conditions:

$P\text{-CCPCH_RSCP}_{1,2} \geq -102 \text{ dBm}$.

$$\left| P\text{-CCPCH_RSCP1} \Big|_{in \text{ dBm}} - P\text{-CCPCH_RSCP2} \Big|_{in \text{ dBm}} \right| \leq 20 \text{ dB}$$

$$\left(\frac{P\text{-CCPCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} \geq -8 \text{ dB}$$

$$\left(\frac{SCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} \geq -13 \text{ dB}$$

where the received P-CCPCH E_c/I_o is defined as,

$$\left(\frac{P\text{-CCPCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} = \left(\frac{P\text{-CCPCH_}E_c}{I_{or}} \right) \Big|_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right) \Big|_{in \text{ dB}}$$

and the received SCH E_c/I_o is defined as,

$$\left(\frac{SCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} = \left(\frac{SCH_}E_c}{I_{or}} \right) \Big|_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right) \Big|_{in \text{ dB}}$$

and SCH_E_c/I_{or} is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.11.1.1: SFN-CFN observed time difference accuracy for an intra frequency UTRA TDD neighbour cell

Parameter	Unit	Accuracy [chip]	Conditions
			Io [dBm/3,84 MHz]
SFN-CFN observed time difference	chip	+/-0,5	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.11 and A.9.1.10.

8.7.11.1.3 Test Purpose

The purpose of this test is to verify that the measurement accuracy of SFN-CFN observed time difference is within the limit specified in clause 8.7.11.1.2.

8.7.11.1.4 Method of test

8.7.11.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...255 frames. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.11.1.2.

Table 8.7.11.1.2: SFN-CFN observed time difference intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_toffset		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3,84 MHz	-75.2	-75.2	-57.8	-54.7	-98.7	-98.7
Ior/Ioc	dB	5	5	7	3	3	3
Io, Note 1	dBm / 3,84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.11.1.2.

8.7.11.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.11 of TS 25.225 [22]. This value shall be compared to the actually set SFN-CFN observed time difference value for each MEASUREMENT REPORT message.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to

table 8.7.11.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i> (10.3.7.53)	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.11.1.5 Test requirements

The SFN-CFN observed time difference accuracy shall meet the requirements in clause 8.7.11.1.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.11.1A Intra frequency measurement requirement for 1,28 Mcps option

Void

8.7.11.1B Intra frequency measurement requirement for 7,68 Mcps option

8.7.11.1B.1 Definition and applicability

The intra frequency SFN-CFN observed time difference is defined as the SFN-CFN observed time difference from the active cell to a neighbour cell that is in the same frequency. This measurement is specified in clause 5.1.11 of TS 25.225 [22]. The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.11.1B.2 Minimum requirements

The accuracy requirement in table 8.7.11.1B.2.1 is valid under the following conditions:

$P\text{-CCPCH_RSCP}_{1,2} \geq -102 \text{ dBm}$.

$$\left| P\text{-CCPCH_RSCP}_1 \Big|_{in \text{ dBm}} - P\text{-CCPCH_RSCP}_2 \Big|_{in \text{ dBm}} \right| \leq 20 \text{ dB}$$

$$\left(\frac{P\text{-CCPCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} \geq -11 \text{ dB}$$

$$\left(\frac{SCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} \geq -13 \text{ dB}$$

where the received P-CCPCH E_c/I_o is defined as,

$$\left(\frac{P\text{-CCPCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} = \left(\frac{P\text{-CCPCH_}E_c}{I_{or}} \right) \Big|_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right) \Big|_{in \text{ dB}}$$

and the received SCH E_c/I_o is defined as,

$$\left(\frac{SCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} = \left(\frac{SCH_}E_c}{I_{or}} \right) \Big|_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right) \Big|_{in \text{ dB}}$$

and $SCH_}E_c/I_{or}$ is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.11.1B.2.1: SFN-CFN observed time difference accuracy for an intra frequency UTRA TDD neighbour cell

Parameter	Unit	Accuracy [chip]	Conditions
			I_o [dBm/7.68 MHz]
SFN-CFN observed time difference	chip	+/-1	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.11.1 and A.9.3.10.

8.7.11.1B.3 Test Purpose

The purpose of this test is to verify that the measurement accuracy of SFN-CFN observed time difference is within the limit specified in clause 8.7.11.1B.2.

8.7.11.1B.4 Method of test

8.7.11.1B.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...255 frames. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.11.1B.4.1.1.

Table 8.7.11.1B.4.1.1: SFN-CFN observed time difference intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRARF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/lor	dB	-3		-3		-3	
SCH_Ec/lor	dB	-9		-9		-9	
SCH_t _{offset}		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,12		-3,12		-3,12	
loc	dBm / 7.68 MHz	-75.2	-75.2	-57.8	-54.7	-98.7	-98.7
lor/loc	dB	5	5	7	3	3	3
lo, Note 1	dBm / 7.68 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.11.1B.4.1.1.

8.7.11.1B.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.11 of TS 25.225 [22]. This value shall be compared to the actually set SFN-CFN observed time difference value for each MEASUREMENT REPORT message.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.1B.4.1.1 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.1B.4.1.1 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE <i>reported cell</i>	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE <i>report criteria</i> (10.3.7.53)	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.11.1B.5 Test requirements

The SFN-CFN observed time difference accuracy shall meet the requirements in clause 8.7.11.1B.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.11.2 Inter frequency measurement requirement for 3,84 Mcps option

8.7.11.2.1 Definition and applicability

The inter frequency SFN-CFN observed time difference is defined as the SFN-CFN time difference from the active cell to a UTRA TDD neighbour cell that is in a different frequency. This measurement is specified in clause 5.1.11 of TS 25.225 [22]. The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.11.2.2 Minimum requirements

The accuracy requirement in table 8.7.11.2.1 is valid under the following conditions:

$P\text{-CCPCH_RSCP}_{1,2} \geq -102 \text{ dBm}$.

$$\left| P\text{-CCPCH_RSCP}_1 \Big|_{\text{in dBm}} - P\text{-CCPCH_RSCP}_2 \Big|_{\text{in dBm}} \right| \leq 20 \text{ dB}$$

$$\left(\frac{P\text{-CCPCH_}E_c}{I_o} \right) \Big|_{\text{in dB}} \geq -8 \text{ dB}$$

$$\left(\frac{SCH_}E_c}{I_o} \right) \Big|_{\text{in dB}} \geq -13 \text{ dB}$$

where the received P-CCPCH E_c/I_o is defined as,

$$\left(\frac{P\text{-CCPCH_}E_c}{I_o} \right) \Big|_{\text{in dB}} = \left(\frac{P\text{-CCPCH_}E_c}{I_{or}} \right) \Big|_{\text{in dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right) \Big|_{\text{in dB}}$$

and the received SCH E_c/I_o is defined as,

$$\left(\frac{SCH_}E_c}{I_o} \right) \Big|_{\text{in dB}} = \left(\frac{SCH_}E_c}{I_{or}} \right) \Big|_{\text{in dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right) \Big|_{\text{in dB}}$$

and SCH_E_c/I_{or} is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.11.2.1: SFN-CFN observed time difference accuracy for an inter frequency UTRA TDD neighbour cell

Parameter	Unit	Accuracy [chip]	Conditions
			I_o [dBm/3,84 MHz]
SFN-CFN observed time difference	chip	+/-0,5	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.11 and A.9.1.10.

8.7.11.2.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-CFN observed time difference is within the limit specified in clause 8.7.11.2.2.

8.7.11.2.4 Method of test

8.7.11.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case, UTRA TDD cell 1 and UTRA TDD cell 2 are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...256 frames. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.11.2.2.

Table 8.7.11.2.2: SFN-CFN observed time difference inter frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/lor	dB	-3		-3		-3	
SCH_Ec/lor	dB	-9		-9		-9	
SCH_t _{offset}		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,12		-3,12		-3,12	
loc	dBm / 3,84 MHz	-75.2	-75.2	-57.8	-54.7	-98.7	-98.7
lor/loc	dB	5	5	7	3	3	3
lo, Note 1	dBm / 3,84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.11.2.2.

8.7.11.2.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.11 of TS 25.225 [22]. This value shall be compared to the actually set SFN-CFN observed time difference value for each MEASUREMENT REPORT message.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.2.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.2.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE
-Cell identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE <i>report criteria</i> (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.11.2.5 Test requirements

The SFN-CFN observed time difference accuracy shall meet the requirements in clause 8.7.11.2.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.11.2A Inter frequency measurement requirement for 1,28 Mcps option

Void

8.7.11.2B Inter frequency measurement requirement for 7,68 Mcps option

8.7.11.2B.1 Definition and applicability

The inter frequency SFN-CFN observed time difference is defined as the SFN-CFN time difference from the active cell to a UTRA TDD neighbour cell that is in a different frequency. This measurement is specified in clause 5.1.11 of TS 25.225 [22]. The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to 7.68Mcps TDD UE.

8.7.11.2B.2 Minimum requirements

The accuracy requirement in table 8.7.11.2B.2.1 is valid under the following conditions:

$P\text{-CCPCH_RSCP}_{1,2} \geq -102 \text{ dBm}$.

$$\left| P\text{-CCPCH_RSCP}_1 \Big|_{in \text{ dBm}} - P\text{-CCPCH_RSCP}_2 \Big|_{in \text{ dBm}} \right| \leq 20 \text{ dB}$$

$$\left(\frac{P\text{-CCPCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} \geq -11 \text{ dB}$$

$$\left(\frac{SCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} \geq -13 \text{ dB}$$

where the received P-CCPCH E_c/I_o is defined as,

$$\left(\frac{P\text{-CCPCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} = \left(\frac{P\text{-CCPCH_}E_c}{I_{or}} \right) \Big|_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right) \Big|_{in \text{ dB}}$$

and the received SCH E_c/I_o is defined as,

$$\left(\frac{SCH_}E_c}{I_o} \right) \Big|_{in \text{ dB}} = \left(\frac{SCH_}E_c}{I_{or}} \right) \Big|_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right) \Big|_{in \text{ dB}}$$

and SCH_E_c/I_{or} is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.11.2B.2.1: SFN-CFN observed time difference accuracy for an inter frequency UTRA TDD neighbour cell

Parameter	Unit	Accuracy [chip]	Conditions
			I_o [dBm/7.68 MHz]
SFN-CFN observed time difference	chip	+/-1	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.11.1 and A.9.3.10.

