

14.3 Combinations on PDSCH and DPCH

14.3.1 Void

14.3.2 Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.3.2.1 Interactive or background / UL:64 DL:384 kbps / PS RAB / 10 ms TTI

14.3.2.1.1 Conformance requirement

See 14.2.4.1.

14.3.2.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.2 for the downlink 10 ms TTI case.

14.3.2.1.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x354
	DSCH_TF1, bits	1x354
	DSCH_TF2, bits	2x354
	DSCH_TF3, bits	4x354
	DSCH_TF4, bits	8x354
	DSCH_TF5, bits	12x354

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCS (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_DSCH_TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_DSCH_TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_DSCH_TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1912	RB5: 1272
4	DL_DSCH_TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552
5	DL_DSCH_TFC5	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 3832	RB5: 3832

NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCS.

NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5: the UL RLC SDU size have been chosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.

See 14.1.1 for test procedure.

14.3.2.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15 the UE transmitted transport format shall be
 - for sub-test 1: RB5/TF1 (1x336).
 - for sub-test 2: RB5/TF2 (2x336).
 - for sub-test 3: RB5/TF3 (3x336).
 - for sub-test 4 and 5: RB5/TF4 (4x336).
3. At step 15 the UE shall return
 - for sub-test 1, 2, 4 and 6: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.
 - for sub-test 3: an RLC SDU on RB5 having the first 1272 bits equal to the content of the DL RLC SDU sent by the SS.

14.3.2.2 Interactive or background / UL:64 DL:384 kbps / PS RAB / 20 ms TTI

14.3.2.2.1 Conformance requirement

See 14.2.4.1.

14.3.2.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.2 for the downlink 20 ms TTI case.

14.3.2.2.3 Method of test

Uplink TFS:

	TF	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x354
	DSCH_TF1, bits	1x354
	DSCH_TF2, bits	2x354
	DSCH_TF3, bits	4x354
	DSCH_TF4, bits	8x354
	DSCH_TF5, bits	12x354
	DSCH_TF6, bits	16x354
	DSCH_TF7, bits	20x354
	DSCH_TF8, bits	24x354

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5
DL_DSCH_TFC6	DSCH_TF6
DL_DSCH_TFC7	DSCH_TF7
DL_DSCH_TFC8	DSCH_TF8

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Sub-tests:

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_DSCH_TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_DSCH_TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_DSCH_TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1912	RB5: 1272
4	DL_DSCH_TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
5	DL_DSCH_TFC5	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 3832	RB5: 3832
6	DL_DSCH_TFC6	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
7	DL_DSCH_TFC7	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 6392	RB5: 6392
8	DL_DSCH_TFC8	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
<p>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. . RB5: the UL RLC SDU size have been chosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.</p>						

See 14.1.1 for test procedure.

14.3.2.2.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15 the UE transmitted transport format shall be
 - for sub-test 1: RB5/TF1 (1x336).
 - for sub-test 2: RB5/TF2 (2x336).
 - for sub-test 3: RB5/TF3 (3x336).
 - for sub-test 4, 5, 6, 7 and 8: RB5/TF4 (4x336).
3. At step 15 the UE shall return
 - for sub-test 1, 2, 4, 5, 6, 7 and 8: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.
 - for sub-test 3: an RLC SDU on RB5 having the first 1272 bits equal to the content of the DL RLC SDU sent by the SS.

14.3.3 Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.3.3.1 Interactive or background / UL:64 DL:2048 kbps / PS RAB / 10 ms TTI

14.3.3.1.1 Conformance requirement

See 14.2.4.1.

14.3.3.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.3 for the downlink 10 ms TTI case.

14.3.3.1.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x674
	DSCH_TF1, bits	1x674
	DSCH_TF2, bits	2x674
	DSCH_TF3, bits	4x674
	DSCH_TF4, bits	8x674
	DSCH_TF5, bits	12x674
	DSCH_TF6, bits	16x674
	DSCH_TF7, bits	20x674
	DSCH_TF8, bits	24x674
	DSCH_TF9, bits	28x674
	DSCH_TF10, bits	32x674

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5
DL_DSCH_TFC6	DSCH_TF6
DL_DSCH_TFC7	DSCH_TF7
DL_DSCH_TFC8	DSCH_TF8
DL_DSCH_TFC9	DSCH_TF9
DL_DSCH_TFC10	DSCH_TF10

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCs:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Sub-tests:

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_DSCH_TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 632	RB5: 632
2	DL_DSCH_TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 1272	RB5: 1272
3	DL_DSCH_TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 2872	RB5: 2552
4	DL_DSCH_TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
5	DL_DSCH_TFC5	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
6	DL_DSCH_TFC6	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 10232	RB5: 10232
7	DL_DSCH_TFC7	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 12792	RB5: 12792
8	DL_DSCH_TFC8	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 15352	RB5: 15352

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
9	DL_DSCH_TFC9	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 17912	RB5: 17912
10	DL_DSCH_TFC10	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 20472	RB5: 20472
NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCs. NOTE 2 : See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5: the UL RLC SDU size have been chosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.						

See 14.1.1 for test procedure.

14.3.3.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15 the UE transmitted transport format shall be
 - for sub-test 1: RB5/TF1 (1x336).
 - for sub-test 2: RB5/TF2 (2x336).
 - for sub-test 3: RB5/TF3 (3x336).
 - for sub-test 4, 5, 6, 7, 8, 9 and 10: RB5/TF4 (4x336).
3. At step 15 the UE shall return
 - for sub-test 1, 2, 4 to 10: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.
 - for sub-test 3: an RLC SDU on RB5 having the first 2552 bits equal to the content of the DL RLC SDU sent by the SS.

14.3.3.2 Interactive or background / UL:64 DL:2048 kbps / PS RAB / 20 ms TTI

14.3.3.2.1 Conformance requirement

See 14.2.4.1.

14.3.3.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.3 for the downlink 20 ms TTI case.

14.3.3.2.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x674
	DSCH_TF1, bits	1x674
	DSCH_TF2, bits	2x674
	DSCH_TF3, bits	4x674
	DSCH_TF4, bits	8x674
	DSCH_TF5, bits	12x674
	DSCH_TF6, bits	16x674
	DSCH_TF7, bits	20x674
	DSCH_TF8, bits	24x674
	DSCH_TF9, bits	28x674
	DSCH_TF10, bits	32x674
	DSCH_TF11, bits	36x674
	DSCH_TF12, bits	40x674
	DSCH_TF13, bits	44x674
	DSCH_TF14, bits	48x674
	DSCH_TF15, bits	52x674
	DSCH_TF16, bits	56x674
	DSCH_TF17, bits	60x674
DSCH_TF18, bits	64x674	

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5
DL_DSCH_TFC6	DSCH_TF6
DL_DSCH_TFC7	DSCH_TF7
DL_DSCH_TFC8	DSCH_TF8
DL_DSCH_TFC9	DSCH_TF9
DL_DSCH_TFC10	DSCH_TF10
DL_DSCH_TFC11	DSCH_TF11
DL_DSCH_TFC12	DSCH_TF12
DL_DSCH_TFC13	DSCH_TF13
DL_DSCH_TFC14	DSCH_TF14
DL_DSCH_TFC15	DSCH_TF15
DL_DSCH_TFC16	DSCH_TF16
DL_DSCH_TFC17	DSCH_TF17
DL_DSCH_TFC18	DSCH_TF18

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Sub-tests:

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_DSCH_TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 632	RB5: 632
2	DL_DSCH_TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 1272	RB5: 1272
3	DL_DSCH_TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 2872	RB5: 2552
4	DL_DSCH_TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
5	DL_DSCH_TFC5	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
6	DL_DSCH_TFC6	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 10232	RB5: 20232
7	DL_DSCH_TFC7	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 12792	RB5: 12792
8	DL_DSCH_TFC8	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 15352	RB5: 15352
9	DL_DSCH_TFC9	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 17912	RB5: 17912
10	DL_DSCH_TFC10	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 20472	RB5: 20472
11	DL_DSCH_TFC11	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 23032	RB5: 23032
12	DL_DSCH_TFC12	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 25592	RB5: 25592

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
13	DL_DSCH_TFC13	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 28152	RB5: 28152
14	DL_DSCH_TFC14	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 30712	RB5: 30712
15	DL_DSCH_TFC15	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 33272	RB5: 33272
16	DL_DSCH_TFC16	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 35832	RB5: 35832
17	DL_DSCH_TFC17	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 38392	RB5: 38392
18	DL_DSCH_TFC18	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 40952	RB5: 40952
<p>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5: the UL RLC SDU size have been chosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.</p>						

See 14.1.1 for test procedure.

14.3.3.2.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15 the UE transmitted transport format shall be
 - for sub-test 1: RB5/TF1 (1x336).
 - for sub-test 2: RB5/TF2 (2x336).
 - for sub-test 3: RB5/TF3 (3x336).
 - for sub-test 4 to 18: RB5/TF4 (4x336).
3. At step 15 the UE shall return
 - for sub-test 1, 2, 4 to 18: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.
 - for sub-test 3: an RLC SDU on RB5 having the first 2552 bits equal to the content of the DL RLC SDU sent by the SS.

14.3.4 Void

14.3.5 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +
Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4
DL:3.4 kbps SRBs for DCCH14.3.5.1 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or
background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for
DCCH / 10 ms TTI

14.3.5.1.1 Conformance requirement

See 14.2.4.1

14.3.5.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.5 for the downlink 10 ms TTI case.

14.3.5.1.3 Method of test

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x81(alt. 1x0)	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	2x336	N/A
	TF3, bits	N/A	N/A	N/A	3x336	N/A
	TF4, bits	N/A	N/A	N/A	4x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF1, TF0, TF0)
UL_TFC3	(TF0, TF0, TF0, TF1, TF0)
UL_TFC4	(TF1, TF0, TF0, TF1, TF0)
UL_TFC5	(TF2, TF1, TF1, TF1, TF0)
UL_TFC6	(TF0, TF0, TF0, TF2, TF0)
UL_TFC7	(TF1, TF0, TF0, TF2, TF0)
UL_TFC8	(TF2, TF1, TF1, TF2, TF0)
UL_TFC9	(TF0, TF0, TF0, TF3, TF0)
UL_TFC10	(TF1, TF0, TF0, TF3, TF0)
UL_TFC11	(TF2, TF1, TF1, TF3, TF0)
UL_TFC12	(TF0, TF0, TF0, TF4, TF0)
UL_TFC13	(TF1, TF0, TF0, TF4, TF0)
UL_TFC14	(TF2, TF1, TF1, TF4, TF0)
UL_TFC15	(TF0, TF0, TF0, TF0, TF1)
UL_TFC16	(TF1, TF0, TF0, TF0, TF1)
UL_TFC17	(TF2, TF1, TF1, TF0, TF1)
UL_TFC18	(TF0, TF0, TF0, TF1, TF1)
UL_TFC19	(TF1, TF0, TF0, TF1, TF1)
UL_TFC20	(TF2, TF1, TF1, TF1, TF1)
UL_TFC21	(TF0, TF0, TF0, TF2, TF1)
UL_TFC22	(TF1, TF0, TF0, TF2, TF1)
UL_TFC23	(TF2, TF1, TF1, TF2, TF1)
UL_TFC24	(TF0, TF0, TF0, TF3, TF1)
UL_TFC25	(TF1, TF0, TF0, TF3, TF1)
UL_TFC26	(TF2, TF1, TF1, TF3, TF1)
UL_TFC27	(TF0, TF0, TF0, TF4, TF1)
UL_TFC28	(TF1, TF0, TF0, TF4, TF1)
UL_TFC29	(TF2, TF1, TF1, TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x354
	DSCH_TF1, bits	1x354
	DSCH_TF2, bits	2x354
	DSCH_TF3, bits	4x354
	DSCH_TF4, bits	8x354
	DSCH_TF5, bits	12x354

DSCH downlink TFCS:

TFCI	RB8
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5

Downlink TFS (For CS):

	TF	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)
TFS	TF0, bits	1x0	0x103	0x60
	TF1, bits	1x39	1x103	1x60
	TF2, bits	1x81	N/A	N/A
	TF3, bits	N/A	N/A	N/A
	TF4, bits	N/A	N/A	N/A
	TF5, bits	N/A	N/A	N/A

DCH downlink TFS:

	TF	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
DL_TFC0	(TF0, TF0, TF0, DCH_TF0)
DL_TFC1	(TF1, TF0, TF0, DCH_TF0)
DL_TFC2	(TF2, TF1, TF1, DCH_TF0)
DL_TFC3	(TF0, TF0, TF0, DCH_TF1)
DL_TFC4	(TF1, TF0, TF0, DCH_TF1)
DL_TFC5	(TF2, TF1, TF1, DCH_TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (Note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1, DL_TFC4,	UL_TFC1, UL_TFC16	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC5,	UL_TFC2, UL_TFC17	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC1, DL_TFC4, DL_DSCH_TFC1	UL_TFC3, UL_TFC18	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC18	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: No data RB6: No data RB7: No data RB8: 312

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (Note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
4	DL_TFC1, DL_TFC4, DL_DSCH_TFC1	UL_TFC4, UL_TFC19	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC15, UL_TFC19	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: 312
5	DL_TFC2, DL_TFC5, DL_DSCH_TFC1	UL_TFC5, UL_TFC20	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC5, UL_TFC15, UL_TFC20	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: 312
6	DL_TFC1, DL_TFC4, DL_DSCH_TFC2	UL_TFC6, UL_TFC21	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3,UL_TFC6,UL_TFC15,UL_TFC21	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 632
7	DL_TFC1, DL_TFC4, DL_DSCH_TFC2	UL_TFC7, UL_TFC22	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC7, UL_TFC15, UL_TFC22	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 632
8	DL_TFC2, DL_TFC5, DL_DSCH_TFC2	UL_TFC8, UL_TFC23	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC8, UL_TFC15, UL_TFC23	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 632
9	DL_TFC1, DL_TFC4, DL_DSCH_TFC3	UL_TFC9, UL_TFC24	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC9, UL_TFC15, UL_TFC24	RB5: 39 RB6: 103 RB7: 60 RB8: 952	RB5: No data RB6: No data RB7: No data RB8: 1272
10	DL_TFC1, DL_TFC4, DL_DSCH_TFC3	UL_TFC10, UL_TFC25	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC10, UL_TFC15, UL_TFC25	RB5: 39 RB6: 103 RB7: 60 RB8: 952	RB5: 39 RB6: No data RB7: No data RB8: 1272
11	DL_TFC2, DL_TFC5, DL_DSCH_TFC3	UL_TFC11, UL_TFC26	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC11, UL_TFC15, UL_TFC26	RB5: 81 RB6: 103 RB7: 60 RB8: 952	RB5: 81 RB6: 103 RB7: 60 RB8: 1272
12	DL_TFC1, DL_TFC4, DL_DSCH_TFC4	UL_TFC12, UL_TFC27	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC12, UL_TFC15, UL_TFC27	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: No data RB6: No data RB7: No data RB8: 2552

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (Note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
13	DL_TFC1, DL_TFC4, DL_DSCH_TFC4	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 2552
14	DL_TFC2, DL_TFC5, DL_DSCH_TFC4	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 2552
15	DL_TFC1, DL_TFC4, DL_DSCH_TFC5	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 3882
16	DL_TFC2, DL_TFC5, DL_DSCH_TFC5	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 3882
<p>NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, and UL_TFC15 are part of minimum set of TFCs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB8: Test data size has been set to DL TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit). The size of the uplink RLC SDU is set to the uplink TFS size minus 8 bits (size of 7 bit length indicator and expansion bit).</p>						

14.3.5.1.4 Test requirements

See 14.1.2a for definition of step B10 and step 15.

1. At step B10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15e and 15f the UE transmitted transport format shall be within the set of restricted TFCs as specified for the actual sub-test.
3. At step 15e and 15f the UE shall return
 - for sub-test 1: RLC SDUs on RB5 having the same content as the DL RLC SDUs sent by the SS; and no data shall be received on RB6, RB7 and RB8
 - for sub-test 2: RLC SDUs on RB5, RB6 and RB7 having the same content as the DL RLC SDUs sent by the SS; and no data shall be received on RB8.
 - for sub-test 3 and 6: RLC SDUs on RB8 having the same content as the DL RLC SDUs sent by the SS; no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4 and 7: RLC SDUs on RB5 and RB8 having the same content as the DL RLC SDUs sent by the SS.
 - for sub-test 5 and 8: RLC SDUs on RB5, RB6, RB7 and RB8 having the same content as the DL RLC SDUs sent by the SS.
 - for sub-test 9: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.

- for sub-test 10: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
- for sub-test 11: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.
- for sub-test 12: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 13 and 15: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
- for sub-test 14 and 16: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.

4. At step 15f UE shall send at least one MEASUREMENT REPORT message.

14.3.5.2 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / 20 ms TTI

14.3.5.2.1 Conformance requirement

See 14.2.4.1

14.3.5.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.5 for the downlink 20 ms TTI case.

14.3.5.2.3 Method of test

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x81(alt. 1x0)	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	2x336	N/A
	TF3, bits	N/A	N/A	N/A	3x336	N/A
	TF4, bits	N/A	N/A	N/A	4x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF1, TF0, TF0)
UL_TFC3	(TF0, TF0, TF0, TF1, TF0)
UL_TFC4	(TF1, TF0, TF0, TF1, TF0)
UL_TFC5	(TF2, TF1, TF1, TF1, TF0)
UL_TFC6	(TF0, TF0, TF0, TF2, TF0)
UL_TFC7	(TF1, TF0, TF0, TF2, TF0)
UL_TFC8	(TF2, TF1, TF1, TF2, TF0)
UL_TFC9	(TF0, TF0, TF0, TF3, TF0)
UL_TFC10	(TF1, TF0, TF0, TF3, TF0)
UL_TFC11	(TF2, TF1, TF1, TF3, TF0)
UL_TFC12	(TF0, TF0, TF0, TF4, TF0)
UL_TFC13	(TF1, TF0, TF0, TF4, TF0)
UL_TFC14	(TF2, TF1, TF1, TF4, TF0)
UL_TFC15	(TF0, TF0, TF0, TF0, TF1)
UL_TFC16	(TF1, TF0, TF0, TF0, TF1)
UL_TFC17	(TF2, TF1, TF1, TF0, TF1)
UL_TFC18	(TF0, TF0, TF0, TF1, TF1)
UL_TFC19	(TF1, TF0, TF0, TF1, TF1)
UL_TFC20	(TF2, TF1, TF1, TF1, TF1)
UL_TFC21	(TF0, TF0, TF0, TF2, TF1)
UL_TFC22	(TF1, TF0, TF0, TF2, TF1)
UL_TFC23	(TF2, TF1, TF1, TF2, TF1)
UL_TFC24	(TF0, TF0, TF0, TF3, TF1)
UL_TFC25	(TF1, TF0, TF0, TF3, TF1)
UL_TFC26	(TF2, TF1, TF1, TF3, TF1)
UL_TFC27	(TF0, TF0, TF0, TF4, TF1)
UL_TFC28	(TF1, TF0, TF0, TF4, TF1)
UL_TFC29	(TF2, TF1, TF1, TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x354
	DSCH_TF1, bits	1x354
	DSCH_TF2, bits	2x354
	DSCH_TF3, bits	4x354
	DSCH_TF4, bits	8x354
	DSCH_TF5, bits	12x354
	DSCH_TF6, bits	16x354
	DSCH_TF7, bits	20x354
	DSCH_TF8, bits	24x354

DSCH downlink TFCS:

TFCI	RB8
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5
DL_DSCH_TFC6	DSCH_TF6
DL_DSCH_TFC7	DSCH_TF7
DL_DSCH_TFC8	DSCH_TF8

Downlink TFS (For CS):

	TF	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)
TFS	TF0, bits	1x0	0x103	0x60
	TF1, bits	1x39	1x103	1x60
	TF2, bits	1x81	N/A	N/A
	TF3, bits	N/A	N/A	N/A
	TF4, bits	N/A	N/A	N/A
	TF5, bits	N/A	N/A	N/A

DCH downlink TFS:

	TF	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
DL_TFC0	(TF0, TF0, TF0, DCH_TF0)
DL_TFC1	(TF1, TF0, TF0, DCH_TF0)
DL_TFC2	(TF2, TF1, TF1, DCH_TF0)
DL_TFC3	(TF0, TF0, TF0, DCH_TF1)
DL_TFC4	(TF1, TF0, TF0, DCH_TF1)
DL_TFC5	(TF2, TF1, TF1, DCH_TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1, DL_TFC4,	UL_TFC1, UL_TFC16	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC5,	UL_TFC2, UL_TFC17	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC1, DL_TFC4, DL_DSCH_TFC1	UL_TFC3, UL_TFC18	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC18,,,	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: No data RB6: No data RB7: No data RB8: 312

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCS (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
4	DL_TFC1, DL_TFC4, DL_DSCH_TFC1	UL_TFC4, UL_TFC19	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC15, UL_TFC19,,	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: 312
5	DL_TFC2, DL_TFC5, DL_DSCH_TFC1	UL_TFC5, UL_TFC20	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC15, UL_TFC20,,	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: 312
6	DL_TFC1, DL_TFC4, DL_DSCH_TFC2	UL_TFC6, UL_TFC21	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC15, UL_TFC21,,	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 632
7	DL_TFC1, DL_TFC4, DL_DSCH_TFC2	UL_TFC7, UL_TFC22	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC7, UL_TFC15, UL_TFC22	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 632
8	DL_TFC2, DL_TFC5, DL_DSCH_TFC2	UL_TFC8, UL_TFC23	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC8, UL_TFC15, UL_TFC23,,	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 632
9	DL_TFC1, DL_TFC4, DL_DSCH_TFC3	UL_TFC9, UL_TFC24	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC9, UL_TFC15, UL_TFC24,,	RB5: 39 RB6: 103 RB7: 60 RB8: 952	RB5: No data RB6: No data RB7: No data RB8: 1272
10	DL_TFC1, DL_TFC4, DL_DSCH_TFC3	UL_TFC10, UL_TFC25	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC10, UL_TFC15, UL_TFC25,,	RB5: 39 RB6: 103 RB7: 60 RB8: 952	RB5: 39 RB6: No data RB7: No data RB8: 1272
11	DL_TFC2, DL_TFC5, DL_DSCH_TFC3	UL_TFC11, UL_TFC26	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC11, UL_TFC15, UL_TFC26,,	RB5: 81 RB6: 103 RB7: 60 RB8: 952	RB5: 81 RB6: 103 RB7: 60 RB8: 1272
12	DL_TFC1, DL_TFC4, DL_DSCH_TFC4	UL_TFC12, UL_TFC27	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC12, UL_TFC15, UL_TFC27,,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: No data RB6: No data RB7: No data RB8: 2552

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCS (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
13	DL_TFC1, DL_TFC4, DL_DSCH_TFC4	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 2552
14	DL_TFC2, DL_TFC5, DL_DSCH_TFC4	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3,, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 2552
15	DL_TFC1, DL_TFC4, DL_DSCH_TFC5	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3,, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 3882
16	DL_TFC2, DL_TFC5, DL_DSCH_TFC5	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 3882
17	DL_TFC1, DL_TFC4, DL_DSCH_TFC6	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 5112
18	DL_TFC2, DL_TFC5, DL_DSCH_TFC6	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 5112
19	DL_TFC1, DL_TFC4, DL_DSCH_TFC7	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 6392
20	DL_TFC2, DL_TFC5, DL_DSCH_TFC7	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 6392
21	DL_TFC1, DL_TFC4, DL_DSCH_TFC8	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 7672

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
22	DL_TFC2, DL_TFC5, DL_DSCH_TFC8	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29, , ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 7672
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, and UL_TFC15 are part of minimum set of TFCs.						
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB8: Test data size has been set to DL TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size has been set equal to the uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).						

14.3.5.2.4 Test requirements

See 14.1.2a for definition of step B10 and step 15.

1. At step B10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15e and 15f the UE transmitted transport format shall be within the set of restricted TFCs as specified for the actual sub-test.
3. At step 15e and 15f the UE shall return
 - for sub-test 1: RLC SDUs on RB5 having the same content as the DL RLC SDUs sent by the SS; and no data shall be received on RB6, RB7 and RB8.
 - for sub-test 2: RLC SDUs on RB5, RB6 and RB7 having the same content as the DL RLC SDUs sent by the SS; and no data shall be received on RB8.
 - for sub-test 3 and 6: RLC SDUs on RB8 having the same content as the DL RLC SDUs sent by the SS; no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4 and 7: RLC SDUs on RB5 and RB8 having the same content as the DL RLC SDUs sent by the SS.
 - for sub-test 5 and 8: RLC SDUs on RB5, RB6, RB7 and RB8 having the same content as the DL RLC SDUs sent by the SS.
 - for sub-test 9: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 10: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 11: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 12: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-tests 13, 15, 17, 19 and 21: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-tests 14, 16, 18, 20 and 22: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.
4. At step 15f UE shall send at least one MEASUREMENT REPORT message.

14.3.6 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.3.6.1 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / 10 ms TTI

14.3.6.1.1 Conformance requirement

See 14.2.4.1

14.3.6.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.6 for the downlink 10 ms TTI case.

14.3.6.1.3 Method of test

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x81(alt. 1x0)	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	2x336	N/A
	TF3, bits	N/A	N/A	N/A	3x336	N/A
	TF4, bits	N/A	N/A	N/A	4x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF1, TF0, TF0)
UL_TFC3	(TF0, TF0, TF0, TF1, TF0)
UL_TFC4	(TF1, TF0, TF0, TF1, TF0)
UL_TFC5	(TF2, TF1, TF1, TF1, TF0)
UL_TFC6	(TF0, TF0, TF0, TF2, TF0)
UL_TFC7	(TF1, TF0, TF0, TF2, TF0)
UL_TFC8	(TF2, TF1, TF1, TF2, TF0)
UL_TFC9	(TF0, TF0, TF0, TF3, TF0)
UL_TFC10	(TF1, TF0, TF0, TF3, TF0)
UL_TFC11	(TF2, TF1, TF1, TF3, TF0)
UL_TFC12	(TF0, TF0, TF0, TF4, TF0)
UL_TFC13	(TF1, TF0, TF0, TF4, TF0)
UL_TFC14	(TF2, TF1, TF1, TF4, TF0)
UL_TFC15	(TF0, TF0, TF0, TF0, TF1)
UL_TFC16	(TF1, TF0, TF0, TF0, TF1)
UL_TFC17	(TF2, TF1, TF1, TF0, TF1)
UL_TFC18	(TF0, TF0, TF0, TF1, TF1)
UL_TFC19	(TF1, TF0, TF0, TF1, TF1)
UL_TFC20	(TF2, TF1, TF1, TF1, TF1)
UL_TFC21	(TF0, TF0, TF0, TF2, TF1)
UL_TFC22	(TF1, TF0, TF0, TF2, TF1)
UL_TFC23	(TF2, TF1, TF1, TF2, TF1)
UL_TFC24	(TF0, TF0, TF0, TF3, TF1)
UL_TFC25	(TF1, TF0, TF0, TF3, TF1)
UL_TFC26	(TF2, TF1, TF1, TF3, TF1)
UL_TFC27	(TF0, TF0, TF0, TF4, TF1)
UL_TFC28	(TF1, TF0, TF0, TF4, TF1)
UL_TFC29	(TF2, TF1, TF1, TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (2048 kbps)
TFS	DSCH_TF0, bits	0x674
	DSCH_TF1, bits	1x674
	DSCH_TF2, bits	2x674
	DSCH_TF3, bits	4x674
	DSCH_TF4, bits	8x674
	DSCH_TF5, bits	12x674
	DSCH_TF6, bits	16x674
	DSCH_TF7, bits	20x674
	DSCH_TF8, bits	24x674
	DSCH_TF9, bits	28x674
	DSCH_TF10, bits	32x674

DSCH downlink TFCS:

TFCI	RB8
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5
DL_DSCH_TFC6	DSCH_TF6
DL_DSCH_TFC7	DSCH_TF7
DL_DSCH_TFC8	DSCH_TF8
DL_DSCH_TFC9	DSCH_TF9
DL_DSCH_TFC10	DSCH_TF10

Downlink TFS (For CS):

	TF	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)
TFS	TF0, bits	1x0	0x103	0x60
	TF1, bits	1x39	1x103	1x60
	TF2, bits	1x81	N/A	N/A
	TF3, bits	N/A	N/A	N/A
	TF4, bits	N/A	N/A	N/A
	TF5, bits	N/A	N/A	N/A

DCH downlink TFS:

	TF	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
DL_TFC0	(TF0, TF0, TF0, DCH_TF0)
DL_TFC1	(TF1, TF0, TF0, DCH_TF0)
DL_TFC2	(TF2, TF1, TF1, DCH_TF0)
DL_TFC3	(TF0, TF0, TF0, DCH_TF1)
DL_TFC4	(TF1, TF0, TF0, DCH_TF1)
DL_TFC5	(TF2, TF1, TF1, DCH_TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1, DL_TFC4,	UL_TFC1, UL_TFC16	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC16,,	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC5,	UL_TFC2, UL_TFC17	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC17,,	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC1, DL_TFC4, DL_DSCH_TFC1	UL_TFC3, UL_TFC18	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC18,,	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: No data RB6: No data RB7: No data RB8: 632
4	DL_TFC1, DL_TFC4, DL_DSCH_TFC1	UL_TFC4, UL_TFC19	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC15, UL_TFC19,,	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: 632
5	DL_TFC2, DL_TFC5, DL_DSCH_TFC1	UL_TFC5, UL_TFC20	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC15, UL_TFC20,,	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: 632
6	DL_TFC1, DL_TFC4, DL_DSCH_TFC2	UL_TFC6, UL_TFC21	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC15, UL_TFC21,,	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 1272
7	DL_TFC1, DL_TFC4, DL_DSCH_TFC2	UL_TFC7, UL_TFC22	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC7, UL_TFC15, UL_TFC22,,	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 1272
8	DL_TFC2, DL_TFC5, DL_DSCH_TFC2	UL_TFC8, UL_TFC23	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC8, UL_TFC15, UL_TFC23,,	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 1272

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
9	DL_TFC1, DL_TFC4, DL_DSCH_TFC3	UL_TFC9, UL_TFC24	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC9, UL_TFC15, UL_TFC24,,	RB5: 39 RB6: 103 RB7: 60 RB8: 952	RB5: No data RB6: No data RB7: No data RB8: 2552
10	DL_TFC1, DL_TFC4, DL_DSCH_TFC3	UL_TFC10, UL_TFC25	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC10, UL_TFC15, UL_TFC25,,	RB5: 39 RB6: 103 RB7: 60 RB8: 952	RB5: 39 RB6: No data RB7: No data RB8: 2552
11	DL_TFC2, DL_TFC5, DL_DSCH_TFC3	UL_TFC11, UL_TFC26	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC11, UL_TFC15, UL_TFC26,,	RB5: 81 RB6: 103 RB7: 60 RB8: 952	RB5: 81 RB6: 103 RB7: 60 RB8: 2552
12	DL_TFC1, DL_TFC4, DL_DSCH_TFC4	UL_TFC12, UL_TFC27	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC12, UL_TFC15, UL_TFC27,,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: No data RB6: No data RB7: No data RB8: 5112
13	DL_TFC1, DL_TFC4, DL_DSCH_TFC4	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 5112
14	DL_TFC2, DL_TFC5, DL_DSCH_TFC4	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 5112
15	DL_TFC1, DL_TFC4, DL_DSCH_TFC5	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 7672
16	DL_TFC2, DL_TFC5, DL_DSCH_TFC5	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 7672

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
17	DL_TFC1, DL_TFC4, DL_DSCH_TFC6	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 10232
18	DL_TFC2, DL_TFC5, DL_DSCH_TFC6	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 10232
19	DL_TFC1, DL_TFC4, DL_DSCH_TFC7	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 12792
20	DL_TFC2, DL_TFC5, DL_DSCH_TFC7	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 12792
21	DL_TFC1, DL_TFC4, DL_DSCH_TFC8	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 15352
22	DL_TFC2, DL_TFC5, DL_DSCH_TFC8	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 15352
23	DL_TFC1, DL_TFC4, DL_DSCH_TFC9	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 17912
24	DL_TFC2, DL_TFC5, DL_DSCH_TFC9	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 17912

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
25	DL_TFC1, DL_TFC4, DL_DSCH_TFC1 0	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 20472
26	DL_TFC2, DL_TFC5, DL_DSCH_TFC1 0	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 20472
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, and UL_TFC15 are part of minimum set of TFCs. NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB8: Test data size has been set to DL TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit). The size of the uplink RLC SDU has been set such that it will be transmitted over each TTI, i.e. the uplink TFS size minus 8 bits (size of 7 bit length indicator and expansion bit).						

14.3.6.1.4 Test requirements

See 14.1.2a for definition of step B10 and step 15.

1. At step B10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15e and 15f the UE transmitted transport format shall be within the set of restricted TFCs as specified for the actual sub-test.
3. At step 15e and 15f the UE shall return
 - for sub-test 1: RLC SDUs on RB5 having the same content as the DL RLC SDUs sent by the SS; and no data shall be received on RB6, RB7 and RB8.
 - for sub-test 2: RLC SDUs on RB5, RB6 and RB7 having the same content as the DL RLC SDUs sent by the SS; and no data shall be received on RB8.
 - for sub-test 3: RLC SDUs on RB8 having the content equal to the first 312 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4: RLC SDUs on RB8 having the content equal to the first 312 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 5: RLC SDUs on RB8 having the content equal to the first 312 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 6: RLC SDUs on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 7: RLC SDUs on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 8: RLC SDUs on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 9: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.

- for sub-test 10: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
- for sub-test 11: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.
- for sub-test 12: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
- for sub-tests 13, 15, 17, 19, 21, 23 and 25: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
- for sub-tests 14, 16, 18, 20, 22, 24 and 26: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.

4. At step 15f UE shall send at least one MEASUREMENT REPORT message.

14.3.6.2 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / 10 ms TTI

14.3.6.2.1 Conformance requirement

See 14.2.4.1

14.3.6.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.6 for the downlink 20 ms TTI case.