8.7.11.2B.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-CFN observed time difference is within the limit specified in clause 8.7.11.2B.2.

8.7.11.2B.4 Method of test

8.7.11.2B.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case, UTRA TDD cell 1 and UTRA TDD cell 2 are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...256 frames. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.11.2B.4.1.1.

Table 8.7.11.2B.4.1.1: SFN-CFN observed time difference inter frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/lor	dB	-3		-3		-3	
SCH_Ec/lor	dB	-9		-9		-9	
SCH_t _{offset}		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,12		-3,12		-3,12	
loc	dBm / 7.68 MHz	-75.2	-75.2	-57.8	-54.7	-98.7	-98.7
lor/loc	dB	5	5	7	3	3	3
lo, Note 1	dBm / 7.68 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.11.2B.4.1.1.

8.7.11.2.4B.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.11 of TS 25.225 [22]. This value shall be compared to the actually set SFN-CFN observed time difference value for each MEASUREMENT REPORT message.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.2B.4.1.1 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.2B.4.1.1 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	Not Present
-Additional measurements list (10.3.7.1)	
-CHOICE <i>Measurement type</i>	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE <i>inter-frequency cell removal</i>	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE <i>reporting criteria</i>	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE <i>mode</i>	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE
-Cell identity reporting indicator	TRUE
-CHOICE <i>mode</i>	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE <i>report criteria</i> (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.11.2B.5 Test requirements

The SFN-CFN observed time difference accuracy shall meet the requirements in clause 8.7.11.2B.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.12 UE transmitted power

8.7.12.1 UE transmitted power for 3.84 Mcps TDD Option

Void

8.7.12.1A UE transmitted power for 1.28 Mcps TDD Option

8.7.12.1A.1 Definition and applicability

The UE transmitted power absolute accuracy is defined as difference between the UE reported value and the UE transmitted power measured by test system. The reference point for the UE transmitted power shall be the antenna connector of the UE.

The requirements and this test apply to all types of 1.28 Mcps TDD UE.

8.7.12.1A.2 Minimum requirements

The measurement period in CELL_DCH state and CELL_FACH state is 1 slot.

Table 8.7.12.1A.2.1 UE transmitted power absolute accuracy

Parameter	Unit	Accuracy [dB]	
		PUEMAX 24dBm	PUEMAX 21dBm
UE transmitted power \geq PUEMAX	dBm	+1/-3	± 2
PUEMAX > UE transmitted power \geq PUEMAX-1	dBm	+1,5/-3,5	$\pm 2,5$
PUEMAX-1 > UE transmitted power \geq PUEMAX-2	dBm	+2/-4	± 3
PUEMAX-2 > UE transmitted power \geq PUEMAX-3	dBm	+2,5/-4,5	$\pm 3,5$
PUEMAX-3 > UE transmitted power \geq PUEMAX-10	dBm	+3/-5	± 4

NOTE 1: User equipment maximum output power, PUEMAX, is the maximum output power level without tolerance defined for the power class of the UE in 3GPP TS 25.102 "UTRA (UE) TDD; Radio Transmission and Reception".

NOTE 2: UE transmitted power is the reported value.

The normative reference for this requirement is TS 25.123 clause 9.1.2.1.

8.7.12.1A.3 Test purpose

The purpose of this test is to verify that for any reported value of UE Transmitted Power in the range PUEMAX to PUEMAX-10 that the actual UE mean power lies within the range specified in clause 8.7.12.1A.2.

8.7.12.1A.4 Method of test

8.7.12.1A.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect SS to the UE antenna connector as shown in figure A.1.

The test parameters are given in Table 8.7.12.1A.4.1 and 8.7.12.1A.4.2 below. In the measurement control information it shall be indicated to the UE that periodic reporting of the UE transmitted power measurement shall be used.

Table 8.7.12.1A.4.1: General test parameters for UE transmitted power

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1.2
DL-Power Control		Off	

Table 8.7.12.1A.4.2: Cell Specific parameters for UE transmitted power

Parameter	Unit	Cell 1	
Timeslot Number		0	DwPTS
UTRA RF Channel Number (NOTE 2)		Channel 1	
PCCPCH_Ec/lor	dB	-3	
DwPCH_Ec/lor	dB		0
OCNS_Ec/lor	dB	-3	
\hat{I}_{or}/I_{oc}	dB	3	
I_{oc}	dBm/1.28 MHz	-70	
PCCPCH_RSCP (NOTE 1)	dBm	-70	
Propagation Condition		AWGN	
NOTE 1: PCCPCH RSCP level has been calculated from other parameters for information purposes. They are not settable parameters themselves.			
NOTE2: In the case of multi-frequency network, the UTRA RF Channel Number can be set for the primary frequency in this test.			

8.7.12.1A.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters are set up according to table 8.7.12.1A.4.1 and 8.7.12.1A.4.2. Set the UE power and Maximum allowed UL TX power to the maximum power for the UE power class.
- 2) SS shall send continuously during the entire test Up power control commands to the UE.
- 3) SS shall transmit the MEASUREMENT CONTROL message as defined in the specific message contents below.
- 4) Decode the UE Transmitted power reported by the UE in the next available MEASUREMENT REPORT message.
- 5) Measure the mean power of the UE over a period of one timeslot.
- 6) Steps 4 and 5 shall be repeated until statistical significance according to Annex F.6.2.8 is achieved.
- 7) Decrease the Maximum allowed UL TX power by 1 dB. The SS shall transmit the PHYSICAL CHANNEL RECONFIGURATION message, as defined in the specific message contents below.
- 8) SS shall wait for the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE.
- 9) Repeat from step 4) until the Maximum allowed UL TX Power reaches PUEMAX -10.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element	Value/Remark
Message Type UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -CHOICE Measurement type -UE Internal measurement quantity -Measurement quantity -Filter coefficient -UE Internal reporting quantity -UE Transmitted power -CHOICE mode -CHOICE TDD option -1.28Mcps TDD -T _{adv} info -CHOICE report criteria -Amount of reporting -Reporting interval -Measurement Reporting Mode -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -AdditionalMeasurementList	5 SETUP UE Internal measurement UE Transmitted power 0 TRUE TDD False Periodical reporting criteria Infinity 250 AM RLC Periodical reporting Not Present

MEASUREMENT REPORT message:

Information Element	Value/remark
Message Type Integrity check info - Message authentication code - RRC Message sequence number Measurement identity Measured Results - CHOICE Measurement - Choice mode - UE Transmitted power list - UE Transmitted power - CHOICE TDD option -1.28Mcps TDD -T _{adv} Measured results on RACH Additional measured results Event results	The presence of this IE is dependent on PIXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent. This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. 5 UE Internal measured results TDD Checked that this IE is present Checked that this IE is present Checked that this IE is absent Checked that this IE is absent Checked that this IE is absent Checked that this IE is absent

PHYSICAL CHANNEL RECONFIGURATION message:

Information Element	Value/Remark	Version
Message Type		
UE Information Elements		
-RRC transaction identifier	0	
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/leftmost bit of the bit string contains the most significant bit of the MAC-I.	
-RRC message sequence number	SS provides the value of this IE, from its internal counter.	
-Integrity protection mode info	Not Present	
-Ciphering mode info	Not Present	
-Activation time	Not Present	
-New U-RNTI	Not Present	
-New C-RNTI	Not Present	
-RRC State Indicator	CELL_DCH	
-UTRAN DRX cycle length coefficient	Not Present	
CN Information Elements		
-CN Information info	Not Present	
UTRAN mobility information elements		
-URA identity	Not Present	
RB information elements		
-Downlink counter synchronisation info	Not Present	
PhyCH information elements		
-Frequency info	Not Present	
Uplink radio resources		
-Maximum allowed UL TX power	At the first time this value is set to PUEMAX-1. After the second time this value is decreased with 1 dB from previous value.	

8.7.12.1A.5 Test requirements

Compare each of the UE transmitted power reports against the following mean power measurement. At least 90% of the mean power measurements for any one value of reported UE transmitted power shall be within the range specified in table 8.7.12.1A.5.

Table 8.7.12.1A.5 UE transmitted power test requirements

UE reported value	SS measured mean power (X) range [dBm]	
	PUEMAX 24dBm	PUEMAX 21dBm
UE_TX_POWER_104	$33-3.7 \leq X < 34+1.7$	$33-2.7 \leq X < 34+2.7$
UE_TX_POWER_103	$32-3.7 \leq X < 33+1.7$	$32-2.7 \leq X < 33+2.7$
•	•	•
•	•	•
•	•	•
UE_TX_POWER_097	$26-3.7 \leq X < 27+1.7$	•
UE_TX_POWER_096	$25-3.7 \leq X < 26+1.7$	•
UE_TX_POWER_095	$24-3.7 \leq X < 25+1.7$	•
UE_TX_POWER_094	$23-4.2 \leq X < 24+2.2$	$23-2.7 \leq X < 24+2.7$
UE_TX_POWER_093	$22-4.7 \leq X < 23+2.7$	$22-2.7 \leq X < 23+2.7$
UE_TX_POWER_092	$21-5.2 \leq X < 22+3.2$	$21-2.7 \leq X < 22+2.7$
UE_TX_POWER_091	$20-5.7 \leq X < 21+3.7$	$20-3.2 \leq X < 21+3.2$
UE_TX_POWER_090	$19-5.7 \leq X < 20+3.7$	$19-3.7 \leq X < 20+3.7$
UE_TX_POWER_089	$18-5.7 \leq X < 19+3.7$	$18-4.2 \leq X < 19+4.2$
UE_TX_POWER_088	•	$17-4.7 \leq X < 18+4.7$
UE_TX_POWER_087	•	$16-4.7 \leq X < 17+4.7$
UE_TX_POWER_086	•	$15-4.7 \leq X < 15+4.7$
•	•	•
•	•	•
•	•	•
UE_TX_POWER_022	$-49-5.7 \leq X < -48+3.7$	$-49-4.7 \leq X < -48+4.7$
UE_TX_POWER_021	$-50-5.7 \leq X < -49+3.7$	$-50-4.7 \leq X < -49+4.7$

NOTE 1: Although test requirements are given for all UE reported values, a good UE will likely report values between PUEMAX and PUEMAX - 10 dB. However, even a good UE may report also wider range of values due to errors in TPC command reception and allowed range specified for UE transmit power setting accuracy when Maximum Allowed UL TX Power has been signaled. On the other hand, a faulty UE may report any power value but then it does not fulfill the Table 8.7.12.1A.5 requirements for mean power or then it will not pass some other tests e.g. TC 5.2 of this specification.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.13 UE Transmission Power Headroom

8.7.13.1 UPH for 3.84Mcps TDD Option

Void

8.7.13.1A UPH for 1.28Mcps TDD Option

8.7.13.1A.1 Definition and applicability

The accuracy requirements for the UE transmission power headroom depends on the total power transmitted by the UE as defined in the functionality in section 9.2.6.3 of TS 25.321 [14], section 9.1.2.3.2 of TS 25.123 [2] and section 5.1.16 of TS 25.225 [22]. The requirements and this test apply to Release 7 and later releases for all types of UTRA for the 1.28Mcps TDD UE that supports E-DCH and HSDPA.

8.7.13.1A.2 Minimum Requirements

The UE transmission power headroom (UPH) is defined in section 5.1.16 of TS 25.225 [22] as the ratio of the maximum UE transmission power and the product of P_e-base power and serving cell path loss, and shall be calculated as following:

$$UPH = \frac{P_{\max,tx}}{P_{e-base} \cdot L_{Path_loss}}$$

Where:

$P_{\max,tx}$ = min {Maximum allowed UL TX Power, P_{\max} } is the UE maximum transmission power;

Maximum allowed UL TX Power is set by UTRAN and defined in [9];

P_{\max} is the UE nominal maximum output power according to the UE power class and specified in [1] table 6.1;

P_{e-base} is a closed-loop quantity defined in [9] and L_{Path_loss} is the serving cell path loss.

The reference point for the UE transmission power headroom shall be the antenna connector of the UE.

The accuracy requirements for UE transmission power headroom depends on the total power transmitted by the UE. Table 8.7.13.1A defines the accuracy of the measured quantity as defined in section 9.1.2.3.2 of TS 25.123 [2].

Table 8.7.13.1A.1: UPH reporting accuracy

Total UE output power value (dBm)	UPH reporting Accuracy [dB]*	
	PUEMAX 24dBm	PUEMAX 21dBm
Total output power \geq PUEMAX	+1/-3	± 2
PUEMAX-1 \leq Total output power < PUEMAX	+1,5/-3,5	$\pm 2,5$
PUEMAX-2 \leq Total output power < PUEMAX-1	+2/-4	± 3
PUEMAX-3 \leq Total output power < PUEMAX-2	+2,5/-4,5	$\pm 3,5$
PUEMAX-10 \leq Total output power < PUEMAX-3	+3/-5	± 4
*Note: UPH reporting accuracy is the difference between the UPH reported by the UE and the actual uplink power headroom		
**Note: PUEMAX, is the maximum output power level without tolerance defined for the power class of the UE in 3GPP TS 25.102		

8.7.13.1A.3 Test purpose

The purpose of this test case is to verify that the UE transmission power headroom measurement report accuracy is within the specified limits defined in section 9.1.2.3.2 of 25.123 [2] shown in table 8.7.13.1A.1.

8.7.13.1A.4 Method of test

8.7.13.1A.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect the SS (node B emulator) to the UE antenna connector as shown in figure A.1.
- 2) HSDPA and E-DCH configurations are set as in table 8.7.13.1A.2.

Table 8.7.13.1A.2: General test parameters for UE transmission power headroom

Parameter	Unit	Value	Comment
DL DCH configuration		DL Reference Measurement Channel 12.2 kbps	As specified in Annex C.3.1.2 of the present document
DL configuration		DL Fixed Reference Channel (FRC 1)	As specified in Annex C.4.2.1 of the present document
E-DCH configuration		5 ms TTI E-DCH Transport Block Size Table 0 according to TS 25.321 [13] annex BC.1	
DL Power Control		Off	
Active cell		Cell 1	
Reference E-TFCl index		0 as per Table 0 according to TS 25.321 [13] annex BC.1.	

3) The power levels and cell specific parameters are set as in table 8.7.13.1A.3.

Table 8.7.13.1A.3: Cell Specific parameters for UE transmission power headroom

Parameter	Unit	Cell 1	
Timeslot Number		0	DwPTS
UTRA RF Channel Number (NOTE 2)		Channel 1	
PCCPCH_Ec/Ior	dB	- 3	
DwPCH_Ec/Ior	dB		0
OCNS_Ec/Ior	dB	- 3	
\hat{I}_{or}/I_{oc}	dB	3	
I_{oc}	dBm/ 1.28 MHz	-70	
PCCPCH RSCP, Note 1	dB m	-70	
Propagation Condition		AWGN	
NOTE 1: PCCPCH RSCP level has been calculated from other parameters for information purposes. They are not settable parameters themselves.			
NOTE2: In the case of multi-frequency network, the UTRA RF Channel Number can be set for the primary frequency in this test.			

4) The UE is switched on.

5) An E-DCH call is set up according to TS 34.108 [3] 7.3.9 with the following exceptions in the RADIO BEARER SETUP message. These exceptions are derived from Table 8.7.13.2, and in addition allow the beta values to be set and each UL physical channel to be at constant power during the measurement.

Table 8.7.13.1A.4: Contents of RADIO BEARER SETUP message: AM or UM (E-DCH and HSDPA)

Information Element/Group name	Value/Remark
E-PUCCH Info(TDD only)	
>E-TFCS information	
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.2
>>>Reference Beta	-14
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.3
>>>Reference Beta	-13
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.4
>>>Reference Beta	-12
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.5
>>>Reference Beta	-10
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.6
>>>Reference Beta	-9
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.7
>>>Reference Beta	-8
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.8
>>>Reference Beta	-7
>>Reference Beta Information QPSK list	
>>>Reference Code Rate	0.9
>>>Reference Beta	-6
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.2
>>>Reference Beta	-9
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.3
>>>Reference Beta	-8
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.4
>>>Reference Beta	-6
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.5
>>>Reference Beta	-5
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.6
>>>Reference Beta	-4
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.7
>>>Reference Beta	-2
>>Reference Beta Information 16QAM list	
>>>Reference Code Rate	0.8
>>>Reference Beta	-1
>>Reference Beta Information 16QAM list	

list	
>>>Reference Code Rate	0.9
>>>Reference Beta	0
>CHOICE TDD mode	
>>1.28 Mcps TDD	
>>>PRXdes_base	-85
>>>Beacon PL Est.	
>>>TPC step size	1
>>>E-PUCH TS configuration list	
>>>>TS number	1
>>>E-PUCH TS configuration list	
>>>>TS number	2
>>>Minimum allowed code rate	3(0.1)
>>>Maximum allowed code rate	50(0.8)

8.7.13.1A.4.2 Test procedure

- 1) The Scheduling Information configuration for the E-DCH indicates to the UE that it shall periodically report Scheduling Information, which contains UPH measurement every E-DCH TTI. During the test the system simulator shall not send any scheduling grant to the UE, and therefore the UE will not send any payload data on the E-DCH.
- 2) The SS shall set the CPRI value in E-AGCH to be 3 dB for a power class 3 UE, or 0 dB for a power class 4 UE by using uplink power control. CRR1 and TRRI value in E-AGCH respectively is “00100” and “11000”.
- 3) The SS measures both the power transmitted by the UE on E-PUCH and the total output power of the UE in time slot which assigned E-PUCH transmitted by SS. The SS shall analyse the E-TFCI transmitted on the E-UCCH for each E-DCH TTI and estimates the β_e . The SS averages both the E-PUCH output power, β_e and total output power of the UE over 100 times. Then, the SS calculates the difference between average E-PUCH power measured and β_e .
- 4) The SS estimates the UE transmission power headroom as the difference between the maximum allowed uplink transmits power (P_{max}) and the difference calculated in step 3.
- 5) The SS notes the UE transmission power headroom value reported in the Scheduling Information.
- 6) The SS calculates the difference between the UE transmission power headroom value estimated in step 4 and the reported UE transmission power headroom noted in step 5. The SS notes this as the UE transmission power headroom accuracy, and compares it to the applicable limit according to the total output power measured in step 3.
- 7) If the UE transmission power headroom accuracy exceeds the value in Table 8.7.13.1A.5 count a bad result, otherwise a good result with respect to the actually set TX power.
- 8) Repeat steps 3 to 7 in order to collect more good or bad results for the currently set power level. Continue the repetition, until statistical significance according to Annex F.6.2.8 is achieved.
- 9) The SS sends 5 up TPC commands at the nesting E-AGCH to bring the TX power of the UE up by a nominal 1 dB step, and then alternate UP/DOWN to maintain constant TX power.
- 10) Repeat steps 3 through 9 and note the UE transmission power headroom accuracy for each UE total power value until the UE stops reporting UPH or does not give lower UPH values for 8 consecutive repetitions of steps 3 through 9.

8.7.13.1A.5 Test requirements

The UE transmission power headroom measurement report accuracy recorded in steps 6, 9 and 10 above shall meet the requirements in table 8.7.13.1A.5. The rate of correct measurements observed during repeated tests shall be at least 90%. To pass the test, the UE transmission power headroom accuracy for each power level in the reporting range must pass. Once a power level is passed, no more results need be collected on this power level.

Table 8.7.13.1A.5: Test requirement for UPH reporting accuracy

Total UE output power value (dBm)	UPH reporting Accuracy [dB]*	
	PUEMAX 24dBm	PUEMAX 21dBm
Total output power \geq PUEMAX	+1.7/-3.7	\pm 2.7
PUEMAX-1 \leq Total output power < PUEMAX	+2.2/-4.2	\pm 3.2
PUEMAX-2 \leq Total output power < PUEMAX-1	+2.7/-4.7	\pm 3.7
PUEMAX-3 \leq Total output power < PUEMAX-2	+3.2/-5.2	\pm 4.2
PUEMAX-10 \leq Total output power < PUEMAX-3	+3.7/-5.7	\pm 4.7
*Note: UPH reporting accuracy is the difference between the UPH reported by the UE and the actual uplink power headroom **Note: PUEMAX, is the maximum output power level without tolerance defined for the power class of the UE in 3GPP TS 25.102		

NOTE1: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.13.1B UPH for 7.68Mcps TDD Option

Void

8.7.14 E-UTRAN FDD RSRP

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.7.14.1 Definition and applicability

The absolute accuracy of RSRP is defined as the RSRP measured from a cell that has different carrier frequency from the serving cell.