14.3.6.2.3 Method of test

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x81(alt. 1x0)	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	2x336	N/A
	TF3, bits	N/A	N/A	N/A	3x336	N/A
	TF4, bits	N/A	N/A	N/A	4x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF1, TF0, TF0)
UL_TFC3	(TF0, TF0, TF0, TF1, TF0)
UL_TFC4	(TF1, TF0, TF0, TF1, TF0)
UL_TFC5	(TF2, TF1, TF1, TF1, TF0)
UL_TFC6	(TF0, TF0, TF0, TF2, TF0)
UL_TFC7	(TF1, TF0, TF0, TF2, TF0)
UL_TFC8	(TF2, TF1, TF1, TF2, TF0)
UL_TFC9	(TF0, TF0, TF0, TF3, TF0)
UL_TFC10	(TF1, TF0, TF0, TF3, TF0)
UL_TFC11	(TF2, TF1, TF1, TF3, TF0)
UL_TFC12	(TF0, TF0, TF0, TF4, TF0)
UL_TFC13	(TF1, TF0, TF0, TF4, TF0)
UL_TFC14	(TF2, TF1, TF1, TF4, TF0)
UL_TFC15	(TF0, TF0, TF0, TF0, TF1)
UL_TFC16	(TF1, TF0, TF0, TF0, TF1)
UL_TFC17	(TF2, TF1, TF1, TF0, TF1)
UL_TFC18	(TF0, TF0, TF0, TF1, TF1)
UL_TFC19	(TF1, TF0, TF0, TF1, TF1)
UL_TFC20	(TF2, TF1, TF1, TF1, TF1)
UL_TFC21	(TF0, TF0, TF0, TF2, TF1)
UL_TFC22	(TF1, TF0, TF0, TF2, TF1)
UL_TFC23	(TF2, TF1, TF1, TF2, TF1)
UL_TFC24	(TF0, TF0, TF0, TF3, TF1)
UL_TFC25	(TF1, TF0, TF0, TF3, TF1)
UL_TFC26	(TF2, TF1, TF1, TF3, TF1)
UL_TFC27	(TF0, TF0, TF0, TF4, TF1)
UL_TFC28	(TF1, TF0, TF0, TF4, TF1)
UL_TFC29	(TF2, TF1, TF1, TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (2048 kbps)
TFS	DSCH_TF0, bits	0x674
	DSCH_TF1, bits	1x674
	DSCH_TF2, bits	2x674
	DSCH_TF3, bits	4x674
	DSCH_TF4, bits	8x674
	DSCH_TF5, bits	12x674
	DSCH_TF6, bits	16x674
	DSCH_TF7, bits	20x674
	DSCH_TF8, bits	24x674
	DSCH_TF9, bits	28x674
	DSCH_TF10, bits	32x674
	DSCH_TF11, bits	36x674
	DSCH_TF12, bits	40x674
	DSCH_TF13, bits	44x674
	DSCH_TF14, bits	48x674
	DSCH_TF15, bits	52x674
	DSCH_TF16, bits	56x674
	DSCH_TF17, bits	60x674
DSCH_TF18, bits	64x674	

DSCH downlink TFCS:

TFCI	RB8
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5
DL_DSCH_TFC6	DSCH_TF6
DL_DSCH_TFC7	DSCH_TF7
DL_DSCH_TFC8	DSCH_TF8
DL_DSCH_TFC9	DSCH_TF9
DL_DSCH_TFC10	DSCH_TF10
DL_DSCH_TFC11	DSCH_TF11
DL_DSCH_TFC12	DSCH_TF12
DL_DSCH_TFC13	DSCH_TF13
DL_DSCH_TFC14	DSCH_TF14
DL_DSCH_TFC15	DSCH_TF15
DL_DSCH_TFC16	DSCH_TF16
DL_DSCH_TFC17	DSCH_TF17
DL_DSCH_TFC18	DSCH_TF18

Downlink TFS (For CS):

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)
TFS	TF0, bits	1x0	0x103	0x60
	TF1, bits	1x39	1x103	1x60
	TF2, bits	1x81	N/A	N/A
	TF3, bits	N/A	N/A	N/A
	TF4, bits	N/A	N/A	N/A
	TF5, bits	N/A	N/A	N/A

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
DL_TFC0	(TF0, TF0, TF0, DCH_TF0)
DL_TFC1	(TF1, TF0, TF0, DCH_TF0)
DL_TFC2	(TF2, TF1, TF1, DCH_TF0)
DL_TFC3	(TF0, TF0, TF0, DCH_TF1)
DL_TFC4	(TF1, TF0, TF0, DCH_TF1)
DL_TFC5	(TF2, TF1, TF1, DCH_TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1, DL_TFC4,	UL_TFC1, UL_TFC16	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC16,,	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC5,	UL_TFC2, UL_TFC17	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC17,,	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC1, DL_TFC4, DL_DSCH_TFC1	UL_TFC3, UL_TFC18	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC18,,	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: No data RB6: No data RB7: No data RB8: 632
4	DL_TFC1, DL_TFC4, DL_DSCH_TFC1	UL_TFC4, UL_TFC19	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC15, UL_TFC19,,	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: 632
5	DL_TFC2, DL_TFC5, DL_DSCH_TFC1	UL_TFC5, UL_TFC20	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC15, UL_TFC20,,	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: 632
6	DL_TFC1, DL_TFC4, DL_DSCH_TFC2	UL_TFC6, UL_TFC21	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC15, UL_TFC21,,	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 1272
7	DL_TFC1, DL_TFC4, DL_DSCH_TFC2	UL_TFC7, UL_TFC22	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC7, UL_TFC15, UL_TFC22,,	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 1272
8	DL_TFC2, DL_TFC5, DL_DSCH_TFC2	UL_TFC8, UL_TFC23	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC8, UL_TFC15, UL_TFC23,,	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 1272

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
9	DL_TFC1, DL_TFC4, DL_DSCH_TFC3	UL_TFC9, UL_TFC24	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC9, UL_TFC15, UL_TFC24,,	RB5: 39 RB6: 103 RB7: 60 RB8: 952	RB5: No data RB6: No data RB7: No data RB8: 2552
10	DL_TFC1, DL_TFC4, DL_DSCH_TFC3	UL_TFC10, UL_TFC25	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC10, UL_TFC15, UL_TFC25,,	RB5: 39 RB6: 103 RB7: 60 RB8: 952	RB5: 39 RB6: No data RB7: No data RB8: 2552
11	DL_TFC2, DL_TFC5, DL_DSCH_TFC3	UL_TFC11, UL_TFC26	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC11, UL_TFC15, UL_TFC26,,	RB5: 81 RB6: 103 RB7: 60 RB8: 952	RB5: 81 RB6: 103 RB7: 60 RB8: 2552
12	DL_TFC1, DL_TFC4, DL_DSCH_TFC4	UL_TFC12, UL_TFC27	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC12, UL_TFC15, UL_TFC27,,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: No data RB6: No data RB7: No data RB8: 5112
13	DL_TFC1, DL_TFC4, DL_DSCH_TFC4	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 5112
14	DL_TFC2, DL_TFC5, DL_DSCH_TFC4	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3,, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 5112
15	DL_TFC1, DL_TFC4, DL_DSCH_TFC5	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3,, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 7672
16	DL_TFC2, DL_TFC5, DL_DSCH_TFC5	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 7672

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
17	DL_TFC1, DL_TFC4, DL_DSCH_TFC6	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 10232
18	DL_TFC2, DL_TFC5, DL_DSCH_TFC6	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 10232
19	DL_TFC1, DL_TFC4, DL_DSCH_TFC7	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 12792
20	DL_TFC2, DL_TFC5, DL_DSCH_TFC7	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 12792
21	DL_TFC1, DL_TFC4, DL_DSCH_TFC8	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 15352
22	DL_TFC2, DL_TFC5, DL_DSCH_TFC8	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 15352
23	DL_TFC1, DL_TFC4, DL_DSCH_TFC9	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 17912
24	DL_TFC2, DL_TFC5, DL_DSCH_TFC9	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 17912

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
25	DL_TFC1, DL_TFC4, DL_DSCH_TFC1 0	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 20472
26	DL_TFC2, DL_TFC5, DL_DSCH_TFC1 0	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 20472
27	DL_TFC1, DL_TFC4, DL_DSCH_TFC1 1	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 23032
28	DL_TFC2, DL_TFC5, DL_DSCH_TFC1 1	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 23032
29	DL_TFC1, DL_TFC4, DL_DSCH_TFC1 2	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 25592
30	DL_TFC2, DL_TFC5, DL_DSCH_TFC1 2	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 25592
31	DL_TFC1, DL_TFC4, DL_DSCH_TFC1 3	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 28152
32	DL_TFC2, DL_TFC5, DL_DSCH_TFC1 3	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 28152

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
33	DL_TFC1, DL_TFC4, DL_DSCH_TFC1 4	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC13, UL_TFC15, UL_TFC28	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 30712
34	DL_TFC2, DL_TFC5, DL_DSCH_TFC1 4	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29, , ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 30712
35	DL_TFC1, DL_TFC4, DL_DSCH_TFC1 5	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28, , ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 33272
36	DL_TFC2, DL_TFC5, DL_DSCH_TFC1 5	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29, , ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 33272
37	DL_TFC1, DL_TFC4, DL_DSCH_TFC1 6	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28, , ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 35832
38	DL_TFC2, DL_TFC5, DL_DSCH_TFC1 6	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29, , ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 35832
39	DL_TFC1, DL_TFC4, DL_DSCH_TFC1 7	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28, , ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 38392
40	DL_TFC2, DL_TFC5, DL_DSCH_TFC1 7	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29, , ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 38392

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
41	DL_TFC1, DL_TFC4, DL_DSCH_TFC1 8	UL_TFC13, UL_TFC28	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28,, ,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 40952
42	DL_TFC2, DL_TFC5, DL_DSCH_TFC1 8	UL_TFC14, UL_TFC29	DL_DSCH_TFC0, DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC14, UL_TFC15, UL_TFC29,, ,	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 40952
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, and UL_TFC15 are part of minimum set of TFCs. NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB8: Test data size has been set to DL TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size has been set equal to the uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).						

14.3.6.2.4 Test requirements

See 14.1.2a for definition of step B10 and step 15.

1. At step B10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15e and 15f the UE transmitted transport format shall be within the set of restricted TFCs as specified for the actual sub-test.
3. At step 15e and 15f the UE shall return
 - for sub-test 1: RLC SDUs on RB5 having the same content as the DL RLC SDUs sent by the SS; and no data shall be received on RB6, RB7 and RB8.
 - for sub-test 2: RLC SDUs on RB5, RB6 and RB7 having the same content as the DL RLC SDUs sent by the SS; and no data shall be received on RB8.
 - for sub-test 3: RLC SDUs on RB8 having the content equal to the first 312 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4: RLC SDUs on RB8 having the content equal to the first 312 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 5: RLC SDUs on RB8 having the content equal to the first 312 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 6: RLC SDUs on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 7: RLC SDUs on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 8: RLC SDUs on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 9: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.

- for sub-test 10: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 11: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 12: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-tests 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39 and 41: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-tests 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40 and 42: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.
4. At step 15f UE shall send at least one MEASUREMENT REPORT message.

14.4 Combinations on SCCPCH

14.4.1 Stand-alone signalling RB for PCCH

Void

14.4.2 Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.2.

This radio bearer configuration is tested with three different SYSTEM INFORMATION (BCCH) configurations:

1. The contents of System Information Block type 5 / System Information Block type 5bis shall be as per the specific message content.

Two SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH and the second SCCPCH carries the FACH for Interactive/Background 32 kbps PS RAB and the FACH for SRBs on CCCH/ DCCH/ BCCH.

This configuration is verified in test case 14.4.2.1.

2. The contents of System Information Block type 5 / System Information Block type 5bis as specified in TS 34.108, clause 6.1.3.

Three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH and both the second and third SCCPCHs carry the FACH for Interactive/Background 32 kbps PS RAB and the FACH for SRBs on CCCH/ DCCH/ BCCH.

This configuration is verified in test case 14.4.2.2.

3. The contents of System Information Block type 5 / System Information Block type 5bis and 6 as specified in TS 34.108, clause 6.1.2.

Three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH. The second SCCPCH carries the FACH for CTCH (Cell Broadcast Service) and the FACH for SRBs on CCCH/ BCCH for idle mode UEs. The third SCCPCH carries the FACH for Interactive/Background 32 kbps PS RAB and the FACH for SRBs on CCCH/ DCCH/ BCCH for connected mode UEs.

This configuration is verified in test case 14.4.2.3.

14.4.2.1 One SCCPCH: Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

14.4.2.1.1 Conformance requirement

See 14.2.4.1.

14.4.2.1.2 Test purpose

To verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clauses 6.10.2.4.3.2 and 6.10.2.4.4.1 for the case when two SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH and the second SCCPCH carries the FACH for Interactive/Background 32 kbps PS RAB and the FACH for SRBs on CCCH/ DCCH/ BCCH.

To be able to test the downlink radio bearer using the UE loopback function, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.4.1 (Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH on PRACH) is used in uplink.

14.4.2.1.3 Method of Test

The contents of System Information Block type 5 / System Information Block type 5bis shall be as per the specific message content.

Uplink TFS:

	TF	RB7+SRB (32kbps on RACH)
TFS	TF0, bits	1x168
	TF1, bits	1x360

Uplink TFCS:

TFCI	RB7+SRB
UL_TFC0	TF0
UL_TFC1	TF1

Downlink TFS:

		SRBs	RB7 (32 kbps)
TFS	TF0, bits	0x168	0x360
	TF1, bits	1x168	1x360
	TF2, bits	2x168	N/A

Downlink TFCS:

TFCI	(SRB, RB7)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF0, TF1)
DL_TFC4	(TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	RB7: 312 bits	RB7: 312 bits
NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB7: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size parameter has been set to the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit).					

See 14.1.1 for test procedure.

Specific Message Contents

Use the default parameter values for the system information block 5 with the same type specified in clause 6.1.1 of TS 34.108, with the following exceptions

Information Element	Value/remark
- SIB6 indicator	FALSE

14.4.2.1.4 Test Requirements

See 14.1.1 for definition of step 15

- At step 15 the UE transmitted transport format shall be RB7/TF1 (1x360).
- At step 15 the UE shall return an RLC SDU on RB7 having the same content as sent by SS

14.4.2.2 Two SCCPCHs: Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

14.4.2.2.1 Conformance requirement

See 14.2.4.1.

14.4.2.2.2 Test purpose

To verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clauses 6.10.2.4.3.2 and 6.10.2.4.4.1 for the case when three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH and both the second and third SCCPCHs carry the FACH for Interactive/Background 32 kbps PS RAB and the FACH for SRBs on CCCH/ DCCH/ BCCH.

To be able to test the downlink radio bearer using the UE loopback function, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.4.1 (Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH on PRACH) is used in uplink.

14.4.2.2.3 Method of Test

The contents of System Information Block type 5 / System Information Block type 5bis shall be as specified in TS 34.108, clause 6.1.3.

Uplink TFS:

	TF	RB7+SRB (32kbps on RACH)
TFS	TF0, bits	1x168
	TF1, bits	1x360

Uplink TFCS:

TFCI	RB7+SRB
UL_TFC0	TF0
UL_TFC1	TF1

Downlink TFS:

		SRBs	RB7 (32 kbps)
TFS	TF0, bits	0x168	0x360
	TF1, bits	1x168	1x360
	TF2, bits	2x168	N/A

Downlink TFCS:

TFCI	(SRB, RB7)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF0, TF1)
DL_TFC4	(TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS under test	Uplink TFCS Under test	Implicitly tested	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	RB7: 312 bits	RB7: 312 bits
NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB7: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size parameter has been set to the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit).					

See 14.1.1 for test procedure.

14.4.2.2.4 Test Requirements

See 14.1.1 for definition of step 15

- At step 15 the UE transmitted transport format shall be RB7/TF1 (1x360).
- At step 15 the UE shall return an RLC SDU on RB7 having the same content as sent by SS

14.4.2.3 One SCCPCH/connected mode: Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

14.4.2.3.1 Conformance requirement

See 14.2.4.1.

14.4.2.3.2 Test purpose

To verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clauses 6.10.2.4.3.2 and 6.10.2.4.4.1 for the case when three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH. The second SCCPCH carries the FACH for CTCH (Cell Broadcast Service) and the FACH for SRBs on CCCH/ BCCH for idle mode UEs. The third SCCPCH carries the FACH for Interactive/Background 32 kbps PS RAB and the FACH for SRBs on CCCH/ DCCH/ BCCH for connected mode UEs.

To be able to test the downlink radio bearer using the UE loopback function, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.4.1 (Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH on PRACH) is used in uplink.

14.4.2.3.3 Method of Test

The contents of System Information Block type 5 / System Information Block type 5bis and 6 shall be as specified in TS 34.108, clause 6.1.2.

Uplink TFS:

	TF	RB7+SRB (32kbps on RACH)
TFS	TF0, bits	1x168
	TF1, bits	1x360

Uplink TFCS:

TFCI	RB7+SRB
UL_TFC0	TF0
UL_TFC1	TF1

Downlink TFS:

		SRBs	RB7 (32 kbps)
TFS	TF0, bits	0x168	0x360
	TF1, bits	1x168	1x360
	TF2, bits	2x168	N/A

Downlink TFCS:

TFCI	(SRB, RB7)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF0, TF1)
DL_TFC4	(TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	RB7: 312 bits	RB7: 312 bits
NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB7: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size parameter has been set to the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit).					

See 14.1.1 for test procedure.

14.4.2.3.4 Test Requirements

See 14.1.1 for definition of step 15

- At step 15 the UE transmitted transport format shall be RB7/TF1 (1x360).

2. At step 15 the UE shall return an RLC SDU on RB7 having the same content as sent by SS

14.4.2a Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.2a.

This radio bearer configuration is tested with three different SYSTEM INFORMATION (BCCH) configurations:

1. The contents of System Information Block type 5 / System Information Block type 5bis shall be as per the message specific content.

Two SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH and the second SCCPCH carries the FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH.

This configuration is verified in test case 14.4.2a.1.

2. The contents of System Information Block type 5 / System Information Block type 5bis as specified in TS 34.108, clause 6.1.3.

Three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH and both the second and third SCCPCHs carry the FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH.

This configuration is verified in test case 14.4.2a.2.

3. The contents of System Information Block type 5 / System Information Block type 5bis and 6 as specified in TS 34.108, clause 6.1.2.

Three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH. The second SCCPCH carries the FACH for CTCH (Cell Broadcast Service) and the FACH for SRBs on CCCH/ BCCH for idle mode UEs. The third SCCPCH carries the FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH for connected mode UEs.

This configuration is verified in test case 14.4.2a.3.

Specific Message Content for Radio Bearer Setup message to be used for these test cases:

Use the RADIO BEARER SETUP message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
- RAB information for setup	
- RAB info	(AM DTCH for PS domain)
- RAB identity	0000 0101B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	PS domain
- NAS Synchronization Indicator	Not Present
- Re-establishment timer	useT315
- RB information to setup	
- RB identity	20
- PDCP Info	Not Present
- CHOICE RLC info type	RLC info
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	2 RBmuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	7
- CHOICE RLC size list	Configured
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter

Information Element	Value/remark
- MAC logical channel priority	Set
- Downlink RLC logical channel info	8
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RAB identity	0000 0110B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	PS domain
- NAS Synchronization Indicator	Not Present
- Re-establishment timer	useT315
- RB information to setup	
- RB identity	24
- PDCP info	Not Present
- CHOICE RLC info type	RLC info
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	2 RBmuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	10
- CHOICE RLC size list	Configured
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	10
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	10
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set

Information Element	Value/remark
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	10

14.4.2a.1 One SCCPCH: Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

14.4.2a.1.1 Conformance requirement

See 14.2.4.1.

14.4.2a.1.2 Test purpose

To verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.2a and 6.10.2.4.4.2 for the case when two SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH and the second SCCPCH carries the FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH.

To be able to test the downlink radio bearer using the UE loopback function, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.4.2 (Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH on PRACh) is used in uplink.

14.4.2a.1.3 Method of Test

The contents of System Information Block type shall be as per the specific message content below.

See 14.1.1 for test procedure.

NOTE The test procedure for single radio bearer configurations is used as there are no uplink transport format combination for simultaneous data transmission on the PS radio bearers, nor any transport format combination for simultaneous data transmission and signalling.

Uplink TFS:

	TF	RB7+RB8+SRB (2x32 kbps on RACH)
TFS	TF0, bits	1x168
	TF1, bits	1x360

Uplink TFCS:

TFCI	RB7 + RB8
UL_TFC0	TF0
UL_TFC1	TF1

Downlink TFS:

		SRBs	RB7 + RB8 (2x32 kbps)
TFS	TF0, bits	0x168	0x360
	TF1, bits	1x168	1x360
	TF2, bits	2x168	N/A

Downlink TFCS:

TFCI	(SRB, RB7+RB8)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF0, TF1)
DL_TFC4	(TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	RB7: 312 bits RB8: 312 bits	RB7: 312 bits RB8: No data
2	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	RB7: 312 bits RB8: 312 bits	RB7: No data RB8: 312 bits
NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB7 and RB8: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size parameter has been set to the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit).					

Specific Message Contents

Use the default parameter values for the system information block 5 with the same type specified in clause 6.1.1 of TS 34.108, with the following exceptions

Information Element	Value/remark
- SIB6 indicator	FALSE

14.4.2a.1.4 Test Requirements

See 14.1.1 for definition of step 15

1. At step 15 the UE transmitted transport format shall be TF1 (1x360).
2. At step 15 the UE shall return
 - for sub test 1: RLC SDUs on RB7 having the same content as sent by SS
 - for sub test 2: RLC SDUs on RB8 having the same content as sent by SS

14.4.2a.2 Two SCCPCHs: Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

14.4.2a.2.1 Conformance requirement

See 14.2.4.1.

14.4.2a.2.2 Test purpose

To verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clauses 6.10.2.4.3.2 and 6.10.2.4.4.2 for the case when three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH and both the second and third SCCPCHs carry the FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH.

To be able to test the downlink radio bearer using the UE loopback function, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.4.2 (Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH on PRACH) is used in uplink.

14.4.2a.2.3 Method of Test

The contents of System Information Block type 5 / System Information Block type 5bis shall be as specified in TS 34.108, clause 6.1.3.

See 14.1.1 for test procedure.

NOTE The test procedure for single radio bearer configurations is used as there are no uplink transport format combination for simultaneous data transmission on the PS radio bearers, nor any transport format combination for simultaneous data transmission and signalling.

Uplink TFS:

	TF	RB7 + RB8 (2x32 kbps on RACH)
TFS	TF0, bits	1x168
	TF1, bits	1x360

Uplink TFCS:

TFCSI	RB7 + RB8
UL_TFC0	TF0
UL_TFC1	TF1

Downlink TFS:

		SRBs	RB7 + RB8 (2x32 kbps)
TFS	TF0, bits	0x168	0x360
	TF1, bits	1x168	1x360
	TF2, bits	2x168	N/A

Downlink TFCS:

TFCSI	(SRB, RB7+RB8)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF0, TF1)
DL_TFC4	(TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	RB7: 312 bits RB8: 312 bits	RB7: 312 bits RB8: No data
2	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	RB7: 312 bits RB8: 312 bits	RB7: No data RB8: 312 bits

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB7 and RB8: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size parameter has been set to the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit).

14.4.2a.2.4 Test Requirements

See 14.1.1 for definition of step 15

1. At step 15 the UE transmitted transport format shall be TF1 (1x360).
2. At step 15 the UE shall return
 - for sub test 1: RLC SDUs on RB7 having the same content as sent by SS
 - for sub test 2: RLC SDUs on RB8 having the same content as sent by SS

14.4.2a.3 One SCCPCH/connected mode: Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

14.4.2a.3.1 Conformance requirement

See 14.2.4.1.

14.4.2a.3.2 Test purpose

To verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clauses 6.10.2.4.3.2 and 6.10.2.4.4.2 for the case when three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH. The second SCCPCH carries the FACH for CTCH (Cell Broadcast Service) and the FACH for SRBs on CCCH/ BCCH for idle mode UEs. The third SCCPCH carries the FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH for connected mode UEs.

To be able to test the downlink radio bearer using the UE loopback function, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.4.2 (Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH on PRACH) is used in uplink.

14.4.2a.3.3 Method of Test

The contents of System Information Block type 5 / System Information Block type 5bis and 6 shall be as specified in TS 34.108, clause 6.1.2.

See 14.1.1 for test procedure.

NOTE The test procedure for single radio bearer configurations is used as there are no uplink transport format combination for simultaneous data transmission on the PS radio bearers, nor any transport format combination for simultaneous data transmission and signalling.

Uplink TFS:

	TFI	RB7+RB8+SRB (2x32 kbps on RACH)
TFS	TF0, bits	1x168
	TF1, bits	1x360

Uplink TFCS:

TFCI	RB7 + RB8
UL_TFC0	TF0
UL_TFC1	TF1

Downlink TFS:

		SRBs	RB7 + RB8 (2x32 kbps)
TFS	TF0, bits	0x168	0x360
	TF1, bits	1x168	1x360
	TF2, bits	2x168	N/A

Downlink TFCS:

TFCI	(SRB, RB7+RB8)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF0, TF1)
DL_TFC4	(TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	RB7: 312 bits RB8: 312 bits	RB7: 312 bits RB8: No data
2	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	RB7: 312 bits RB8: 312 bits	RB7: No data RB8: 312 bits
NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB7 and RB8: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size parameter has been set to the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit).					

14.4.2a.3.4 Test Requirements

- At step 15 the UE transmitted transport format shall be TF1 (1x360).
- At step 15 the UE shall return
 - for sub test 1: RLC SDUs on RB7 having the same content as sent by SS
 - for sub test 2: RLC SDUs on RB8 having the same content as sent by SS

14.4.3 Interactive/Background 32 kbps RAB + SRBs for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH

14.4.3.1 Conformance requirement

See 14.2.4.1.

14.4.3.2 Test purpose

To verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clauses 6.10.2.4.3.3 and 6.10.2.4.4.1 for the case when one SCCPCH is used in this SYSTEM INFORMATION (BCCH) configuration. The SCCPCH carries the PCH, the FACH for Interactive/Background 32 kbps PS RAB and the FACH for SRBs on CCCH/ DCCH/ BCCH.

To be able to test the downlink radio bearer using the UE loopback function, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.4.1 (Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH on P-RACH) is used in uplink.

14.4.3.3 Method of Test

The contents of System Information Block type 5 / System Information Block type 5bis and 6 shall be as specified in TS 34.108, clause 6.1.

Uplink TFS:

	TFI	RB8 (32kbps on RACH)
TFS	TF0, bits	1x168
	TF1, bits	1x360

Uplink TFCS:

TFCI	RB8
UL_TFC0	TF0
UL_TFC1	TF1

Downlink TFS:

		PCCH	SRBs	RB8 (32 kbps)
TFS	TF0, bits	0x240	0x168	0x360
	TF1, bits	1x240	1x168	1x360
	TF2, bits	N/A	2x168	N/A

Downlink TFCS:

TFCI	(PCCH, SRB, RB8)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0)
DL_TFC2	(TF0, TF1, TF0)
DL_TFC3	(TF1, TF1, TF0)
DL_TFC4	(TF0, TF2, TF0)
DL_TFC5	(TF1, TF2, TF0)
DL_TFC6	(TF0, TF0, TF1)
DL_TFC7	(TF0, TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS under test	Uplink TFCS Under test	Implicitly tested	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC6	UL_TFC1	DL_TFC0, UL_TFC0	RB8: 312 bits	RB8: 312 bits
NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB8: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size parameter has been set to the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit).					

See 14.1.1 for test procedure.

14.4.3.4 Test requirements

See 14.1.1 for definition of step 15

- At step 15 the UE transmitted transport format shall be RB8/TF1 (1x360).
- At step 15 the UE shall return an RLC SDU on RB8 having the same content as sent by SS

14.4.4 RB for CTCH + SRB for CCCH +SRB for BCCH

14.4.4.1 Definition and applicability

Applicable only for a UE supporting Cell Broadcast Services (CBS) as a type of Broadcast/Multicast Services.

It shall be possible to indicate the reception of certain CBS message contents carried with certain activated CG message types in a clear way on UE side.

14.4.4.2 Conformance Requirement

See 14.2.4.1 and 7.4.2.1.2.

14.4.4.3 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.4 for the case when three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH. The second SCCPCH carries the FACH for CTCH (Cell Broadcast Service) and the FACH for SRBs on CCCH/ BCCH for idle mode UEs. The third SCCPCH carries the FACH for Interactive/Background 32 kbps PS RAB and the FACH for SRBs on CCCH/ DCCH/ BCCH for connected mode UEs.

To verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clauses 6.10.2.4.3.3. Data transfer on CTCH is tested similar to testing BMC for a UE in idle mode as specified in TS 34.123-1, clause 7.4.2, data transfer on CCCH is tested by establishing a RRC connection.

14.4.4.4 Method of Test

Initial conditions:

The contents of System Information Block type 1 shall be as per the specific message content.

The contents of System Information Block type 5 / System Information Block type 5bis and 6 shall be as specified in TS 34.108, clause 6.1.2.

The UE is RRC idle mode, the BMC entity is established.

The CB message ID stored on the SIM shall be known for this test (parameter for CBS PDUs). The CBS data type shall be allocated and activated in the UE.

Related ICS/IXIT Statement(s)

As in clause 7.4.2.1.4

Uplink TFS:

	TFI	RB7+SRB (32 kbps on RACH)
TFS	TF0, bits	1x168
	TF1, bits	1x360

Uplink TFCS:

TFCI	RB7+SRB
UL_TFC0	TF0
UL_TFC1	TF1

Downlink TFS:

		RB7 (32 kbps on CTCH)	SRBs
TFS	TF0, bits	0x168	0x168
	TF1, bits	1x168	1x168

Downlink TFCS:

TFCI	(RB7, SRB)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF0, TF1)

Test Procedure:

- The UE in RRC Idle mode is triggered to wait for the next system information. The UE is activated to receive CBS messages.
- The UE and the SS have configured their RLC, MAC, and PHYs layers with all CB related system information.
- The SS sends the CVS message containing an activated CGS message type according to CB-Data 1 to the UE; this shall be repeated for CPREP times (indicated by the parameter "repetition period").
- The UE indicates in an unambiguous way, that this message was received.
- Steps 1 – 4 in the Expected sequence are followed by the steps 2 – 6 of the test procedure according to clause 14.1.1.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	SYSTEM INFORMATION	
2				The SS waits for about 10 s to make sure, that the UE is configured to receive CBS data
3		←	BMC CBS Message	Activated CBS message with CB Data 1 message content as described by the manufacturer. This message shall be repeated "CPREP" times, Parameter: - Message_ID, - Serial-No, - Data coding scheme, - CB-Data 1,
4				After having received the BMC CBS message the UE shall indicate the reception of CB Data 1 in a clear way.

Specific Message Contents

Use the default parameter values for the System Information Block type 1 with the same type specified in clause 6.1.0b of TS 34.108, with the following exceptions

Information Element	Conditions	Value/remark
- CN domain identity - CHOICE CN Type - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain specific DRX cycle length coefficient		PS GSM-MAP 05 00H 9
- CN domain identity - CHOICE CN Type - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain specific DRX cycle length coefficient		CS GSM-MAP 1E 01H 9

14.4.4.5 Test Requirements

At step 4 in the Expected sequence, the UE shall store and decode a received activated CBS message.

At step e of the test procedure according to clause 14.1.1 the RRC Connection shall be established.

14.4.5 64.8kbps RB for MTCH with 80 ms TTI / MBMS Broadcast Service

14.4.5.1 Conformance Requirement

The UE shall correctly receive user data on the MTCH from the peer to peer RLC entity according to the configured MTCH.

Reference(s)

3GPP TS 25.2xx series (Physical Layer)

3GPP TS 25.321 (MAC)

3GPP TS 25.322 (RLC)

3GPP TS 25.331 (RRC)

14.4.5.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.5.

14.4.5.3 Method of Test

Initial Condition

The UE is interested in the broadcast service to be provided by the SS (included in MBMS_ACTIVATED_SERVICES variable). Related ICS/IXIT statements

MBMS Broadcast service application available on UE Yes / No

Test Procedure

See 14.1.5 for test procedure.

Downlink TFS:

	TF	RB for MTCH (64.8 kbps)
TFS	TF0, bits	0x664
	TF1, bits	1x664
	TF2, bits	2x664
	TF3, bits	3x664
	TF4, bits	4x664
	TF5, bits	5x664
	TF6, bits	6x664
	TF7, bits	7x664
	TF8, bits	8x664

Downlink TFCS:

TFCI	RB for MTCH (64.8 kbps)
DL_TFC0	(TF0)
DL_TFC1	(TF1)
DL_TFC2	(TF2)
DL_TFC3	(TF3)
DL_TFC4	(TF4)
DL_TFC5	(TF5)
DL_TFC6	(TF6)
DL_TFC7	(TF7)
DL_TFC8	(TF8)

Sub-tests:

Sub-test	Downlink TFCS Under test	Implicitly tested	Test data size (bits) (note 1)
1	DL_TFC1	DL_TFC0	640
2	DL_TFC2	DL_TFC0	1288
3	DL_TFC3	DL_TFC0	1936
4	DL_TFC4	DL_TFC0	2584
5	DL_TFC5	DL_TFC0	3232
6	DL_TFC6	DL_TFC0	3880
7	DL_TFC7	DL_TFC0	4528
8	DL_TFC8	DL_TFC0	5176

NOTE 1: Test data size (=DL SDU size) has been set to the N*payload size of the DL TF under test minus 16 bits (size of 2, 7 bit length indicator and expansion bit), where N is the number of transport blocks in the transport format combination under test.

14.4.5.4 Test Requirements

See 14.1.5 for definition of steps 8 and 12.

1. For the first sub-test: At step 8 the UE shall send a UE TEST LOOP MODE 3 RLC SDU COUNTER RESPONSE with a RLC SDU counter value greater than zero.
2. For the second and following sub-tests: At step 12 the UE shall send a UE TEST LOOP MODE 3 RLC SDU COUNTER RESPONSE with a RLC SDU counter value greater than the reported value at previous sub-test.

NOTE: For UE in UE test loop mode 3 then the RLC SDU counter value is only reset upon reception of CLOSE UE TEST LOOP message configuring UE test loop mode 3. As the generic test procedure in section 14.1.5 runs through all sub-tests without deactivating the UE test mode then the SS needs to check the reported counter value against the value reported at the previous sub-test.

14.4.5m 64.8kbps RB for MTCH with 80 ms TTI / MBMS Multicast Service

14.4.5m.1 Conformance Requirement

Same conformance requirement as in clause 14.4.5.1.

14.4.5m.2 Test purpose

Same test purpose as in clause 14.4.5.2.

14.4.5m.3 Method of Test

Initial Condition

The UE has joined the multicast service to be provided by the SS (included in MBMS_ACTIVATED_SERVICES variable).

Related ICS/IXIT statements

MBMS Multicast service application available on UE Yes / No

Test Procedure

Same test procedure as in clause 14.4.5.3

14.4.5m.4 Test Requirements

Same test requirements as in clause 14.4.5.4.