The E-UTRAN FDD RSRP absolute accuracy measurement is used for handover between UTRAN TDD and E-UTRAN FDD for Rel.9 and later.

The requirements and this test apply to the combined UTRAN TDD and E-UTRAN FDD UE.

8.7.14.2 Minimum Requirements

In Cell DCH state, whether or not UE requires idle intervals to perform E-UTRAN measurements, the requirements for accuracy of E-UTRA RSRP measurements in CELL_DCH state shall be the same as the inter-frequency RSRP Accuracy Requirements in 3GPP TS 36.133, as follows:

Cell specific reference signals are transmitted either from one, two or four antenna ports.

Conditions defined in 36.101 Section 7.3 for reference sensitivity are fulfilled.

RSRP[dBm] according to 36.133 Annex B.3.3 for a corresponding Band

Table 8.7.14.2-1: RSRP Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions ¹				
		Normal condition	Extreme condition	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23, 24, 33, 34, 35, 36, 37, 38, 39, 40	Bands 2, 5, 7, 41	Band 25	Bands 3, 8, 12, 13, 14, 17, 20, 22	Bands 9, 4
RSRP for $\tilde{E}_s/\text{lot} \geq -6$ dB	dBm	± 6	± 9	-121 dBm/15kHz ... -70dBm/ BW _{Channel}	-119 dBm/15kHz ... -70dBm/ BW _{Channel}	-117.5 dBm/15kHz ... -70dBm/ BW _{Channel}	-118 dBm/15kHz ... -70dBm/ BW _{Channel}	-120 dBm/15kHz ... -70dBm/ BW _{Channel}
RSRP for $\tilde{E}_s/\text{lot} \geq -6$ dB	dBm	± 8	± 11	-70dBm/ BW _{Channel} ... - 50dBm/ BW _{Channel}	-70dBm/ BW _{Channel} ... - 50dBm/ BW _{Channel}	-70dBm/ BW _{Channel} ... - 50dBm/ BW _{Channel}	-70dBm/ BW _{Channel} ... - 50dBm/ BW _{Channel}	-70dBm/ BW _{Channel} ... - 50dBm/ BW _{Channel}

Note 1: f_0 is assumed to have constant EPRE across the bandwidth.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.5a and A.9.2.5a.1.

8.7.14.3 Test purpose

The purpose of this test is to verify that the E-UTRA FDD RSRP measurement absolute accuracy is within the specified limits. This test will verify the requirements in 8.7.14.2 and applies to UE supporting this capability.

8.7.14.4 Method of test

8.7.14.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table J.2 in Annex J.

In the test in Cell_DCH state, "E-UTRAN FDD RSRP Measurement" is applied to measure on E-UTRAN FDD.

Tables 8.7.14.4.1-1 and 8.7.14.4.1-2 define the limits of signal strengths and code powers on the UTRA TDD cell. In the measurement control information periodic reporting of E-UTRAN FDD RSRP is indicated to the UE. The E-UTRAN FDD test parameters are given in Table 8.7.14.4.1-3.

Table 8.7.14.4.1-1: General parameters of E-UTRA FDD RSRP measurement tests

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Active cell		Cell 1	1.28Mcps TDD cell
Neighbour cell		Cell 2	E-UTRA FDD cell
CP length of cell 2		normal	
Idle intervals period	ms	80	As specified in TS 25.331
Filter coefficient		0	L3 filtering is not used
Inter-RAT(E-UTRA FDD) measurement quantity		E-UTRA FDD RSRP	

Table 8.7.14.4.1-2: E-UTRA FDD RSRP measurement tests parameters (cell 1)

Parameter	Unit	Test 1, Test 2	
DL timeslot number		0	DwPTS
UTRA RF Channel number (NOTE)		Channel 1	
PCCPCH_Ec/lor	dB	-3	
DwPCH_Ec/lor	dB		0
OCNS_Ec/lor	dB	-3	
$\hat{\text{lor}}/\text{loc}$	dB	3	
loc	dBm / 1.28MHz	-75	
Propagation condition		AWGN	
NOTE:	In the case of multi-frequency, the UTRA RF Channel Number can be set for the primary frequency in this test.		

Table 8.7.14.4.1-3: E-UTRA FDD RSRP measurement tests parameters (cell 2)

Parameter		Unit	Test 1	Test 2
E-UTRA RF Channel Number			1	1
BW_{channel}		MHz	10	10
Measurement bandwidth		n_{PRB}	22—27	22—27
PDCCH/PCFICH/PHICH Reference measurement channel defined in A.2.1 in TS 36.521-3 [33]			R.6 FDD	R.6 FDD
OCNG Patterns defined in D.1.2 (OP.2 FDD) in TS 36.521-3 [33]			OP.2 FDD	OP.2 FDD
PBCH_RA		dB	0	0
PBCH_RB				
PSS_RA				
SSS_RA				
PCFICH_RB				
PHICH_RA				
PHICH_RB				
PDCCH_RA				
PDCCH_RB				
PDSCH_RA				
PDSCH_RB				
OCNG_RA ^{Note1}				
OCNG_RB ^{Note1}				
N_{oc} ^{Note2}	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24			
	Bands 2, 5 and 7	-115		
	Band 25	-113.5		
	Bands 3, 8, 12, 13, 14, 17, 20 and 22	-114		
	Band 9	-116		
\hat{E}_s / I_{ot}		dB	10	-4
RSRP ^{Note3}	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24	dBm/15 kHz	-78.65	-121
	Bands 2, 5 and 7			-119
	Band 25			-117.5
	Bands 3, 8, 12, 13, 14, 17, 20 and 22			-118
	Band 9			-120
I_o ^{Note3}	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24	dBm/9 MHz	-50.45	-87.76
	Bands 2, 5 and 7			-85.76
	Band 25			-84.26
	Bands 3, 8, 12, 13, 14, 17, 20 and 22			-84.76
	Band 9			-86.76
\hat{E}_s / N_{oc}		dB	10	-4
Propagation condition		-	AWGN	AWGN
<p>Note 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for N_{oc} to be fulfilled.</p> <p>Note 3: RSRP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 4: RSRP minimum requirements are specified assuming independent interference and</p>				

noise at each receiver antenna port.

8.7.14.4.2 Test Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.14.5-2.
- 2) SS shall transmit the MEASUREMENT CONTROL message for inter RAT measurement. In the measurement control information periodic reporting of the EUTRAN FDD RSRP is requested to the UE.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check RSRP value of Cell 2 in the MEASUREMENT REPORT messages. Levels of Cell 2 reported by the UE are compared to the actual level of Cell 2 for each MEASUREMENT REPORT message.
- 5) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex Tables G.2.3-1 in TS 36.521-3 [33] is achieved.
- 6) The RF parameters are set up according to tables 8.7.14.5-3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 5s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) and 5) above are repeated.
- 7) The SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

NOTE: Numbers in brackets after an item e.g “Message Type (10.2.17)” in the IE description are references to clause numbers in TS 25.331 [9] describing that item in more detail.

MEASUREMENT CONTROL message for EUTRAN FDD measurement (Step 1):

Information Element	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-RAT measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter coefficient	0
-CHOICE mode	EUTRAN FDD
- Measurement quantity	RSRP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities	FALSE
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	
- Maximum number of reported cells	Report all active set cells + cells within monitored set on used frequency
- Measurement validity	Virtual/active set cells + 1
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria Infinity 500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

8.7.14.5 Test requirements

Table 8.7.14.5-2 and table 8.7.14.5-3 defines the primary level settings including test tolerances for all tests.

For the test to pass, the ratio of successful reported values according to table 8.7.14.5-4 in each test shall be more than 90% , with a confidence level of 95% .

Table 8.7.14.5-1: Void

Table 8.7.14.5-2: UTRAN TDD cell specific test parameters for E-UTRAN FDD RSRP absolute accuracy tests

Parameter	Unit	Test 1, Test 2	
DL timeslot number		0	DwPTS
UTRA RF Channel number (NOTE)		Channel 1	
PCCPCH_Ec/lor	dB	-3	
DwPCH_Ec/lor	dB		0
OCNS_Ec/lor	dB	-3	
\hat{I} or/loc	dB	3	
loc	dBm / 1.28MHz	-75	
Propagation condition		AWGN	
NOTE:	In the case of multi-frequency, the UTRA RF Channel Number can be set for the primary frequency in this test.		

Table 8.7.14.5-3: E-UTRAN FDD cell specific test parameters for E-UTRAN FDD RSRP absolute accuracy tests

Parameter		Unit	Test 1	Test 2
E-UTRA RF Channel Number			1	1
BW_{channel}		MHz	10	10
Measurement bandwidth		n_{PRB}	22—27	22—27
PDCCH/PCFICH/PHICH Reference measurement channel defined in A.2.1 in TS 36.521-3 [33]			R.6 FDD	R.6 FDD
OCNG Patterns defined in D.1.2 (OP.2 FDD) in TS 36.521-3 [33]			OP.2 FDD	OP.2 FDD
PBCH_RA		dB	0	0
PBCH_RB				
PSS_RA				
SSS_RA				
PCFICH_RB				
PHICH_RA				
PHICH_RB				
PDCCH_RA				
PDCCH_RB				
PDSCH_RA				
PDSCH_RB				
OCNG_RA ^{Note 1}				
OCNG_RB ^{Note 1}				
N_{oc} ^{Note 2}	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24			
	Bands 2, 5 and 7	-115.00		
	Band 25	-113.50		
	Bands 3, 8, 12, 13, 14, 17, 20 and 22	-114.00		
	Band 9	-116.00		
\hat{E}_s / I_{ot}		dB	10.00	-3.20
RSRP ^{Note 3}	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24	dBm/15 kHz	-78.95	-120.20
	Bands 2, 5 and 7			-118.20
	Band 25			-116.70
	Bands 3, 8, 12, 13, 14, 17, 20 and 22			-117.20
	Band 9			-119.20
I_o ^{Note 3}	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24	dBm/9 MHz	-50.75	-87.52
	Bands 2, 5 and 7			-85.52
	Band 25			-84.02
	Bands 3, 8, 12, 13, 14, 17, 20 and 22			-84.52
	Band 9			-86.52
\hat{E}_s / N_{oc}		dB	10.00	-3.20
Propagation condition		-	AWGN	AWGN
<p>Note 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for N_{oc} to be fulfilled.</p> <p>Note 3: RSRP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p>				

Note 4: RSRP minimum requirements are specified assuming independent interference and noise at each receiver antenna port.