14.4.5n 64.8kbps RB for MTCH with 80 ms TTI / MBMS Multicast Service in MBSFN mode

14.4.5n.1 Conformance Requirement

Same conformance requirement as in clause 14.4.5.1.

14.4.5n.2 Test purpose

Same test purpose as in clause 14.4.5.2.

14.4.5n.3 Method of Test

Initial conditions

System Simulator:

- MBSFN carrier: 1 cell, Cell 31 (PLMN1). In addition to broadcasting System Information, MCCH messages are transmitted by the SS on Cell 31 using MBMS configuration C1 and Default 1 MCCH scheduling (No ongoing session) according to subclause 11.2 of TS 34.108.
- Unicast carrier : 1 cell, Cell 1 with default parameters.

User Equipment:

- On the unicast carrier cell the UE is in registered Idle Mode on PS (state 3) if the UE only supports PS domain or registered Idle Mode on CS/PS (state 7) if the UE supports both CS and PS domains, as specified in clause 7.2.2 of TS 34.108.
- The UE is in MBSFN Idle mode with one activated service as specified in clause 7.6.4 of TS 34.108. The UE has selected (i.e. it is included in MBMS_ACTIVATED_SERVICES variable) a national service for which a session will start on MBSFN Cell 31 (see TS 34.108 clause 11.2.4) during the test.

Related ICS/IXIT statements

- MBMS Broadcast services in MBSFN mode application available on UE Yes/No.
- Support of transmit and receive functions available on UE Yes/No.
- Support of MBSFN receive only function available on UE Yes/No.

Test Procedure

See 14.1.5m for test procedure.

Same Downlink TFS, Downlink TFCS and Sub-tests as in clause 14.4.5.3

14.4.5n.4 Test Requirements

Same test requirements as in clause 14.4.5.4.

14.4.6 129.6 kbps RB for MTCH with 80 ms TTI / MBMS Broadcast Service

14.4.6.1 Conformance Requirement

See 14.4.5.1.

14.4.6.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.6.

14.4.6.3 Method of Test

Initial Condition

The UE is interested in the broadcast service to be provided by the SS (included in MBMS_ACTIVATED_SERVICES variable).

Related ICS/IXIT statements

MBMS Broadcast service application available on UE Yes / No

Test Procedure

See 14.1.5 for test procedure.

Downlink TFS:

	TF	RB for MTCH (129.6 kbps kbps)
TFS	TF0, bits	0x664
	TF1, bits	1x664
	TF2, bits	2x664
	TF3, bits	3x664
	TF4, bits	4x664
	TF5, bits	5x664
	TF6, bits	6x664
	TF7, bits	7x664
	TF8, bits	8x664
	TF9, bits	9x664
	TF10, bits	10x664
	TF11, bits	11x664
	TF12, bits	12x664
	TF13, bits	13x664
	TF14, bits	14x664
	TF15, bits	15x664
TF16, bits	16x664	

Downlink TFCS:

TFCI	RB for MTCH (129.6 kbps)
DL_TFC0	(TF0)
DL_TFC1	(TF1)
DL_TFC2	(TF2)
DL_TFC3	(TF3)
DL_TFC4	(TF4)
DL_TFC5	(TF5)
DL_TFC6	(TF6)
DL_TFC7	(TF7)
DL_TFC8	(TF8)
DL_TFC9	(TF9)
DL_TFC10	(TF10)
DL_TFC11	(TF11)
DL_TFC12	(TF12)
DL_TFC13	(TF13)
DL_TFC14	(TF14)
DL_TFC15	(TF15)
DL_TFC16	(TF16)

Sub-tests:

Sub-test	Downlink TFCS Under test	Implicitly tested	Test data size (bits) (note 1)
1	DL_TFC1	DL_TFC0	640
2	DL_TFC2	DL_TFC0	1288
3	DL_TFC3	DL_TFC0	1936
4	DL_TFC4	DL_TFC0	2584
5	DL_TFC5	DL_TFC0	3232
6	DL_TFC6	DL_TFC0	3880
7	DL_TFC7	DL_TFC0	4528
8	DL_TFC8	DL_TFC0	5176
9	DL_TFC9	DL_TFC0	5824
10	DL_TFC10	DL_TFC0	6472
11	DL_TFC11	DL_TFC0	7120
12	DL_TFC12	DL_TFC0	7768
13	DL_TFC13	DL_TFC0	8416
14	DL_TFC14	DL_TFC0	9064
15	DL_TFC15	DL_TFC0	9712
16	DL_TFC16	DL_TFC0	10360

NOTE 1: Test data size (=DL SDU size) has been set to the N*payload size of the DL TF under test minus 16 bits (size of 2, 7 bit length indicator and expansion bit), where N is the number of transport blocks in the transport format combination under test.

14.4.6.4 Test Requirements

See 14.1.5 for definition of steps 8 and 12.

1. For the first sub-test: At step 8 the UE shall send a UE TEST LOOP MODE 3 RLC SDU COUNTER RESPONSE with a RLC SDU counter value greater than zero.
2. For the second and following sub-tests: At step 12 the UE shall send a UE TEST LOOP MODE 3 RLC SDU COUNTER RESPONSE with a RLC SDU counter value greater than the reported value at previous sub-test.

NOTE: For UE in UE test loop mode 3 then the RLC SDU counter value is only reset upon reception of CLOSE UE TEST LOOP message configuring UE test loop mode 3. As the generic test procedure in section 14.1.5 runs through all sub-tests without deactivating the UE test mode then the SS needs to check the reported counter value against the value reported at the previous sub-test.

14.4.6m 129.6 kbps RB for MTCH with 80 ms TTI / MBMS Multicast Service

14.4.6m.1 Conformance Requirement

Same conformance requirement as in clause 14.4.6.1.

14.4.6m.2 Test purpose

Same test purpose as in clause 14.4.6.2.

14.4.6m.3 Method of Test

Initial Condition

The UE has joined the multicast service to be provided by the SS (included in MBMS_ACTIVATED_SERVICES variable).

Related ICS/IXIT statements

MBMS Multicast service application available on UE Yes / No

Test Procedure

Same test procedure as in clause 14.4.6.3.

14.4.6m.4 Test Requirements

Same test requirements as in clause 14.4.6.4.

14.4.6n 129.6 kbps RB for MTCH with 80 ms TTI / MBMS Broadcast Service in MBSFN mode

14.4.6n.1 Conformance Requirement

Same conformance requirement as in clause 14.4.6.1.

14.4.6n.2 Test purpose

Same test purpose as in clause 14.4.6.2.

14.4.6n.3 Method of Test

Initial conditions

System Simulator:

- MBSFN carrier: 1 cell, Cell 31 (PLMN1). In addition to broadcasting System Information, MCCH messages are transmitted by the SS on Cell 31 using MBMS configuration C1 and Default 1 MCCH scheduling (No ongoing session) according to subclause 11.2 of TS 34.108.
- Unicast carrier : 1 cell, Cell 1 with default parameters.

User Equipment:

- On the unicast carrier cell the UE is in registered Idle Mode on PS (state 3) if the UE only supports PS domain or registered Idle Mode on CS/PS (state 7) if the UE supports both CS and PS domains, as specified in clause 7.2.2 of TS 34.108.
- The UE is in MBSFN Idle mode with one activated service as specified in clause 7.6.4 of TS 34.108. The UE has selected (i.e. it is included in MBMS_ACTIVATED_SERVICES variable) a national service for which a session will start on MBSFN Cell 31 (see TS 34.108 clause 11.2.4) during the test.

Related ICS/IXIT statements

- MBMS Broadcast services in MBSFN mode application available on UE Yes/No.
- Support of transmit and receive functions available on UE Yes/No.
- Support of MBSFN receive only function available on UE Yes/No.

Test Procedure

See 14.1.5m for test procedure.

Same Downlink TFS, Downlink TFCS and Sub-tests as in clause 14.4.6.3

14.4.6n.4 Test Requirements

Same test requirements as in clause 14.4.6.4.

14.4.7 259.2 kbps RB for MTCH with 40 ms TTI / MBMS Broadcast Service

14.4.7.1 Conformance Requirement

See 14.4.5.1.

14.4.7.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.7.

14.4.7.3 Method of Test

Initial Condition

The UE is interested in the broadcast service to be provided by the SS (included in MBMS_ACTIVATED_SERVICES variable). Related ICS/IXIT statements

MBMS Broadcast service application available on UE Yes / No

Test Procedure

See 14.1.5 for test procedure.

Downlink TFS:

	TFI	RB for MTCH (259.2 kbps kbps)
TFS	TF0, bits	0x664
	TF1, bits	1x664
	TF2, bits	2x664
	TF3, bits	3x664
	TF4, bits	4x664
	TF5, bits	5x664
	TF6, bits	6x664
	TF7, bits	7x664
	TF8, bits	8x664
	TF9, bits	9x664
	TF10, bits	10x664
	TF11, bits	11x664
	TF12, bits	12x664
	TF13, bits	13x664
	TF14, bits	14x664
	TF15, bits	15x664
TF16, bits	16x664	

Downlink TFCS:

TFCI	RB for MTCH (259.2 kbps)
DL_TFC0	(TF0)
DL_TFC1	(TF1)
DL_TFC2	(TF2)
DL_TFC3	(TF3)
DL_TFC4	(TF4)
DL_TFC5	(TF5)
DL_TFC6	(TF6)
DL_TFC7	(TF7)
DL_TFC8	(TF8)
DL_TFC9	(TF9)
DL_TFC10	(TF10)
DL_TFC11	(TF11)
DL_TFC12	(TF12)
DL_TFC13	(TF13)
DL_TFC14	(TF14)
DL_TFC15	(TF15)
DL_TFC16	(TF16)

Sub-tests:

Sub-test	Downlink TFCS Under test	Implicitly tested	Test data size (bits) (note 1)
1	DL_TFC1	DL_TFC0	640
2	DL_TFC2	DL_TFC0	1288
3	DL_TFC3	DL_TFC0	1936
4	DL_TFC4	DL_TFC0	2584
5	DL_TFC5	DL_TFC0	3232
6	DL_TFC6	DL_TFC0	3880
7	DL_TFC7	DL_TFC0	4528
8	DL_TFC8	DL_TFC0	5176
9	DL_TFC9	DL_TFC0	5824
10	DL_TFC10	DL_TFC0	6472
11	DL_TFC11	DL_TFC0	7120
12	DL_TFC12	DL_TFC0	7768
13	DL_TFC13	DL_TFC0	8416
14	DL_TFC14	DL_TFC0	9064
15	DL_TFC15	DL_TFC0	9712
16	DL_TFC16	DL_TFC0	10360

NOTE 1: Test data size (=DL SDU size) has been set to the N*payload size of the DL TF under test minus 16 bits (size of 2, 7 bit length indicator and expansion bit), where N is the number of transport blocks in the transport format combination under test.

14.4.7.4 Test Requirements

See 14.1.5 for definition of steps 8 and 12.

1. For the first sub-test: At step 8 the UE shall send a UE TEST LOOP MODE 3 RLC SDU COUNTER RESPONSE with a RLC SDU counter value greater than zero.
2. For the second and following sub-tests: At step 12 the UE shall send a UE TEST LOOP MODE 3 RLC SDU COUNTER RESPONSE with a RLC SDU counter value greater than the reported value at previous sub-test.

NOTE: For UE in UE test loop mode 3 then the RLC SDU counter value is only reset upon reception of CLOSE UE TEST LOOP message configuring UE test loop mode 3. As the generic test procedure in section 14.1.5 runs through all sub-tests without deactivating the UE test mode then the SS needs to check the reported counter value against the value reported at the previous sub-test.

14.4.7m 259.2 kbps RB for MTCH with 40 ms TTI / MBMS Multicast Service

14.4.7m.1 Conformance Requirement

Same conformance requirement as in clause 14.4.7.1.

14.4.7m.2 Test purpose

Same test purpose as in clause 14.4.7.2.

14.4.7m.3 Method of Test

Initial Condition

The UE has joined the multicast service to be provided by the SS (included in MBMS_ACTIVATED_SERVICES variable).

Related ICS/IXIT statements

MBMS Multicast service application available on UE Yes / No

Test Procedure

Same test procedure as in clause 14.4.7.3.

14.4.7m.4 Test Requirements

Same test requirements as in clause 14.4.7.4.

14.4.7n 259.2 kbps RB for MTCH with 40 ms TTI / MBMS Broadcast Service in MBSFN mode

14.4.7n.1 Conformance Requirement

Same conformance requirement as in clause 14.4.7.1.

14.4.7n.2 Test purpose

Same test purpose as in clause 14.4.7.2.

14.4.7n.3 Method of Test

Initial conditions

System Simulator:

- MBSFN carrier: 1 cell, Cell 31 (PLMN1). In addition to broadcasting System Information, MCCH messages are transmitted by the SS on Cell 31 using MBMS configuration C1 and Default 1 MCCH scheduling (No ongoing session) according to subclause 11.2 of TS 34.108.
- Unicast carrier : 1 cell, Cell 1 with default parameters.

User Equipment:

- On the unicast carrier cell the UE is in registered Idle Mode on PS (state 3) if the UE only supports PS domain or registered Idle Mode on CS/PS (state 7) if the UE supports both CS and PS domains, as specified in clause 7.2.2 of TS 34.108.
- The UE is in MBSFN Idle mode with one activated service as specified in clause 7.6.4 of TS 34.108. The UE has selected (i.e. it is included in MBMS_ACTIVATED_SERVICES variable) a national service for which a session will start on MBSFN Cell 31 (see TS 34.108 clause 11.2.4) during the test.

Related ICS/IXIT statements

- MBMS Broadcast services in MBSFN mode application available on UE Yes/No.
- Support of transmit and receive functions available on UE Yes/No.
- Support of MBSFN receive only function available on UE Yes/No.

Test Procedure

See 14.1.5m for test procedure.

Same Downlink TFS, Downlink TFCS and Sub-tests as in clause 14.4.7.3

14.4.7n.4 Test Requirements

Same test requirements as in clause 14.4.7.4.

14.5 Combinations on PRACH

14.5.1 Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH

The reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.4.1 is implicitly tested by the test cases 14.4.2.1, 14.4.2.2, 14.4.2.3 and 14.4.3.

14.5.2 Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH

The reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.4.2 is implicitly tested by the test cases 14.4.2a.1, 14.4.2a.2 and 14.4.2a.3.

14.5.3 Interactive/Background / UL:32 DL: [max bit rate depending on UE category] with fixed RLC and MAC-ehs / PS RAB + SRBs for DCCH on RACH and SRB with fixed RLC and MAC-ehs on HS-DSCH / DL:QPSK

14.5.3.1 Conformance requirement

See 14.2.4.1.

14.5.3.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clauses 6.10.2.4.7.1 for QPSK using the downlink enhanced Layer 2 configuration with Fixed RLC and MAC-ehs

14.5.3.3 Method of Test

The contents of System Information Block type 5 / System Information Block type 5bis and 6 shall be as specified in TS 34.108, clause 6.1.2.

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-7 IE "HS-DSCH physical layer category extension". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value
Radio bearer	TS 34.108, clause 6.10.2.4.4.3 using downlink MAC-d flow parameters
MAC-ehs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See sub-test table

The generic test procedure in 14.1.3.5a is run for each sub-test with QPSK and non-MIMO case using condition A24 for Radio Bearer Setup.

Uplink TFS:

	TFI	RB7+SRB (32kbps on RACH)
TFS	TF0, bits	1x168
	TF1, bits	1x360

Uplink TFCS:

TFCI	RB7+SRB
UL_TFC0	TF0
UL_TFC1	TF1

Sub-tests:

Sub-test	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size bits	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size bits (note 3)
1	5	6	512	256	336	UL_TFC1	UL_TFC0	UL_TFC0, UL_TFC1	RB7: 312
	6	6	512	256					
	7	6	1536	512					
	8	6	1536	512					
	9	6	2047	512					
	10	6	2047	512					
	12	6	1024	128					
	13	6	2047	512					
	14	6	2047	512					
	15	6	2047	512					
	16	6	2047	512					
	17	6	2047	512					
	18	6	2047	512					

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: UL_TFC0, UL_TFC1 are part of minimum set of TFCIs.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

RB5: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return the data within one UL TTI.

14.5.3.4 Test Requirements

See 14.1.3.5a for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 18 the UE transmitted transport format shall be RB7/TF1 (1x1360)
3. At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number of RLC SDUs on RB7 as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 1 SDU or 4 SDUs depending on the transport block size under tests. For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6 Combinations on DPCH and HS-PDSCH

14.6.1 Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.1.1 Conformance requirement

For all transmissions of a transport block, the transport block size is derived from the TFRI value as specified below, except only in those cases of retransmissions where the Node-B selects a combination for which no mapping exists between the original transport block size and the selected combination of channelisation Code set and modulation type. In such cases, the transport block size index value signalled to the UE shall be set to 111111, i.e., $k_t=63$.

Let k_i be the TFRI signalled on the HS-SCCH value and let $k_{0,i}$ be the value in the table 9.2.3.1 corresponding to the modulation and the number of codes signalled on the HS-SCCH. Let k_t be the sum of the two values: $k_t = k_i + k_{0,i}$. The transport block size $L(k_t)$ can be obtained by accessing the position k_t in the table in Annex A (normative) or by using the formula below (informative):

If $k_t < 40$

$$L(k_t) = 125 + 12 \cdot k_t$$

else

$$L(k_t) = \left\lfloor L_{\min} p^{k_t} \right\rfloor$$

$$p = 2085 / 2048$$

$$L_{\min} = 296$$

End

Table 9.2.3.1: Values of $k_{0,i}$ for different numbers of channelization codes and modulation schemes

Combination i	Modulation scheme	Number of channelization codes	$k_{0,i}$
0	QPSK	1	1
1		2	40
2		3	63
3		4	79
4		5	92
5		6	102
6		7	111
7		8	118
8		9	125
9		10	131
10		11	136
11		12	141
12		13	145
13		14	150
14		15	153
15	16QAM	1	40
16		2	79
17		3	102
18		4	118
19		5	131
20		6	141
21		7	150
22		8	157
23		9	164
24		10	169
25		11	175
26		12	180
27		13	184
28		14	188
29		15	192

The following table provides the mapping between k_t (as per the definition in subclause 9.2.3.1) and the HS-DSCH Transport Block Size ($L(k_t)$).

Table 9.2.3.2: mapping between k_t (as per the definition in subclause 9.2.3.1) and the HS-DSCH Transport Block Size ($L(k_t)$)

Index	TB Size	Index	TB Size	Index	TB Size
1	137	86	1380	171	6324
2	149	87	1405	172	6438
3	161	88	1430	173	6554
4	173	89	1456	174	6673
5	185	90	1483	175	6793
6	197	91	1509	176	6916
7	209	92	1537	177	7041
8	221	93	1564	178	7168
9	233	94	1593	179	7298
10	245	95	1621	180	7430
11	257	96	1651	181	7564
12	269	97	1681	182	7700
13	281	98	1711	183	7840
14	293	99	1742	184	7981
15	305	100	1773	185	8125
16	317	101	1805	186	8272
17	329	102	1838	187	8422
18	341	103	1871	188	8574
19	353	104	1905	189	8729
20	365	105	1939	190	8886
21	377	106	1974	191	9047
22	389	107	2010	192	9210
23	401	108	2046	193	9377
24	413	109	2083	194	9546
25	425	110	2121	195	9719
26	437	111	2159	196	9894
27	449	112	2198	197	10073
28	461	113	2238	198	10255
29	473	114	2279	199	10440
30	485	115	2320	200	10629
31	497	116	2362	201	10821
32	509	117	2404	202	11017
33	521	118	2448	203	11216
34	533	119	2492	204	11418
35	545	120	2537	205	11625
36	557	121	2583	206	11835
37	569	122	2630	207	12048
38	581	123	2677	208	12266
39	593	124	2726	209	12488
40	605	125	2775	210	12713
41	616	126	2825	211	12943
42	627	127	2876	212	13177
43	639	128	2928	213	13415
44	650	129	2981	214	13657
45	662	130	3035	215	13904
46	674	131	3090	216	14155
47	686	132	3145	217	14411
48	699	133	3202	218	14671
49	711	134	3260	219	14936
50	724	135	3319	220	15206

51	737	136	3379	221	15481
52	751	137	3440	222	15761
53	764	138	3502	223	16045
54	778	139	3565	224	16335
55	792	140	3630	225	16630
56	806	141	3695	226	16931
57	821	142	3762	227	17237
58	836	143	3830	228	17548
59	851	144	3899	229	17865
60	866	145	3970	230	18188
61	882	146	4042	231	18517
62	898	147	4115	232	18851
63	914	148	4189	233	19192
64	931	149	4265	234	19538
65	947	150	4342	235	19891
66	964	151	4420	236	20251
67	982	152	4500	237	20617
68	1000	153	4581	238	20989
69	1018	154	4664	239	21368
70	1036	155	4748	240	21754
71	1055	156	4834	241	22147
72	1074	157	4921	242	22548
73	1093	158	5010	243	22955
74	1113	159	5101	244	23370
75	1133	160	5193	245	23792
76	1154	161	5287	246	24222
77	1175	162	5382	247	24659
78	1196	163	5480	248	25105
79	1217	164	5579	249	25558
80	1239	165	5680	250	26020
81	1262	166	5782	251	26490
82	1285	167	5887	252	26969
83	1308	168	5993	253	27456
84	1331	169	6101	254	27952
85	1356	170	6211		

Reference(s)

3GPP TS 25.321, 9.2.3.1 and Annex A

14.6.1.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.1.

14.6.1.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The following parameters are specific for this test case:

Parameter	Value
MAC-hs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See sub-test table

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TFI	RB5 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Sub-tests:

Sub-test	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)
1	1	2	512	128	336	UL_TFC1	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312
	2	2	512	128					
	3	3	512	128					
	4	3	512	128					
	5	6	512	256					
	6	6	512	256					
	7	6	1536	512					
	8	6	1536	512					
	9	6	2047	512					
	10	6	2047	512					
	11	3	1024	128					
	12	6	1024	128					
2	1	2	256	128	656	UL_TFC2	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632
	2	2	256	128					
	3	3	256	128					
	4	3	256	128					
	5	6	256	256					
	6	6	256	256					
	7	6	512	512					
	8	6	512	512					
	9	6	1024	512					
	10	6	1024	1024					
	11	3	512	128					
	12	6	512	128					
3	1	2	512	256	336	UL_TFC3	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 952
	2	2	512	256					
	3	3	512	256					
	4	3	512	256					
	5	6	512	256					
	6	8	512	256					
	7	8	1536	512					
	8	8	1536	512					
	9	8	2047	512					
	10	6	2047	1024					
	11	3	1024	128					
	12	8	1024	128					
4	1	2	256	256	656	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272
	2	2	256	256					
	3	3	256	256					
	4	3	256	256					
	5	6	256	256					
	6	8	256	256					
	7	8	512	512					
	8	8	512	512					
	9	8	1024	512					
	10	6	1024	1024					
	11	3	512	128					
	12	8	512	128					

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
 RB5: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return the data within one UL TTI.

14.6.1.4 Test requirements

See 14.1.3.5 for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 18 the UE transmitted transport format shall be
 - for sub-test 1: TF1 (1x336).
 - for sub-test 2: TF2 (2x336).
 - for sub-test 3: TF3 (3x336).
 - for sub-test 4: TF4 (4x336)

3. At step 18 and for each TFRC test point:

If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return 4 RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return 4 RLC SDUs where each SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE The generic test procedure as specified in 14.1.3.5.2 sends 4 SDUs of size $(N_{\text{PDU}} * \text{MAC-d PDU payload size}) / 4 - 8$ bits (size of 7 bit length indicator and expansion bit). For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.1a Interactive or background / UL:128 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.1a.1 Conformance requirement

See 14.6.1.1.

14.6.1a.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.1a.

14.6.1a.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The following parameters are specific for this test case:

Parameter	Value
MAC-hs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See sub-test table

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TF	RB5 (128 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Sub-tests:

Sub-test	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)
1	1	2	512	128	336	UL_TFC1	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312
	2	2	512	128					
	3	3	512	128					
	4	3	512	128					
	5	6	512	256					
	6	6	512	256					
	7	6	1536	512					
	8	6	1536	512					
	9	6	2047	512					
	10	6	2047	512					
	11	3	1024	128					
	12	6	1024	128					
2	1	2	256	128	656	UL_TFC2	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632
	2	2	256	128					
	3	3	256	128					
	4	3	256	128					
	5	6	256	256					
	6	6	256	256					
	7	6	512	512					
	8	6	512	512					
	9	6	1024	512					
	10	6	1024	1024					
	11	3	512	128					
	12	6	512	128					
3	1	2	512	256	336	UL_TFC3	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1272
	2	2	512	256					
	3	3	512	256					
	4	3	512	256					
	5	6	512	256					
	6	8	512	256					
	7	8	1536	512					
	8	8	1536	512					
	9	8	2047	512					
	10	6	2047	1024					
	11	3	1024	128					
	12	8	1024	128					
4	1	2	256	256	656	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552
	2	2	256	256					
	3	3	256	256					
	4	3	256	256					
	5	6	256	256					
	6	8	256	256					
	7	8	512	512					
	8	8	512	512					
	9	8	1024	512					
	10	6	1024	1024					
	11	3	512	128					
	12	8	512	128					

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCs.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return the data within one UL TTI.

14.6.1a.4 Test requirements

See 14.1.3.5.2 for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 18 the UE transmitted transport format shall be
 - for sub-test 1: TF1 (1x336).
 - for sub-test 2: TF2 (2x336).
 - for sub-test 3: TF3 (4x336).
 - for sub-test 4: TF4 (8x336).
3. At step 18 and for each TFRC test point:

If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return 4 RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return 4 RLC SDUs where each SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5.2 sends 4 SDUs of size $(N_{\text{PDU}} * \text{MAC-d PDU payload size}) / 4$ minus 8 bits (size of 7 bit length indicator and expansion bit). For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.1b Interactive or background / UL:64 DL: [max bit rate depending on UE category] with Fixed RLC and MAC-ehs PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: QPSK and 16QAM

14.6.1b.1 Conformance requirement

See 14.6.1.1.

14.6.1b.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.1 for the QPSK, 16QAM and non-MIMO case using the downlink enhanced Layer 2 configuration with Fixed RLC and MAC-ehs .

14.6.1b.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-7 IE "HS-DSCH physical layer category extension". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value
Radio bearer	TS 34.108, clause 6.10.2.4.5.1 using downlink MAC-d flow parameters according to Alt 2 (Fixed RLC and MAC-ehs)
MAC-ehs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See sub-test table

The generic test procedure in 14.1.3.5a is run for each sub-test for test execution 1 and 2.

Execution counter	Downlink Modulation Scheme (M)	MIMO
1	QPSK	No
2	16QAM	No

Uplink TFS:

	TFI	RB5 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Sub-tests:

Sub-test	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCS (note 2)	UL RLC SDU size (bits) (note 3)
1	1	2	512	128	336	UL_TFC1	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312
	2	2	512	128					
	3	3	512	128					
	4	3	512	128					
	5	6	512	256					
	6	6	512	256					
	7	6	1536	512					
	8	6	1536	512					
	9	6	2047	512					
	10	6	2047	512					
	11	3	1024	128					
	12	6	1024	128					
	13 to 20	6	2047	512					
2	1	2	256	128	656	UL_TFC2	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632
	2	2	256	128					
	3	3	256	128					
	4	3	256	128					
	5	6	256	256					
	6	6	256	256					
	7	6	512	512					
	8	6	512	512					
	9	6	1024	512					
	10	6	1024	1024					
	11	3	512	128					
	12	6	512	128					
	13 to 20	6	1024	1024					
3	1	2	512	256	336	UL_TFC3	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 952
	2	2	512	256					
	3	3	512	256					
	4	3	512	256					
	5	6	512	256					
	6	8	512	256					
	7	8	1536	512					
	8	8	1536	512					
	9	8	2047	512					
	10	8	2047	1024					
	11	3	1024	128					
	12	8	1024	128					
	13 to 20	8	2047	1024					
4	1	2	256	256	656	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272
	2	2	256	256					
	3	3	256	256					
	4	3	256	256					
	5	6	256	256					
	6	8	256	256					
	7	8	512	512					
	8	8	512	512					
	9	8	1024	512					
	10	8	1024	1024					
	11	3	512	128					
	12	8	512	128					

	13 to 20	8	1024	1024					
<p>NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.</p> <p>NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return the data within one UL TTI.</p>									

14.6.1b.4 Test requirements

See 14.1.3.5a for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 18 the UE transmitted transport format shall be
 - for sub-test 1: TF1 (1x336).
 - for sub-test 2: TF2 (2x336).
 - for sub-test 3: TF3 (3x336).
 - for sub-test 4: TF4 (4x336)
3. At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 1 SDU or 4 SDUs depending on the transport block size under tests. For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.1c Interactive or background / UL:64 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: 64QAM

14.6.1c.1 Conformance requirement

See 14.6.1.1.

14.6.1c.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.1 for the 64QAM and non-MIMO case using the downlink enhanced Layer 2 configuration with Flexible RLC and MAC-ehs .

14.6.1c.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-7 IE "HS-DSCH physical layer category extension". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value
Radio bearer	TS 34.108, clause 6.10.2.4.5.1 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs)
MAC-ehs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See sub-test table

The generic test procedure in 14.1.3.5a is run for each sub-test with M=64QAM and non-MIMO case.

Uplink TFS:

	TFI	RB5 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Sub-tests:

Sub-test	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)
1	13-20	6	2047	512	Flexible	UL_TFC1	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312
2	13-20	6	1024	1024	Flexible	UL_TFC2	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632
3	13-20	6	2047	1024	Flexible	UL_TFC3	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 952
4	13-20	6	1024	1024	Flexible	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return the data within one UL TTI.

14.6.1c.4 Test requirements

See 14.1.3.5a for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 18 the UE transmitted transport format shall be
 - for sub-test 1: TF1 (1x336).
 - for sub-test 2: TF2 (2x336).
 - for sub-test 3: TF3 (3x336).
 - for sub-test 4: TF4 (4x336)
3. At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 1 SDU or 4 SDUs depending on the transport block size under tests. For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.1d Interactive or background / UL:64 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: QPSK, 16QAM and MIMO

14.6.1d.1 Conformance requirement

See 14.6.1.1.

14.6.1d.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.1 for the QPSK, 16QAM and MIMO case using the downlink enhanced Layer 2 configuration with Flexible RLC and MAC-ehs .

14.6.1d.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-7 IE “HS-DSCH physical layer category extension”. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value	Comments
Radio bearer	TS 34.108, clause 6.10.2.4.5.1 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs).	
MIMO N_cqi_typeA/M_cqi ratio	1/1	25.331, 10.3.6.41a
Second CPICH pattern	Antenna1 S-CPICH	25.331, 10.3.6.41b
S-CPICH Channelisation code	12	
precodingWeightIndicator, W2	00	25.212, Table 14A
MAC-ehs receiver window size	16	
RLC Transmission window size	See sub-test table	
RLC Receiving window size	See sub-test table	

The generic test procedure in 14.1.3.5a is run for each sub-test for test execution 1 and 2.

Execution counter	Downlink Modulation Scheme (M1) MIMO data flow#1	Downlink Modulation Scheme (M2) MIMO data flow#2	MIMO
1	QPSK	QPSK	Yes
2	16QAM	16QAM	Yes
3	16QAM	QPSK	Yes

Uplink TFS:

	TFI	RB5 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Sub-tests:

Sub-test	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)
1	15 to 20	12	2047	512	Flexible	UL_TFC1	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312
2	15 to 20	12	1024	1024	Flexible	UL_TFC2	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632
3	15 to 20	16	2047	1024	Flexible	UL_TFC3	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 952
4	15 to 20	12	1024	1024	Flexible	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

RB5: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return the data within one UL TTI.

NOTE 4: For Subtest 3, when 16QAM/16QAM modulation is executed, test points 33 and above are not applicable.

14.6.1d.4 Test requirements

See 14.1.3.5a for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE transmitted transport format shall be
 - for sub-test 1: TF1 (1x336).
 - for sub-test 2: TF2 (2x336).

- for sub-test 3: TF3 (3x336).
- for sub-test 4: TF4 (4x336)

3. At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 2 SDU or 8 SDUs depending on the transport block size under tests. For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.1e Interactive or background / UL:64 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: 64QAM and MIMO

14.6.1e.1 Conformance requirement

See 14.6.1.1.

14.6.1e.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.1 for the 64QAM and MIMO case using the downlink enhanced Layer 2 configuration with Flexible RLC and MAC-ehs .

14.6.1e.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-7 IE "HS-DSCH physical layer category extension". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value	Comments
Radio bearer	TS 34.108, clause 6.10.2.4.5.1 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs).	
MIMO N_cqi_typeA/M_cqi ratio	1/1	25.331, 10.3.6.41a
Second CPICH pattern	Antenna1 S-CPICH	25.331, 10.3.6.41b
S-CPICH Channelisation code	12	
precodingWeight2	00	25.212, Table 14A
MAC-ehs receiver window size	16	
RLC Transmission window size	See sub-test table	
RLC Receiving window size	See sub-test table	

The generic test procedure in 14.1.3.5a is run for each sub-test for test execution 1 to 3.

Execution counter	Downlink Modulation Scheme (M1) MIMO data flow#1	Downlink Modulation Scheme (M2) MIMO data flow#2	Number of HARQ processes	MIMO
1	64QAM	QPSK	12	Yes
2	64QAM	16QAM	12	Yes
3	64QAM	64QAM	12	Yes

Uplink TFS:

	TFI	RB5 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Sub-tests:

Sub-test	UE Category	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	19 and 20	2047	1024	Flexible	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272	See note 4

NOTE 1: The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

RB5: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return one complete UL RLC SDU per UL TTI.

NOTE 4: The test data size and number of DL RLC SDUs for RB5 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5a.

14.6.1e.4 Test requirements

See 14.1.3.5a for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE transmitted transport format shall be
 - for sub-test 1: TF4 (4x336)
- At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the

downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 2 SDU or 8 SDUs depending on the transport block size under tests.

14.6.1f Interactive or background / UL:64 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: QPSK, 16QAM and Dual-Cell

14.6.1f.1 Conformance requirement

See 14.6.1.1.

14.6.1f.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.1 for the QPSK, 16QAM and Dual-Cell case using the downlink enhanced Layer 2 configuration with Flexible RLC and MAC-ehs .