Table 8.7.14.5-4: E-UTRAN FDD RSRP absolute accuracy requirements for the reported values

	Test 1	Test 2				
	All bands	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23, 24	Bands 2, 5, 7	Band 25	Bands 3, 8, 12, 13, 14, 17, 20, 22	Band 9
Normal Conditions						
Lowest reported value (Cell 2)	RSRP_52	RSRP_13	RSRP_15	RSRP_17	RSRP_16	RSRP_14
Highest reported value (Cell 2)	RSRP_71	RSRP_28	RSRP_30	RSRP_31	RSRP_31	RSRP_29
Extreme Conditions						
Lowest reported value (Cell 2)	RSRP_49	RSRP_10	RSRP_12	RSRP_14	RSRP_13	RSRP_11
Highest reported value (Cell 2)	RSRP_74	RSRP_31	RSRP_33	RSRP_34	RSRP_34	RSRP_32

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.15 E-UTRAN TDD RSRP

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.7.15.1 Definition and applicability

The absolute accuracy of RSRP is defined as the RSRP measured from a cell that has different carrier frequency from the serving cell.

The E-UTRAN TDD RSRP absolute accuracy measurement is used for handover between UTRAN TDD and E-UTRAN TDD.

The requirements and this test apply to release 9 and later releases UTRA 1.28Mcps TDD UEs that support release 8 and later releases E-UTRA TDD.

8.7.15.2 Minimum Requirements

In Cell DCH state, whether or not UE requires idle intervals to perform E-UTRAN measurements, the requirements for accuracy of E-UTRA RSRP measurements in CELL_DCH state shall be the same as the inter-frequency RSRP Accuracy Requirements in 3GPP TS 36.133 [26], as follows:

Cell specific reference signals are transmitted either from one, two or four antenna ports.

Conditions defined in TS 36.101 [27] Section 7.3 for reference sensitivity are fulfilled.

RSRP[dBm] according to TS 36.133 [26] Annex B.3.3 for a corresponding Band

Table 8.7.15.2-1: RSRP Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions ¹				
		Normal condition	Extreme condition	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23, 24, 33, 34, 35, 36, 37, 38, 39, 40	Bands 2, 5, 7, 41	Band 25	Bands 3, 8, 12, 13, 14, 17, 20, 22	Bands 9, 4
RSRP for $\hat{E}_s/\text{lot} \geq -6$ dB	dBm	± 6	± 9	-121 dBm/15kHz ... -70dBm/ BW _{Channel}	-119 dBm/15kHz ... -70dBm/ BW _{Channel}	-117.5 dBm/15kHz ... -70dBm/ BW _{Channel}	-118 dBm/15kHz ... -70dBm/ BW _{Channel}	-120 dBm/15kHz ... -70dBm/ BW _{Channel}
RSRP for $\hat{E}_s/\text{lot} \geq -6$ dB	dBm	± 8	± 11	-70dBm/ BW _{Channel} ... - 50dBm/ BW _{Channel}	-70dBm/ BW _{Channel} ... - 50dBm/ BW _{Channel}	-70dBm/ BW _{Channel} ... - 50dBm/ BW _{Channel}	-70dBm/ BW _{Channel} ... - 50dBm/ BW _{Channel}	-70dBm/ BW _{Channel} ... - 50dBm/ BW _{Channel}

Note 1: I_0 is assumed to have constant EPRE across the bandwidth.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.5a and A.9.2.5a.2.

8.7.15.3 Test purpose

The purpose of this test is to verify that the E-UTRA TDD RSRP measurement absolute accuracy is within the specified limits. This test will verify the requirements in 8.7.15.2 and applies to UE supporting this capability.

8.7.15.4 Method of test

8.7.15.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table J.2 in Annex J.

In the test in Cell_DCH state, "E-UTRAN TDD RSRP Measurement" is applied to measure on E-UTRAN TDD.

Tables 8.7.15.4.1-1 and 8.7.15.4.1-2 define the limits of signal strengths and code powers on the UTRA TDD cell. In the measurement control information periodic reporting of E-UTRAN TDD RSRP is indicated to the UE. The E-UTRAN TDD test parameters are given in Table 8.7.15.4.1-3.

Table 8.7.15.4.1-1: General parameters of E-UTRA TDD RSRP measurement tests

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in section C.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Active cell		Cell 1	1.28Mcps UTRA TDD cell
Neighbour cell		Cell 2	E-UTRA TDD cell
CP length of cell 2		Normal	
Uplink-downlink configuration of cell 2		1	As specified in table 4.2.2 in TS 36.211 [30]
Special subframe configuration of cell 2		6	As specified in table 4.2.1 in TS 36.211 [30]
Idle intervals period	ms	80	As specified in TS 25.331 [9]
Filter coefficient		0	L3 filtering is not used
Inter-RAT(E-UTRA TDD) measurement quantity		E-UTRA TDD RSRP	

Table 8.7.15.4.1-2: E-UTRA TDD RSRP measurement tests parameters (cell 1)

Parameter	Unit	Test 1, Test 2	
		DL timeslot number	0
UTRA RF Channel number ^{NOTE2}		Channel 1	
PCCPCH_Ec/Ior	dB	-3	
DwPCH_Ec/Ior	dB		0
OCNS_Ec/Ior	dB	-3	
Ioc	dBm/1.28MHz	-75	
Ior/Ioc	dB	3	
PCCPCH RSCP ^{NOTE1}	dBm	-75	
Io ^{NOTE1}	dBm/1.28MHz	-70.24	
Propagation condition		AWGN	
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.			
NOTE 2: In the case of multi-frequency network of 1.28 Mcps TDD, the UTRA RF Channel Number can be set for the primary frequency in this test.			

Table 8.7.15.4.1-3: E-UTRA TDD RSRP measurement tests parameters (cell 2)

Parameter		Unit	Test 1	Test 2
E-UTRA RF Channel Number			2	2
BWchannel		MHz	10	10
Measurement bandwidth		n_{PRB}	22—27	22—27
PDCCH/PCFICH/PHICH Reference measurement channel defined in A.2.2 in TS 36.521-3 [33]			R.6 TDD	R.6 TDD
OCNG Patterns defined in D2.2 (OP.2 TDD) in TS 36.521-3 [33]			OP.2 TDD	OP.2 TDD
PBCH_RA		dB	0	0
PBCH_RB				
PSS_RA				
SSS_RA				
PCFICH_RB				
PHICH_RA				
PHICH_RB				
PDCCH_RA				
PDCCH_RB				
PDSCH_RA				
PDSCH_RB				
OCNG_RA ^{Note1}				
OCNG_RB ^{Note1}				
N_{oc} ^{Note2}	Bands 33 ~ 40			
	Bands 42 and 43	-116		
	Band 41	-115		
\hat{E}_s / I_{ot}		dB	10	-4
RSRP ^{Note3}	Bands 33 ~ 40	dBm/15 kHz	-78.65	-121
	Bands 42 and 43			-120
	Band 41			-119
I _o ^{Note3}	Bands 33 ~ 40	dBm/9 MHz	-50.45	-87.76
	Bands 42 and 43			-86.76
	Band 41			-85.76
\hat{E}_s / N_{oc}		dB	10	-4
Propagation condition		-	AWGN	AWGN
<p>Note 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for N_{oc} to be fulfilled.</p> <p>Note 3: RSRP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 4: RSRP minimum requirements are specified assuming independent interference and noise at each receiver antenna port.</p>				

8.7.15.4.2 Test Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2. The RF parameters for Test 1 are set up according to tables 8.7.15.5-2 and 8.7.15.5-3.
- 2) SS shall transmit the MEASUREMENT CONTROL message for inter RAT measurement. In the measurement control information periodic reporting of the EUTRAN TDD RSRP is requested to the UE.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check E-UTRAN TDD RSRP value of Cell 2 in MEASUREMENT REPORT messages. E-UTRAN TDD RSRP power of Cell 2 reported by UE is compared to actual E-UTRAN TDD RSRP value of Cell 2 for each MEASUREMENT REPORT message.
- 5) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex Tables G.2.3-1 in TS 36.521-3 [33] is achieved.

- 6) The RF parameters are set up according to tables 8.7.15.5-2 and 8.7.15.5-3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 5s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) and 5) above are repeated.
- 7) The SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of TS 34.108 [3], and clause 4.4 and 4.7B.1 of TS 36.508 [28] with the following exceptions:

MEASUREMENT CONTROL message for EUTRAN TDD measurement (Step 2):

Derivation Path: TS 36.508 [28], clause 4.7B.1 Table 4.7B.1-3: MEASUREMENT CONTROL			
Information Element	Value/remark	Comment	Condition
Message Type			
RRC transaction identifier	0		
Measurement Identity	2		
Measurement Reporting Mode			
- Measurement Report Transfer Mode	Acknowledged mode RLC		
- CHOICE Inter-RAT measurement objects	E-UTRA frequency list		
- New frequencies			
- E-UTRA carrier frequency	Downlink EARFCN of E-UTRA Cell		
- Measurement bandwidth	mbw6		
- Periodical Reporting/Event Trigger Reporting Mode	Periodical reporting		
CHOICE Measurement type	Inter-RAT measurement		
- Inter-RAT measurement quantity			
- Measurement quantity for UTRAN quality estimate			
- Filter coefficient	0		
- CHOICE mode	TDD		TDD_UTRA
- Measurement quantity	Primary CCPCH RSCP		
- CHOICE system	E-UTRA		
- Measurement quantity	RSRP		
- Filter coefficient	0		
- CHOICE report criteria	Periodical reporting criteria		
- Periodical reporting criteria			
- Amount of reporting	Infinity		
- Reporting interval	500 ms		
- Reporting cell status			
- CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT		
- Maximum number of reported cells	1		
- Idle Interval Information			
- k	3 (80 ms)	The actual idle interval period equal to 2^k radio frames.	
- offset	Not present	Default value is 0.	