14.6.1f.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-8 IE "HS-DSCH physical layer category extension 2". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value	Comments
Radio bearer	TS 34.108, clause 6.10.2.4.5.1 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs).	
MAC-ehs receiver window size	16	
RLC Transmission window size	See sub-test table	
RLC Receiving window size	See sub-test table	

The generic test procedure in 14.1.3.5a is run for each sub-test for test execution 1 to 3.

Execution counter	Downlink Modulation Scheme (M1) Dual-Cell data flow#1	Downlink Modulation Scheme (M2) Dual-Cell data flow#2	Number of HARQ processes	Dual-Cell
1	QPSK	QPSK	6	Yes
2	16QAM	16QAM	8	Yes
3	16QAM	QPSK	8	Yes

Uplink TFS:

	TF	RB5 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Sub-tests:

Sub-test	UE Category	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	21 to 24	2047	1024	Flexible	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272	See note 4
<p>NOTE 1: The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.</p> <p>NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return the data within one UL TTI.</p> <p>NOTE 4: The test data size and number of DL RLC SDUs for RB5 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5a.</p>									

14.6.1f.4 Test requirements

See 14.1.3.5a for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE transmitted transport format shall be
 - for sub-test 1: TF4 (4x336)
- At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 2 SDU or 8 SDUs depending on the transport block size under tests.

14.6.1g Interactive or background / UL:64 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: 64QAM and Dual-Cell

14.6.1g.1 Conformance requirement

See 14.6.1.1.

14.6.1g.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.1 for the 64QAM and Dual-Cell case using the downlink enhanced Layer 2 configuration with Flexible RLC and MAC-ehs .

14.6.1g.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-8 IE “HS-DSCH physical layer category extension 2”. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value	Comments
Radio bearer	TS 34.108, clause 6.10.2.4.5.1 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs).	
MAC-ehs receiver window size	16	
RLC Transmission window size	See sub-test table	
RLC Receiving window size	See sub-test table	

The generic test procedure in 14.1.3.5a is run for each sub-test for test execution 1 to 3.

Execution counter	Downlink Modulation Scheme (M1) Dual-Cell data flow#1	Downlink Modulation Scheme (M2) Dual-Cell data flow#2	Number of HARQ processes	Dual-Cell
1	64QAM	QPSK	6	Yes
2	64QAM	16QAM	6	Yes
3	64QAM	64QAM	6	Yes

Uplink TFS:

	TFI	RB5 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Sub-tests:

Sub-test	UE Category	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	23 and 24	2047	1024	Flexible	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272	See note 4

NOTE 1: The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return the data within one UL TTI.

NOTE 4: The test data size and number of DL RLC SDUs for RB5 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5a.

14.6.1g.4 Test requirements

See 14.1.3.5a for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE transmitted transport format shall be
 - for sub-test 1: TF4 (4x336)
- At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 2 SDU or 8 SDUs depending on the transport block size under tests.

14.6.1h Interactive or background / UL:64 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: 16QAM, Dual-Cell and MIMO

14.6.1h.1 Conformance requirement

See 14.6.1.1.

14.6.1h.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.1 for the 16QAM, MIMO and Dual-Cell case using the downlink enhanced Layer 2 configuration with Flexible RLC and MAC-ehs .

14.6.1h.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Re1-9 IE “HS-DSCH physical layer category extension 3”. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value	Comments
Radio bearer	TS 34.108, clause 6.10.2.4.5.1 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs).	
MAC-ehs receiver window size	64	
precodingWeight2	00	25.212, Table 14A
RLC Transmission window size	See sub-test table	
RLC Receiving window size	See sub-test table	

Execution counter	Dual-Cell#1		Dual-Cell#2		Number of HARQ processes
	Downlink Modulation Scheme (M1) For Cell#1 data flow#1	Downlink Modulation Scheme (M2) For Cell#1 data flow#2	Downlink Modulation Scheme (M3) For Cell#2 data flow#1	Downlink Modulation Scheme (M4) For Cell#2 data flow#2	
1	16QAM	16QAM	16QAM	16QAM	12

Uplink TFS:

	TFI	RB5 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

The generic test procedure in 14.1.3.5a is run for each sub-test.

Sub-tests:

Sub-test	UE Category	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	25 to 28	2047	1024	Flexible	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272	See note 4
<p>NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.</p> <p>NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return th data within one UL TTI.</p> <p>NOTE 4: The test data size for RB5 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5a.</p>									

14.6.1h.4 Test requirements

See 14.1.3.5a for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 18 the UE transmitted transport format shall be TF1 (1x336).
3. At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 2 SDU or 8 SDUs depending on the transport block size under tests. For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.1i Interactive or background / UL:64 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: 64QAM, Dual-Cell and MIMO

14.6.1i.1 Conformance requirement

See 14.6.1.1.

14.6.1i.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.1 for the combination of 16QAM/64QAM, MIMO and Dual-Cell case using the downlink enhanced Layer 2 configuration with Flexible RLC and MAC-ehs .

14.6.1i.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Re1-9 IE “HS-DSCH physical layer category extension 3”. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value	Comments
Radio bearer	TS 34.108, clause 6.10.2.4.5.1 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs).	
MAC-ehs receiver window size	64	
precodingWeight2	00	25.212, Table 14A
RLC Transmission window size	See sub-test table	
RLC Receiving window size	See sub-test table	

The generic test procedure in 14.1.3.5a is run for each sub-test for test execution 1 to 3.

Execution counter	Dual-Cell #1		Dual-Cell #2		Number of HARQ processes
	Downlink Modulation Scheme (M1) For Cell 1 data flow#1	Downlink Modulation Scheme (M2) For Cell 1 data flow#2	Downlink Modulation Scheme (M3) For Cell 2 data flow#1	Downlink Modulation Scheme (M4) For Cell 2 data flow#2	
1	64QAM	16QAM	64QAM	16QAM	12
2	64QAM	64QAM	64QAM	64QAM	12

Uplink TFS:

	TFI	RB5 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Sub-tests:

Sub-test	UE Category	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	27 to 28	2047	1024	Flexible	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272	See note 4
<p>NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.</p> <p>NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return th data within one UL TTI.</p> <p>NOTE 4: The test data size for RB5 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5a.</p>									

14.6.1i.4 Test requirements

See 14.1.3.5a for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE transmitted transport format shall be TF1 (1x336).
- At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 2 SDU or 8 SDUs depending on the transport block size under tests. For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.1j Interactive or background / UL: 64 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH / DL: QPSK, 16QAM, 64QAM and 3C - 3C on Single Band (3-0)

14.6.1j.1 Definition and applicability

UE categories (Cat 29, 30, 31 and 32) which support combination of 3C-HSDPA or 4C-HSDPA and 64QAM, QPSK and 16QAM

UE supports FDD and F-DPCH or Enhanced F-DPCH.

14.6.1j.2 Conformance requirement

The UE shall be able to establish the UTRAN requested radio bearers within the UE's signalled radio access capabilities.

The UE shall correctly transfer user data from peer to peer RLC entities according to the requested radio bearer configuration.

Reference(s)

3GPP TS 25.331, clause 8.2.1

3GPP TS 25.2xx series (Physical Layer)

3GPP TS 25.321 (MAC)

3GPP TS 25.322 (RLC)

14.6.1j.3 Test purpose

When the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.1 is configured for 3C-HSDPA, with downlink 16QAM, flexible RLC and MAC-ehs:

1. Verify that the UE is able to establish the radio bearer combination on Anchor And both Secondary cells.
2. Verify correct data transfer of the established radio bearer combination on Anchor And both Secondary cells.

14.6.1j.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1/2/3 3C-HSDPA cell(s) with Cell 1 (f1) (Anchor Carrier), Cell 2 (f2) and Cell 3 (f3) (Secondary Carriers) – Three Carriers (One Anchor Carrier and Two Secondary Carriers) on DL Band A and no Carriers on DL Band B (Single Band 3C-HSDPA) where f1, f2 and f3 are adjacent frequencies.

SS: Table 5.0aB of TS 25.101

Related ICS/IXIT statement(s)

- UE supports FDD
- UE category supports combined 64QAM, Multi-Cell (3 Cells) (UE Category 29, 30, 31 or 32)
- UE supports F-DPCH or Enhanced F-DPCH

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-10 IE “HS-DSCH physical layer category extension 4” or IE “HS-DSCH physical layer category extension 5”. This IE corresponds to the HS-DSCH category supported by the UE when Dual-Cell 3C and MAC-ehs is configured.

The following parameters are specific for this test case:

Table 14.6.1j-1: Radio Bearer Parameters

Parameter	Value
Radio bearer	TS 34.108, clause 6.10.2.4.5.1 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs)
MAC-ehs receiver window size	64
HS-DSCH MAC-d PDU size	Flexible

The generic test procedure in 14.1.3.5b is run for each sub-test for test execution 1 to 5.

Table 14.6.1j-2: Table of Execution Counter

Execution counter	Downlink Modulation Scheme (M1) Anchor Carrier-Cell data flow#1	Downlink Modulation Scheme (M2) Secondary Carrier 1-Cell data flow#2	Downlink Modulation Scheme (M3) Secondary Carrier 2-Cell data flow#3	Number of HARQ processes
1	QPSK	QPSK	QPSK	18
2	16QAM	16QAM	16QAM	18
3	64QAM	64QAM	64QAM	18
4	64QAM	64QAM	16QAM	18
5	64QAM	16QAM	QPSK	18

Uplink TFS:

	TF	RB5 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Sub-tests:

Sub-test	UE Category	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	29 to 32	2047	1024	Flexible	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272	See note 4
<p>NOTE 1: The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.</p> <p>NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return the data within one UL TTI.</p> <p>NOTE 4: The test data size and number of DL RLC SDUs for RB5 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5b.</p>									

14.6.1j.5 Test requirements

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE shall return a RLC SDU with same content as sent in downlink.

Refer to 14.1.3.5b for definition of step 12 and step 18.

14.6.1k Interactive or background / UL: 64 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH / DL: QPSK, 16QAM, 64QAM and 3C - 3C on Dual Band (2-1)

14.6.1k.1 Definition and applicability

UE categories (Cat 29, 30, 31 and 32) which support combination of 3C-HSDPA or 4C-HSDPA and 64 QAM, QPSK and 16 QAM

UE supports FDD and F-DPCH or Enhanced F-DPCH.

14.6.1k.2 Conformance requirement

See 14.6.1j.2.

14.6.1k.3 Test purpose

See 14.6.1j.3.

14.6.1k.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1/2/3 3C-HSDPA cell(s) with Cell 1 (f1) (Anchor Carrier), Cell 2 (f2) and Cell 3 (f3) (Secondary Carriers) – Two Carriers (One Anchor Carrier and One Secondary Carrier) on DL Band A and One Secondary Carrier on DL Band B (Dual Band 3C-HSDPA) where f1 and f2 are adjacent frequencies.

SS: Table 5.0aB of TS 25.101

Related ICS/IXIT statement(s)

- UE supports FDD

- UE category supports combined 64QAM, Multi-Cell (3 Cells) (UE Category 29, 30, 31 or 32)
- UE supports F-DPCH or Enhanced F-DPCH

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-10 IE “HS-DSCH physical layer category extension 4” or “HS-DSCH physical layer category extension 5”. This IE corresponds to the HS-DSCH category supported by the UE when Dual-Cell 3C and MAC-ehs is configured.

See 14.6.1j.4 - Table 14.6.1j-1 Radio Bearer Parameters, and Table 14.6.1j-2 Table of Execution Counter.

14.6.1k.5 Test requirements

See 14.6.1j.5.

14.6.1l Interactive or background / UL: 64 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH / DL: QPSK, 16QAM, 64QAM and 3C - 3C on Dual Band (1-2)

14.6.1l.1 Definition and applicability

UE categories (Cat 29, 30, 31 and 32) which support combination of 3C-HSDPA or 4C-HSDPA and 64QAM, QPSK and 16 QAM

UE supports FDD and F-DPCH or Enhanced F-DPCH.

14.6.1l.2 Conformance requirement

See 14.6.1j.2.

14.6.1l.3 Test purpose

See 14.6.1j.3.

14.6.1l.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1/2/3 3C-HSDPA cell(s) with Cell 1 (f1) (Anchor Carrier), Cell 2 (f2) and Cell 3 (f3) (Secondary Carriers) – Anchor Carrier on DL Band A and Both Secondary Carriers on DL Band B (Dual Band 3C-HSDPA) where f2 and f3 are adjacent frequencies.

SS: Table 5.0aB of TS 25.101

Related ICS/IXIT statement(s)

- UE supports FDD
- UE category supports combined 64QAM, Multi-Cell (3 Cells) (UE Category 29, 30, 31 or 32)
- UE supports F-DPCH or Enhanced F-DPCH

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-10 IE “HS-DSCH physical layer category extension 4” and “HS-DSCH physical layer category extension 5”. This IE corresponds to the HS-DSCH category supported by the UE when Dual-Cell 3C and MAC-ehs is configured.

See 14.6.1j.4 - Table 14.6.1j-1 Radio Bearer Parameters and Table 14.6.1j-2 Table of Execution Counter for this test case.

14.6.1l.5 Test requirements

See 14.6.1j.5.

14.6.2 Interactive or background / UL:384 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.2.1 Conformance requirement

See 14.6.1.1.

14.6.2.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.2.

14.6.2.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-5 IE “HS-DSCH physical layer category” (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-e-hs is not configured.

The following parameters are specific for this test case:

Parameter	Value
MAC-hs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See sub-test table

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TFI	RB5 (384 kbps, 10ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF5, TF0)
UL_TFC6	(TF0, TF1)
UL_TFC7	(TF1, TF1)
UL_TFC8	(TF2, TF1)
UL_TFC9	(TF3, TF1)
UL_TFC10	(TF4, TF1)
UL_TFC11	(TF5, TF1)

Sub-tests:

Sub-test	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)
1	1	2	512	256	336	UL_TFC1	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7	RB5: 312
	2	2	512	256					
	3	3	512	256					
	4	3	512	256					
	5	6	512	256					
	6	6	512	256					
	7	6	1536	512					
	8	6	1536	512					
	9	6	2047	512					
	10	6	2047	512					
	11	3	512	256					
	12	6	512	256					
2	1	2	256	256	656	UL_TFC2	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 632
	2	2	256	256					
	3	3	256	256					
	4	3	256	256					
	5	6	256	256					
	6	6	256	256					
	7	6	512	512					
	8	6	512	512					
	9	6	1024	512					
	10	6	1024	1024					
	11	3	256	256					
	12	6	256	256					
3	1	2	512	256	336	UL_TFC3	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 1272
	2	2	512	256					
	3	3	512	256					
	4	3	512	256					
	5	6	512	256					
	6	8	512	256					
	7	8	1536	512					
	8	8	1536	512					
	9	8	2047	512					
	10	6	2047	1024					
	11	3	512	256					
	12	8	512	256					
4	1	2	256	256	656	UL_TFC4	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC6, UL_TFC10	RB5: 2552
	2	2	256	256					
	3	3	256	256					
	4	3	256	256					
	5	6	256	256					
	6	8	256	256					
	7	8	512	512					
	8	8	512	512					
	9	8	1024	512					
	10	6	1024	1024					
	11	3	256	256					
	12	8	256	256					
5	1	2	256	256	656	UL_TFC5	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 3832
	2	2	256	256					
	3	3	256	256					
	4	3	256	256					
	5	6	256	256					
	6	8	256	256					

	7	8	512	512					
	8	8	512	512					
	9	8	1024	512					
	10	6	1024	1024					
	11	3	256	256					
	12	8	256	256					

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC6 are part of minimum set of TFCs.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return th data within one UL TTI.

14.6.2.4 Test requirements

See 14.1.3.5.2 for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 18 the UE transmitted transport format shall be
 - for sub-test 1: TF1 (1x336).
 - for sub-test 2: TF2 (2x336).
 - for sub-test 3: TF3 (4x336).
 - for sub-test 4: TF4 (8x336).
 - for sub-test 5: TF5 (12x336).

3. At step 18 and for each TFRC test point:

If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return 4 RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return 4 RLC SDUs where each SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5.2 sends 4 SDUs of size $(N_{\text{PDUs}} * \text{MAC-d PDU payload size}) / 4$ minus 8 bits (size of 7 bit length indicator and expansion bit). For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.3 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.3.1 Conformance requirement

See 14.6.1.1.

14.6.3.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.3.

14.6.3.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-e-hs is not configured.