8.7.15.5 Test requirements

Table 8.7.15.5-2 and table 8.7.15.5-3 defines the primary level settings including test tolerances for all tests.

For the test to pass, the ratio of successful reported values according to table 8.7.15.5-4 in each test shall be more than 90%, with a confidence level of 95%.

Table 8.7.15.5-1: Void

Table 8.7.15.5-2: UTRAN TDD cell specific test parameters for E-UTRAN TDD RSRP absolute accuracy tests

Parameter	Unit	Test 1, Test 2	
		Test 1	Test 2
DL timeslot number		0	DwPTS
UTRA RF Channel number ^{NOTE2}		Channel 1	
PCCPCH_Ec/Ior	dB	-3	
DwPCH_Ec/Ior	dB		0
OCNS_Ec/Ior	dB	-3	
Ioc	dBm/1.28MHz	-75	
Ior/Ioc	dB	3	
PCCPCH RSCP ^{NOTE1}	dBm	-75	
Io ^{NOTE1}	dBm/1.28MHz	-70.24	
Propagation condition		AWGN	
Note 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves. Note 2: In the case of multi-frequency network of 1.28 Mcps TDD, the UTRA RF Channel Number can be set for the primary frequency in this test.			

Table 8.7.15.5-3: E-UTRAN TDD cell specific test parameters for E-UTRAN TDD RSRP absolute accuracy tests

Parameter		Unit	Test 1	Test 2			
E-UTRAN Channel Number			2	2			
BWchannel		MHz	10	10			
Measurement bandwidth		n_{PRB}	22—27	22—27			
PDCCH/PCFICH/PHICH Reference measurement channel defined in A.2.2 in TS 36.521-3 [33]			R.6 TDD	R.6 TDD			
OCNG Patterns defined in D.2.2 (OP.2 TDD) in TS 36.521-3 [33]			OP.2 TDD	OP.2 TDD			
PBCH_RA		dB	0	0			
PBCH_RB							
PSS_RA							
SSS_RA							
PCFICH_RB							
PHICH_RA							
PHICH_RB							
PDCCH_RA							
PDCCH_RB							
PDSCH_RA							
PDSCH_RB							
OCNG_RA ^{NOTE1}							
OCNG_RB ^{NOTE1}							
N_{oc} ^{Note2}	Bands 33 ~ 40				dBm/15 kHz	-88.95	-117.00
	Bands 42 and 43						-116.00
	Band 41	-115.00					
\hat{E}_s / I_{ot}		dB	10.00	-3.20			
RSRP ^{Note3}	Bands 33 ~ 40	dBm/15 kHz	-78.95	-120.20			
	Bands 42 and 43			-119.20			
	Band 41			-118.20			
I_o ^{Note3}	Bands 33 ~ 40	dBm/9 MHz	-50.75	-87.52			
	Bands 42 and 43			-86.52			
	Band 41			-85.52			
\hat{E}_s / N_{oc}		dB	10.00	-3.20			
Propagation condition		-	AWGN	AWGN			
<p>Note 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for N_{oc} to be fulfilled.</p> <p>Note 3: RSRP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 4: RSRP minimum requirements are specified assuming independent interference and noise at each receiver antenna port.</p>							

Table 8.7.15.5-4: E-UTRAN TDD RSRP absolute accuracy requirements for the reported values

	Test 1	Test 2		
	All bands	Bands 33 ~ 40	Bands 42 and 43	Band 41
Normal Conditions				
Lowest reported value (Cell 2)	RSRP_52	RSRP_13	RSRP_14	RSRP_15
Highest reported value (Cell 2)	RSRP_71	RSRP_28	RSRP_29	RSRP_30
Extreme Conditions				
Lowest reported value (Cell 2)	RSRP_49	RSRP_10	RSRP_11	RSRP_12
Highest reported value (Cell 2)	RSRP_74	RSRP_31	RSRP_32	RSRP_33

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.16 E-UTRAN FDD RSRQ

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.7.16.1 Definition and applicability

The absolute accuracy of RSRQ is defined as the RSRQ measured from a cell that has different carrier frequency from the serving cell.

The E-UTRAN FDD RSRQ absolute accuracy measurement is used for handover between UTRAN TDD and E-UTRAN FDD for Rel.9 and later.

The requirements and this test apply to the combined UTRAN TDD and E-UTRAN FDD UE.

8.7.16.2 Minimum Requirements

In Cell DCH state, whether or not UE requires idle intervals to perform E-UTRAN measurements, the requirements for accuracy of E-UTRA RSRQ measurements in CELL_DCH state shall be the same as the inter-frequency RSRQ Accuracy Requirements in 3GPP TS 36.133, as follows:

Cell specific reference signals are transmitted either from one, two or four antenna ports.

Conditions defined in 36.101 Section 7.3 for reference sensitivity are fulfilled.

RSRP[dBm] according to 36.133 Annex B.3.3 for a corresponding Band

Table 8.7.16.2-1: RSRQ Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions ¹				
		Normal condition	Extreme condition	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23, 24, 33, 34, 35, 36, 37, 38, 39, 40	Bands 2, 5, 7, 41	Band 25	Bands 3, 8, 12, 13, 14, 17, 20, 22	Bands 9, 42, 43
				Io	Io	Io	Io	Io
RSRQ when RSRP \hat{E}_s /lot > -3 dB	dBm	± 2.5	± 4	-121dBm/ 15kHz ... -50dBm/ BW _{Channel}	-119dBm/ 15kHz ... -50dBm/ BW _{Channel}	-117.5dBm/ 15kHz ... -50dBm/ BW _{Channel}	-118dBm/ 15kHz ... -50dBm/ BW _{Channel}	-120dBm/ 15kHz ... -50dBm/ BW _{Channel}
RSRQ when RSRP \hat{E}_s /lot ≥ -6 dB	dBm	± 3.5	± 4	-121dBm/ 15kHz ... -50dBm/ BW _{Channel}	-119dBm/ 15kHz ... -50dBm/ BW _{Channel}	-117.5dBm/ 15kHz ... -50dBm/ BW _{Channel}	-118dBm/ 15kHz ... -50dBm/ BW _{Channel}	-120dBm/ 15kHz ... -50dBm/ BW _{Channel}

Note 1: Io is assumed to have constant EPRE across the bandwidth.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.5b and A.9.2.5b.1.

8.7.16.3 Test purpose

The purpose of this test is to verify that the E-UTRA FDD RSRQ measurement absolute accuracy is within the specified limits. This test will verify the requirements in 8.7.16.2 and applies to UE supporting this capability.

8.7.16.4 Method of test

8.7.16.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table J.2 in Annex J.

In the test in Cell_DCH state, "E-UTRAN FDD RSRQ Measurement" is applied to measure on E-UTRAN FDD.

Tables 8.7.16.4.1-1 and 8.7.16.4.1-2 define the limits of signal strengths and code powers on the UTRA TDD cell. In the measurement control information periodic reporting of E-UTRAN FDD RSRQ is indicated to the UE. The E-UTRAN FDD test parameters are given in Table 8.7.16.4.1-3.

Table 8.7.16.4.1-1: General parameters of E-UTRA FDD RSRQ measurement tests

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Active cell		Cell 1	1.28Mcps TDD cell
Neighbour cell		Cell 2	E-UTRA FDD cell
CP length of cell 2		normal	
Idle intervals period	ms	80	As specified in TS 25.331
Filter coefficient		0	L3 filtering is not used
Inter-RAT(E-UTRA FDD) measurement quantity		E-UTRA FDD RSRQ	

Table 8.7.16.4.1-2: E-UTRA FDD RSRQ measurement tests parameters (cell 1)

Parameter	Unit	Cell 1	
DL timeslot number		0	DwPTS
UTRA RF Channel number (NOTE)		Channel 1	
PCCPCH_Ec/lor	dB	-3	
DwPCH_Ec/lor	dB		0
OCNS_Ec/lor	dB	-3	
lor/loc	dB	3	
loc	dBm / 1.28MHz	-75	
Propagation condition		AWGN	
Note:	In the case of multi-frequency, the UTRA RF Channel Number can be set for the primary frequency in this test.		

Table 8.7.16.4.1-3: E-UTRA FDD RSRQ measurement tests parameters (cell 2)

Parameter		Unit	Test 1	Test 2	Test 3
E-UTRA RF Channel Number			1	1	1
Bwchannel		MHz	10	10	10
Measurement bandwidth		n_{PRB}	22—27	22—27	22—27
PDCCH/PCFICH/PHICH Reference measurement channel defined in A.2.1 in TS 36.521-3 [33]			R.6 FDD	R.6 FDD	R.6 FDD
OCNG Patterns defined in D.1.1 (OP.1 FDD) and D.1.2 (OP.2 FDD) in TS 36.521-3 [33]			OP.2 FDD	OP.2 FDD	OP.2 FDD
PBCH_RA					
PBCH_RB					
PSS_RA					
SSS_RA					
PCFICH_RB					
PHICH_RA					
PHICH_RB		dB	0	0	0
PDCCH_RA					
PDCCH_RB					
PDSCH_RA					
PDSCH_RB					
OCNG_RA ^{NOTE1}					
OCNG_RB ^{NOTE1}					
N_{oc} Note2	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24	dBm/15 kHz	-80	-104.70	-119.50
	Bands 2, 5 and 7				-117.50
	Band 25				-116.00
	Bands 3, 8, 12, 13, 14, 17, 20 and 22				-116.50
	Band 9				-118.50
\hat{E}_s / I_{ot}		dB	-1.75	-4.0	-4.0
RSRP ^{Note3}	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24	dBm/15 kHz	-81.75	-108.70	-123.50
	Bands 2, 5 and 7				-121.50
	Band 25				-120.00
	Bands 3, 8, 12, 13, 14, 17, 20 and 22				-120.50
	Band 9				-122.50
RSRQ ^{Note3}	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24	dB	-14.76	-16.25	-16.25
	Bands 2, 5 and 7				
	Band 25				
	Bands 3, 8, 12, 13, 14, 17, 20 and 22				
	Band 9				
I_o Note3	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24	dBm/9 MHz	-50	-75.46	-90.26
	Bands 2, 5 and 7				-88.26
	Band 25				-86.76
	Bands 3, 8, 12, 13, 14, 17, 20 and 22				-87.26
	Band 9				-89.26

\hat{E}_s / N_{oc}	dB	-1.75	-4.0	-4.0
Propagation condition	-	AWGN	AWGN	AWGN
<p>Note 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for N_{oc} to be fulfilled.</p> <p>Note 3: RSRQ, RSRP and I_0 levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 4: RSRP and RSRQ minimum requirements are specified assuming independent interference and noise at each receiver antenna port.</p>				

8.7.16.4.2 Test Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.16.5-2 and 8.7.16.5-3.
- 2) SS shall transmit the MEASUREMENT CONTROL message for inter RAT measurement. In the measurement control information periodic reporting of the EUTRAN FDD RSRQ is requested to the UE.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check RSRQ value of Cell 2 in the MEASUREMENT REPORT messages. The RSRQ values of Cell 2 reported by the UE are compared to the actual RSRQ value of Cell 2 for each MEASUREMENT REPORT message.
- 5) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex Tables G.2.3-1 in TS 36.521-3 [33] is achieved.
- 6) The RF parameters are set up according to tables 8.7.16.5-2 and 8.7.16.5-3 for Test 2 and 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 5s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) and 5) above are repeated.
- 7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Note: Numbers in brackets after an item e.g. “Message Type (10.2.17)” in the IE description are references to clause numbers in TS 25.331 [9] describing that item in more detail.

MEASUREMENT CONTROL message for EUTRAN FDD measurement (Step 1):

Information Element	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-RAT measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter coefficient	0
-CHOICE mode	EUTRAN FDD
- Measurement quantity	RSRQ
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities	FALSE
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	
- Maximum number of reported cells	Report all active set cells + cells within monitored set on used frequency
- Measurement validity	Virtual/active set cells + 1
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria Infinity 500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

8.7.16.5 Test requirements

Table 8.7.16.5-2 and table 8.7.16.5-3 defines the primary level settings including test tolerances for all tests.

For the test to pass, the ratio of successful reported values according to table 8.7.16.5-4 in each test shall be more than 90% with a confidence level of 95%.

Table 8.7.16.5-1: Void

Table 8.7.16.5-2: UTRAN TDD cell specific test parameters for E-UTRAN FDD RSRQ absolute accuracy tests

Parameter	Unit	Cell 1	
DL timeslot number		0	DwPTS
UTRA RF Channel number (NOTE)		Channel 1	
PCCPCH_Ec/lor	dB	-3	
DwPCH_Ec/lor	dB		0
OCNS_Ec/lor	dB	-3	
lor/loc	dB	3	
loc	dBm / 1.28MHz	-75	
Propagation condition		AWGN	
NOTE:	In the case of multi-frequency, the UTRA RF Channel Number can be set for the primary frequency in this test.		

Table 8.7.16.5-3: E-UTRAN FDD cell specific test parameters for E-UTRAN FDD RSRQ absolute accuracy tests

Parameter		Unit	Test 1	Test 2	Test 3
E-UTRAN RF Channel Number			1	1	1
Bwchannel		MHz	10	10	10
Measurement bandwidth		n_{PRB}	22—27	22—27	22—27
PDCCH/PCFICH/PHICH Reference measurement channel defined in A.2.1 in TS 36.521-3 [33]			R.6 FDD	R.6 FDD	R.6 FDD
OCNG Patterns defined in D.1.1 (OP.1 FDD) and D.1.2 (OP.2 FDD) in TS 36.521-3 [33]			OP.2 FDD	OP.2 FDD	OP.2 FDD
PBCH_RA		dB	0	0	0
PBCH_RB					
PSS_RA					
SSS_RA					
PCFICH_RB					
PHICH_RA					
PHICH_RB					
PDCCH_RA					
PDCCH_RB					
PDSCH_RA					
PDSCH_RB					
OCNG_RA ^{Note1}					
OCNG_RB ^{Note1}					
N_{oc} ^{Note2}	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24				
	Bands 2, 5 and 7	-117.50			
	Band 25	-116.00			
	Bands 3, 8, 12, 13, 14, 17, 20 and 22	-116.50			
	Band 9	-118.50			
\hat{E}_s/I_{ot}		dB	-1.75	-3.20	-3.20
RSRP ^{Note3}	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24	dBm/15 kHz	-82.55	-107.90	-122.70
	Bands 2, 5 and 7				-120.70
	Band 25				-119.20
	Bands 3, 8, 12, 13, 14, 17, 20 and 22				-119.70
	Band 9				-121.70
RSRQ ^{Note3}	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24	dB	-14.76	-15.69	-15.69
	Bands 2, 5 and 7				
	Bands 3, 8, 12, 13, 14, 17, 20 and 22				
	Band 9				
I_o ^{Note3}	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24	dBm/9 MHz	-50.80	-75.22	-90.02
	Bands 2, 5 and 7				-88.02
	Band 25				-86.52
	Bands 3, 8, 12, 13, 14, 17, 20 and 22				-87.02
	Band 9				-89.02

\hat{E}_s / N_{oc}	dB	-1.75	-3.20	-3.20
Propagation condition	-	AWGN	AWGN	AWGN
<p>Note 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for N_{oc} to be fulfilled.</p> <p>Note 3: RSRQ, RSRP and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 4: RSRP and RSRQ minimum requirements are specified assuming independent interference and noise at each receiver antenna port.</p>				

Table 8.7.16.5-4: E-UTRAN FDD RSRQ absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3				
	All bands	All bands	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23, 24	Bands 2, 5, 7	Band 25	Bands 3, 8, 12, 13, 14, 17, 20, 22	Band 9
Normal Conditions							
Lowest reported value (Cell 2)	RSRQ_04	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00
Highest reported value (Cell 2)	RSRQ_16	RSRQ_16	RSRQ_16	RSRQ_16	RSRQ_16	RSRQ_16	RSRQ_16
Extreme Conditions							
Lowest reported value (Cell 2)	RSRQ_01	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00
Highest reported value (Cell 2)	RSRQ_19	RSRQ_17	RSRQ_17	RSRQ_17	RSRQ_17	RSRQ_17	RSRQ_17

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.17 E-UTRAN TDD RSRQ

Editor's note: This Test case is incomplete for frequencies above 3GHz

- *The Test system uncertainties applicable above 3GHz are undefined*
- *The Test Tolerances and Test Requirements applicable above 3GHz are undefined*

8.7.17.1 Definition and applicability

The absolute accuracy of RSRQ is defined as the RSRQ measured from a cell that has different carrier frequency from the serving cell.

The E-UTRAN TDD RSRQ absolute accuracy measurement is used for handover between UTRAN TDD and E-UTRAN TDD.

The requirements and this test apply to release 9 and later releases UTRA 1.28Mcps TDD UEs that support release 8 and later releases E-UTRA TDD.

8.7.17.2 Minimum Requirements

In CELL DCH state, whether or not UE requires idle intervals to perform E-UTRAN measurements, the requirements for accuracy of E-UTRA RSRQ measurements in CELL_DCH state shall be the same as the inter-frequency RSRQ Accuracy Requirements in 3GPP TS 36.133 [26], as follows:

Cell specific reference signals are transmitted either from one, two or four antenna ports.

Conditions defined in TS 36.101 [27] Section 7.3 for reference sensitivity are fulfilled.

RSRP[dBm] according to 36.133 Annex B.3.3 for a corresponding Band

Table 8.7.17.2-1: RSRQ Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions ¹				
		Normal condition	Extreme condition	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23, 24, 33, 34, 35, 36, 37, 38, 39, 40	Bands 2, 5, 7, 41	Band 25	Bands 3, 8, 12, 13, 14, 17, 20, 22	Bands 9, 42, 43
				Io	Io	Io	Io	Io
RSRQ when RSRP $\hat{E}_s/\text{lot} > -3$ dB	dBm	± 2.5	± 4	-121dBm/ 15kHz ... -50dBm/ BW _{Channel}	-119dBm/ 15kHz ... - 50dBm/ BW _{Channel}	-117.5dBm/ 15kHz ... - 50dBm/ BW _{Channel}	-118dBm/ 15kHz ... - 50dBm/ BW _{Channel}	-120dBm/ 15kHz ... - 50dBm/ BW _{Channel}
RSRQ when RSRP $\hat{E}_s/\text{lot} \geq -6$ dB	dBm	± 3.5	± 4	-121dBm/ 15kHz ... -50dBm/ BW _{Channel}	-119dBm/ 15kHz ... - 50dBm/ BW _{Channel}	-117.5dBm/ 15kHz ... - 50dBm/ BW _{Channel}	-118dBm/ 15kHz ... - 50dBm/ BW _{Channel}	-120dBm/ 15kHz ... - 50dBm/ BW _{Channel}

Note 1: Io is assumed to have constant EPRE across the bandwidth.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.5b and A.9.2.5b.2.

8.7.17.3 Test purpose

The purpose of this test is to verify that the E-UTRA TDD RSRQ absolute measurement accuracy is within the specified limits. This test will verify the requirements in section 8.7.17.2 and applies to UE supporting this capability.

8.7.17.4 Method of test

8.7.17.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table J.2 in Annex J.

In the test in Cell_DCH state, "E-UTRAN TDD RSRQ Measurement" is applied to measure on E-UTRAN TDD.

Tables 8.7.17.4.1-1 and 8.7.17.4.1-2 define the limits of signal strengths and code powers on the UTRA TDD cell. In the measurement control information periodic reporting of E-UTRAN TDD RSRQ is indicated to the UE. The E-UTRAN TDD test parameters are given in Table 8.7.17.4.1-3.

Table 8.7.17.4.1-1: General parameters of E-UTRA TDD RSRQ measurement tests

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in section C.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Active cell		Cell 1	1.28Mcps UTRA TDD cell
Neighbour cell		Cell 2	E-UTRA TDD cell
CP length of cell 2		Normal	
Uplink-downlink configuration of cell 2		1	As specified in table 4.2.2 in TS 36.211 [30]
Special subframe configuration of cell 2		6	As specified in table 4.2.1 in TS 36.211 [30]
Idle intervals period	ms	80	As specified in TS 25.331 [9]
Filter coefficient		0	L3 filtering is not used
Inter-RAT(E-UTRA TDD) measurement quantity		E-UTRA TDD RSRQ	

Table 8.7.17.4.1-2: E-UTRA TDD RSRQ measurement tests parameters (cell 1)

Parameter	Unit	Test 1, Test 2, and Test 3	
DL timeslot number		0	DwPTS
UTRA RF Channel number ^{note2}		Channel 1	
PCCPCH_Ec/Ior	dB	-3	
DwPCH_Ec/Ior	dB		0
OCNS_Ec/Ior	dB	-3	
Ioc	dBm/1.28MHz	-75	
Ior/Ioc	dB	3	
PCCPCH RSCP ^{note1}	dBm	-75	
Io ^{note1}	dBm/1.28MHz	-70.24	
Propagation condition		AWGN	
Note 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.			
Note 2: In the case of multi-frequency network of 1.28 Mcps TDD, the UTRA RF Channel Number can be set for the primary frequency in this test.			

Table 8.7.17.4.1-3: E-UTRA TDD RSRQ measurement tests parameters (cell 2)

Parameter	Unit	Test 1	Test 2	Test 3				
E-UTRA RF Channel Number		2	2	2				
BWchannel	MHz	10	10	10				
Measurement bandwidth	n_{PRB}	22—27	22—27	22—27				
PDCCH/PCFICH/PHICH Reference measurement channel defined in A.2.2 in TS 36.521-3 [33]		R.6 TDD	R.6 TDD	R.6 TDD				
OCNG Patterns defined in D.2.2 (OP.2 TDD) in TS 36.521-3 [33]		OP.2 TDD	OP.2 TDD	OP.2 TDD				
PBCH_RA	dB	0	0	0				
PBCH_RB								
PSS_RA								
SSS_RA								
PCFICH_RB								
PHICH_RA								
PHICH_RB								
PDCCH_RA								
PDCCH_RB								
PDSCH_RA								
PDSCH_RB								
OCNG_RA ^{Note1}								
OCNG_RB ^{Note1}								
N_{oc} ^{Note2}					Bands 33 – 40	-80	-104.70	-119.50
					Band 42 and 43			-118.50
	Band 41	-117.50						
\hat{E}_s / I_{ot}	dB	-1.75	-4.0	-4.0				
RSRP ^{Note3}	Bands 33 – 40	-81.75	-108.70	-123.50				
	Band 42 and 43			-122.50				
	Band 41			-121.50				
RSRQ ^{Note3}	Bands 33 – 43	-14.76	-16.25	-16.25				
I_o ^{Note3}	Bands 33 – 40	-50	-75.46	-90.26				
	Bands 42 and 43			-89.26				
	Bands 41			-88.26				
\hat{E}_s / N_{oc}	dB	-1.75	-4.0	-4.0				
Propagation condition	-	AWGN	AWGN	AWGN				
Note 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.								
Note 2: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for N_{oc} to be fulfilled.								
Note 3: RSRP, RSRQ and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.								
Note 4: RSRP and RSRQ minimum requirements are specified assuming independent interference and noise at each receiver antenna port.								

8.7.17.4.2 Test Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2. The RF parameters for Test 1 are set up according to tables 8.7.17.5-2 and 8.7.17.5-3.
- 2) SS shall transmit the MEASUREMENT CONTROL message for inter RAT measurement. In the measurement control information periodic reporting of the EUTRAN TDD RSRQ is requested to the UE.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check E-UTRAN TDD RSRQ value of Cell 2 in MEASUREMENT REPORT messages. E-UTRAN TDD RSRQ values of Cell 2 reported by UE is compared to actual E-UTRAN TDD RSRQ value of Cell 2 for each MEASUREMENT REPORT message.

- 5) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Tables G.2.3-1 in TS 36.521-3 [33] is achieved.
- 6) The RF parameters are set up according to tables 8.7.17.5-2 and 8.7.17.5-3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 5s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) and 5) above are repeated.
- 7) The RF parameters are set up according to tables 8.7.17.5-2 and 8.7.17.5-3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 5s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) and 5) above are repeated.
- 8) The SS shall transmit RRC CONNECTION RELEASE message.
- 9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of TS 34.108 [3] and clause 4.4 and 4.7B.1 of TS 36.508 [28], with the following exceptions:

MEASUREMENT CONTROL message for EUTRAN TDD measurement (Step 1):

Derivation Path: TS 36.508 [28], clause 4.7B.1 Table 4.7B.1-3: MEASUREMENT CONTROL			
Information Element	Value/remark	Comment	Condition
Message Type			
RRC transaction identifier	0		
Measurement Identity	2		
Measurement Reporting Mode			
- Measurement Report Transfer Mode	Acknowledged mode RLC		
- Periodical Reporting/Event Trigger Reporting Mode	Periodical reporting		
CHOICE Measurement type	Inter-RAT measurement		
- CHOICE Inter-RAT measurement objects	E-UTRA frequency list		
- New frequencies			
- E-UTRA carrier frequency	Downlink EARFCN of E-UTRA Cell		
- Measurement bandwidth	mbw6		
- Inter-RAT measurement quantity			
- Measurement quantity for UTRAN quality estimate			
- Filter coefficient	0		
- CHOICE mode	TDD		TDD_UTRA
- Measurement quantity	Primary CCPCH RSCP		
- CHOICE system	E-UTRA		
- Measurement quantity	RSRQ		
- Filter coefficient	0		
- CHOICE report criteria	Periodical reporting criteria		
- Periodical reporting criteria			
- Amount of reporting	Infinity		
- Reporting interval	500 ms		
- Reporting cell status			
- CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT		
- Maximum number of reported cells	1		
- Idle Interval Information			
- k	3 (80 ms)	The actual idle interval period equal to 2 ^k radio frames.	
- offset	Not present	Default value is 0.	

8.7.17.5 Test requirements

Table 8.7.17.5-2 and table 8.7.17.5-3 defines the primary level settings including test tolerances for all tests.

For the test to pass, the ratio of successful reported values according to table 8.7.17.5-4 in each test shall be more than 90% with a confidence of 95%.

Table 8.7.17.5-1: Void

Table 8.7.17.5-2: UTRAN TDD cell specific test parameters for E-UTRAN TDD RSRQ absolute accuracy tests

Parameter	Unit	Test 1, Test 2, and Test 3	
DL timeslot number		0	DwPTS
UTRA RF Channel number ^{Note2}		Channel 1	
PCCPCH_Ec/Ior	dB	-3	
DwPCH_Ec/Ior	dB		0
OCNS_Ec/Ior	dB	-3	
Ioc	dBm/1.28MHz	-75	
Ior/Ioc	dB	3	
PCCPCH RSCP ^{Note1}	dBm	-75	
Io ^{Note1}	dBm/1.28MHz	-70.24	
Propagation condition		AWGN	
Note 1:	PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.		
Note 2:	In the case of multi-frequency network of 1.28 Mcps TDD, the UTRA RF Channel Number can be set for the primary frequency in this test.		

Table 8.7.17.5-3: E-UTRAN TDD cell specific test parameters for E-UTRAN TDD RSRQ absolute accuracy tests

Parameter		Unit	Test 1	Test 2	Test 3				
E-UTRA RF Channel Number			2	2	2				
BWchannel		MHz	10	10	10				
Measurement bandwidth		n_{PRB}	22–27	22–27	22–27				
PDCCH/PCFICH/PHICH Reference measurement channel defined in A.2.2 in TS 36.521-3 [33]			R.6 TDD	R.6 TDD	R.6 TDD				
OCNG Patterns defined in D.2.2 (OP.2 TDD) in TS 36.521-3 [33]			OP.2 TDD	OP.2 TDD	OP.2 TDD				
PBCH_RA		dB	0	0	0				
PBCH_RB									
PSS_RA									
SSS_RA									
PCFICH_RB									
PHICH_RA									
PHICH_RB									
PDCCH_RA									
PDCCH_RB									
PDSCH_RA									
PDSCH_RB									
OCNG_RA ^{Note1}									
OCNG_RB ^{Note1}									
N_{oc} ^{Note2}	Bands 33 – 40					dBm/15 kHz	-80.80	-104.70	-119.50
	Band 42 and 43								-118.50
	Band 41	-117.50							
\hat{E}_s / I_{ot}		dB	-1.75	-3.20	-3.20				
RSRP ^{Note3}	Bands 33 – 40	dBm/15 kHz	-82.55	-107.90	-122.70				
	Band 42 and 43				-121.70				
	Band 41				-120.70				
RSRQ ^{Note3}	Bands 33 – 40	dB	-14.76	-15.69	-15.69				
I_o ^{Note3}	Bands 33 – 40	dBm/9 MHz	-50.80	-75.22	-90.02				
	Band 42 and 43				-89.02				
	Band 41				-88.02				
\hat{E}_s / N_{oc}		dB	-1.75	-3.20	-3.20				
Propagation condition		-	AWGN	AWGN	AWGN				
<p>Note 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.</p> <p>Note 2: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for N_{oc} to be fulfilled.</p> <p>Note 3: RSRP, RSRQ and I_o levels have been derived from other parameters for information purposes. They are not settable parameters themselves.</p> <p>Note 4: RSRP and RSRQ minimum requirements are specified assuming independent interference and noise at each receiver antenna port.</p>									

Table 8.7.17.5-4: E-UTRAN TDD RSRQ absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3		
	All bands	All bands	Bands 33 ~ 40	Bands 42, 43	Bands 41
Normal Conditions					
Lowest reported value (Cell 2)	RSRQ_04	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00
Highest reported value (Cell 2)	RSRQ_16	RSRQ_16	RSRQ_16	RSRQ_16	RSRQ_16
Extreme Conditions					
Lowest reported value (Cell 2)	RSRQ_01	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00
Highest reported value (Cell 2)	RSRQ_19	RSRQ_17	RSRQ_17	RSRQ_17	RSRQ_17

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.