The following parameters are specific for this test case:

Parameter	Value
MAC-hs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See sub-test table

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (384 kbps, 10 ms TTI)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	2x336	N/A
	TF3, bits	N/A	N/A	N/A	4x336	N/A
	TF4, bits	N/A	N/A	N/A	8x336	N/A
	TF5, bits	N/A	N/A	N/A	12x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF1, TF0, TF0)
UL_TFC3	(TF0, TF0, TF0, TF1, TF0)
UL_TFC4	(TF1, TF0, TF0, TF1, TF0)
UL_TFC5	(TF2, TF1, TF1, TF1, TF0)
UL_TFC6	(TF0, TF0, TF0, TF2, TF0)
UL_TFC7	(TF1, TF0, TF0, TF2, TF0)
UL_TFC8	(TF2, TF1, TF1, TF2, TF0)
UL_TFC9	(TF0, TF0, TF0, TF3, TF0)
UL_TFC10	(TF1, TF0, TF0, TF3, TF0)
UL_TFC11	(TF2, TF1, TF1, TF3, TF0)
UL_TFC12	(TF0, TF0, TF0, TF4, TF0)
UL_TFC13	(TF1, TF0, TF0, TF4, TF0)
UL_TFC14	(TF2, TF1, TF1, TF4, TF0)
UL_TFC15	(TF0, TF0, TF0, TF5, TF0)
UL_TFC16	(TF1, TF0, TF0, TF5, TF0)
UL_TFC17	(TF2, TF1, TF1, TF5, TF0)
UL_TFC18	(TF0, TF0, TF0, TF0, TF1)
UL_TFC19	(TF1, TF0, TF0, TF0, TF1)
UL_TFC20	(TF2, TF1, TF1, TF0, TF1)
UL_TFC21	(TF0, TF0, TF0, TF1, TF1)
UL_TFC22	(TF1, TF0, TF0, TF1, TF1)
UL_TFC23	(TF2, TF1, TF1, TF1, TF1)
UL_TFC24	(TF0, TF0, TF0, TF2, TF1)
UL_TFC25	(TF1, TF0, TF0, TF2, TF1)
UL_TFC26	(TF2, TF1, TF1, TF2, TF1)
UL_TFC27	(TF0, TF0, TF0, TF3, TF1)
UL_TFC28	(TF1, TF0, TF0, TF3, TF1)
UL_TFC29	(TF2, TF1, TF1, TF3, TF1)
UL_TFC30	(TF0, TF0, TF0, TF4, TF1)
UL_TFC31	(TF1, TF0, TF0, TF4, TF1)
UL_TFC32	(TF2, TF1, TF1, TF4, TF1)
UL_TFC33	(TF0, TF0, TF0, TF5, TF1)
UL_TFC34	(TF1, TF0, TF0, TF5, TF1)
UL_TFC35	(TF2, TF1, TF1, TF5, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x148
	TF1, bits	1x39	1x103	1x60	1x148
	TF2, bits	1x81	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF1, TF0)
DL_TFC3	(TF0, TF0, TF0, TF1)
DL_TFC4	(TF1, TF0, TF0, TF1)
DL_TFC5	(TF2, TF1, TF1, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Speech and Interactive Background radio bearer. As the Interactive Background UL:384 kbps radio bearer (RB8) has the highest number of transport formats (5 for TTI=10 ms and excluding TF0) then 5 sub-tests has been defined. The selected UL TFCI to achieve test coverage of TF1 to TF5 for RB8 and for the different speech transport formats is: UL_TFC4 for TF1, UL_TFC8 for TF2, UL_TFC11 for TF3, UL_TFC13 for TF4 and UL_TFC17 for TF5.

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	256	336	DL_TFC1	UL_TFC4	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC18	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC18, UL_TFC22	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	6	2047	512							
	11	3	512	256							
	12	6	512	256							
2	1	2	256	256	656	DL_TFC2	UL_TFC8	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC18	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC8, UL_TFC18, UL_TFC26	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	6	256	256							
3	1	2	512	256	336	DL_TFC2	UL_TFC11	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC18	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC11, UL_TFC18, UL_TFC29	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	512	256							
	12	8	512	256							
4	1	2	256	256	656	DL_TFC1	UL_TFC13	DL_TFC0, DL_TFC3,	UL_TFC0, UL_TFC1,	RB5: 39 RB6: 103	RB5: 39 RB6: No data
	2	2	256	256							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCS (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	3	3	256	256				UL_TFC0, UL_TFC18	UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC18, UL_TFC31	RB7: 60 RB8: 2552	RB7: No data RB8: See note 4
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	256	256							
12	8	256	256								
5	1	2	256	256	656	DL_TFC2	UL_TFC17	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC18	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC17, UL_TFC18, UL_TFC35	RB5: 81 RB6: 103 RB7: 60 RB8: 3832	RB5: 81 RB6: 103 RB7: 60 RB8: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	8	256	256							

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC18 are part of minimum set of TFCS.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB8: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.

NOTE 4: The test data size for RB8 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5.

14.6.3.4 Test requirements

See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return 4 RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return 4 RLC SDUs where each SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5.2 sends 4 SDUs of size $(N_{\text{PDU}_s} * \text{MAC-d PDU payload size}) / 4$ minus 8 bits (size of 7 bit length indicator and expansion bit). For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.3a Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL: 64 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.3a.1 Conformance requirement

See 14.6.1.1.

14.6.3a.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.3a for the uplink 64 kbps case.

14.6.3a.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The following parameters are specific for this test case:

Parameter	Value
MAC-hs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See sub-test table

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	2x336	N/A
	TF3, bits	N/A	N/A	N/A	3x336	N/A
	TF4, bits	N/A	N/A	N/A	4x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF1, TF0, TF0)
UL_TFC3	(TF0, TF0, TF0, TF1, TF0)
UL_TFC4	(TF1, TF0, TF0, TF1, TF0)
UL_TFC5	(TF2, TF1, TF1, TF1, TF0)
UL_TFC6	(TF0, TF0, TF0, TF2, TF0)
UL_TFC7	(TF1, TF0, TF0, TF2, TF0)
UL_TFC8	(TF2, TF1, TF1, TF2, TF0)
UL_TFC9	(TF0, TF0, TF0, TF3, TF0)
UL_TFC10	(TF1, TF0, TF0, TF3, TF0)
UL_TFC11	(TF2, TF1, TF1, TF3, TF0)
UL_TFC12	(TF0, TF0, TF0, TF4, TF0)
UL_TFC13	(TF1, TF0, TF0, TF4, TF0)
UL_TFC14	(TF2, TF1, TF1, TF4, TF0)
UL_TFC15	(TF0, TF0, TF0, TF0, TF1)
UL_TFC16	(TF1, TF0, TF0, TF0, TF1)
UL_TFC17	(TF2, TF1, TF1, TF0, TF1)
UL_TFC18	(TF0, TF0, TF0, TF1, TF1)
UL_TFC19	(TF1, TF0, TF0, TF1, TF1)
UL_TFC20	(TF2, TF1, TF1, TF1, TF1)
UL_TFC21	(TF0, TF0, TF0, TF2, TF1)
UL_TFC22	(TF1, TF0, TF0, TF2, TF1)
UL_TFC23	(TF2, TF1, TF1, TF2, TF1)
UL_TFC24	(TF0, TF0, TF0, TF3, TF1)
UL_TFC25	(TF1, TF0, TF0, TF3, TF1)
UL_TFC26	(TF2, TF1, TF1, TF3, TF1)
UL_TFC27	(TF0, TF0, TF0, TF4, TF1)
UL_TFC28	(TF1, TF0, TF0, TF4, TF1)
UL_TFC29	(TF2, TF1, TF1, TF4, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x148
	TF1, bits	1x39	1x103	1x60	1x148
	TF2, bits	1x81	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF1, TF0)
DL_TFC3	(TF0, TF0, TF0, TF1)
DL_TFC4	(TF1, TF0, TF0, TF1)
DL_TFC5	(TF2, TF1, TF1, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Speech and Interactive Background radio bearer. As the Interactive Background UL:64 kbps radio bearer (RB8) has the highest number of transport formats (4 excluding TF0) then 4 sub-tests have been defined. The selected UL TFCI to achieve test coverage of TF1 to TF4 for RB8 and for the different speech transport formats is: UL_TFC4 for TF1, UL_TFC8 for TF2, UL_TFC11 for TF3 and UL_TFC13 for TF4.

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	128	336	DL_TFC1	UL_TFC4	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC15, UL_TFC19	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: See note 4
	2	2	512	128							
	3	3	512	128							
	4	3	512	128							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	6	2047	512							
	11	3	1024	128							
	12	6	1024	128							
2	1	2	256	128	656	DL_TFC2	UL_TFC8	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC8, UL_TFC15, UL_TFC23	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: See note 4
	2	2	256	128							
	3	3	256	128							
	4	3	256	128							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	6	512	128							
3	1	2	512	256	336	DL_TFC2	UL_TFC11	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC11, UL_TFC15, UL_TFC26	RB5: 81 RB6: 103 RB7: 60 RB8: 952	RB5: 81 RB6: 103 RB7: 60 RB8: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
	12	8	1024	128							
4	1	2	256	256	656	DL_TFC1	UL_TFC13	DL_TFC0, DL_TFC3,	UL_TFC0, UL_TFC1,	RB5: 39 RB6: 103	RB5: 39 RB6: No data
	2	2	256	256							

	3	3	256	256				UL_TFC0, UL_TFC15	UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28	RB7: 60 RB8: 1272	RB7: No data RB8: See note 4
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	8	512	128							

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC15 are part of minimum set of TFCs.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

RB8: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.

NOTE 4: The test data size for RB8 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5.

14.6.3a.4 Test requirements

See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return 4 RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return 4 RLC SDUs where each SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5.2 sends 4 SDUs of size $(N_{\text{PDU}} * \text{MAC-d PDU payload size}) / 4$ minus 8 bits (size of 7 bit length indicator and expansion bit). For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.4 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:384 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.4.1 Conformance requirement

See 14.6.1.1.

14.6.4.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.4.

14.6.4.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

Initial Conditions

The following RLC Info parameter values shall be set by the SS for the Conversational / unknown / UL:64 DL:64 kbps / CS RAB (RB5):

	RB5 (Conv. 64 kbps)
Uplink RLC TM RLC Segmentation indication Transmission RLC discard CHOICE <i>SDU Discard Mode</i> Timer based no explicit Timer_discard	FALSE 100ms
Downlink RLC TM RLC Segmentation indication	FALSE
NOTE: Timer based discard without explicit signalling is used in uplink to secure that the UE will be able to return data for the case when the UE test loop function will not deliver all the SDUs in one and the same TTI .	

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TF	RB5 (Conv. 64 kbps, 20 ms TTI)	RB6 (I/B 384 kbps, 10 ms TTI)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A
	TF3, bits	N/A	4x336	N/A
	TF4, bits	N/A	8x336	N/A
	TF5, bits	N/A	12x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF0, TF1, TF0)
UL_TFC3	(TF1, TF1, TF0)
UL_TFC4	(TF0, TF2, TF0)
UL_TFC5	(TF1, TF2, TF0)
UL_TFC6	(TF0, TF3, TF0)
UL_TFC7	(TF1, TF3, TF0)
UL_TFC8	(TF0, TF4, TF0)
UL_TFC9	(TF1, TF4, TF0)
UL_TFC10	(TF0, TF5, TF0)
UL_TFC11	(TF1, TF5, TF0)
UL_TFC12	(TF0, TF0, TF1)
UL_TFC13	(TF1, TF0, TF1)
UL_TFC14	(TF0, TF1, TF1)
UL_TFC15	(TF1, TF1, TF1)
UL_TFC16	(TF0, TF2, TF1)
UL_TFC17	(TF1, TF2, TF1)
UL_TFC18	(TF0, TF3, TF1)
UL_TFC19	(TF1, TF3, TF1)
UL_TFC20	(TF0, TF4, TF1)
UL_TFC21	(TF1, TF4, TF1)
UL_TFC22	(TF0, TF5, TF1)
UL_TFC23	(TF1, TF5, TF1)

Downlink TFS:

	TF	RB5 (Conv. 64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x640	0x148
	TF1, bits	2x640	1x148

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF0, TF1)
DL_TFC3	(TF1, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Conversational CS and Interactive Background PS radio bearer. As the Interactive Background UL:384 kbps radio bearer (RB6) has the highest number of transport formats (5 for TTI=10 ms and excluding TF0) then 5 sub-tests have been defined. The selected UL TFCI to achieve test coverage of TF1 to TF5 for RB6 and for TF1 for RB5 is: UL_TFC3 for TF1, UL_TFC5 for TF2, UL_TFC7 for TF3, UL_TFC9 for TF4 and UL_TFC11 for TF5.

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	256	336	DL_TFC1	UL_TFC3	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC12, UL_TFC15	RB5: 640 RB6: 312	RB5: 2x640 RB6: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	5	2047	512							
	11	3	512	256							
	12	6	512	256							
2	1	2	256	256	656	DL_TFC1	UL_TFC5	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC12, UL_TFC17	RB5: 640 RB6: 632	RB5: 2x640 RB6: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	5	1024	1024							
	11	3	256	256							
	12	6	256	256							
3	1	2	512	256	336	DL_TFC1	UL_TFC7	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC7, UL_TFC12, UL_TFC19	RB5: 640 RB6: 1272	RB5: 2x640 RB6: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	5	2047	1024							
	11	3	512	256							
	12	8	512	256							
4	1	2	256	256	656	DL_TFC1	UL_TFC9	DL_TFC0, DL_TFC2,	UL_TFC0, UL_TFC1,	RB5: 640 RB6: 2552	RB5: 2x640 RB6: See note 4
	2	2	256	256							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	3	3	256	256				UL_TFC0, UL_TFC12	UL_TFC2, UL_TFC9, UL_TFC12, UL_TFC21		
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	5	1024	1024							
	11	3	256	256							
12	8	256	256								
5	1	2	256	256	656	DL_TFC1	UL_TFC11	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC11, UL_TFC12, UL_TFC23	RB5: 640 RB6: 3832	RB5: 2x640 RB6: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	5	1024	1024							
	11	3	256	256							
	12	8	256	256							

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: UL_TFC0, UL_TFC1, UL_TFC2, and UL_TFC12 are part of minimum set of TFCs.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

RB6: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.

NOTE 4: The test data size for RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5.

14.6.4.4 Test requirements

See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return 4 RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return 4 RLC SDUs where each SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5.2 sends 4 SDUs of size $(N_{PDU} * \text{MAC-d PDU payload size}) / 4$ minus 8 bits (size of 7 bit length indicator and expansion bit). For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.4a Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.4a.1 Conformance requirement

See 14.6.1.1.

14.6.4a.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.4a.

14.6.4a.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-5 IE “HS-DSCH physical layer category” (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

Initial Conditions

The following RLC Info parameter values shall be set by the SS for the Conversational / unknown / UL:64 DL:64 kbps / CS RAB (RB5):

	RB5 (Conv. 64 kbps)
Uplink RLC TM RLC Segmentation indication Transmission RLC discard CHOICE <i>SDU Discard Mode</i> Timer based no explicit Timer_discard	FALSE 100ms
Downlink RLC TM RLC Segmentation indication	FALSE
NOTE: Timer based discard without explicit signalling is used in uplink to secure that the UE will be able to return data for the case when the UE test loop function will not deliver all the SDUs in one and the same TTI .	

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TF	RB5 (Conv. 64 kbps, 20ms TTI)	RB6 (I/B 64 kbps)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A
	TF3, bits	N/A	3x336	N/A
	TF4, bits	N/A	4x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF0, TF1, TF0)
UL_TFC3	(TF1, TF1, TF0)
UL_TFC4	(TF0, TF2, TF0)
UL_TFC5	(TF1, TF2, TF0)
UL_TFC6	(TF0, TF3, TF0)
UL_TFC7	(TF1, TF3, TF0)
UL_TFC8	(TF0, TF4, TF0)
UL_TFC9	(TF1, TF4, TF0)
UL_TFC10	(TF0, TF0, TF1)
UL_TFC11	(TF1, TF0, TF1)
UL_TFC12	(TF0, TF1, TF1)
UL_TFC13	(TF1, TF1, TF1)
UL_TFC14	(TF0, TF2, TF1)
UL_TFC15	(TF1, TF2, TF1)
UL_TFC16	(TF0, TF3, TF1)
UL_TFC17	(TF1, TF3, TF1)
UL_TFC18	(TF0, TF4, TF1)
UL_TFC19	(TF1, TF4, TF1)

Downlink TFS:

	TF	RB5 (Conv. 64 kbps, 20ms TTI)	DCCH
TFS	TF0, bits	0x640	0x148
	TF1, bits	2x640	1x148

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF0, TF1)
DL_TFC3	(TF1, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Conversational CS and Interactive Background PS radio bearer. As the Interactive Background UL:64 kbps radio bearer (RB6) has the highest number of transport formats (4 excluding TF0) then 4 sub-tests have been defined. The selected UL TFCI to achieve test coverage of TF1 to TF4 for RB6 and for TF1 for RB5 is: UL_TFC3 for TF1, UL_TFC5 for TF2, UL_TFC7 for TF3 and UL_TFC9 for TF4.

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Conversational CS and Interactive Background PS radio bearer. As the Interactive Background UL:64 kbps radio bearer (RB6) has the highest number of transport formats (4 excluding TF0) then 4 sub-tests have been defined. The selected UL TFCI to achieve test coverage of TF1 to TF4 for RB6 and for TF1 for RB5 is: UL_TFC3 for TF1, UL_TFC5 for TF2, UL_TFC7 for TF3 and UL_TFC9 for TF4.

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	128	336	DL_TFC1	UL_TFC3	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC10, UL_TFC13	RB5: 640 RB6: 312	RB5: 2x640 RB6: See note 4
	2	2	512	128							
	3	3	512	128							
	4	3	512	128							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	5	2047	512							
	11	3	1024	128							
	12	6	1024	128							
2	1	2	256	128	656	DL_TFC1	UL_TFC5	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC10, UL_TFC15	RB5: 640 RB6: 632	RB5: 2x640 RB6: See note 4
	2	2	256	128							
	3	3	256	128							
	4	3	256	128							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	5	1024	1024							
	11	3	512	128							
	12	6	512	128							
3	1	2	512	256	336	DL_TFC1	UL_TFC7	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC7, UL_TFC10, UL_TFC17	RB5: 640 RB6: 952	RB5: 2x640 RB6: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	5	2047	1024							
	11	3	1024	128							
	12	8	1024	128							
4	1	2	256	256	656	DL_TFC1	UL_TFC9	DL_TFC0, DL_TFC2, UL_TFC0,	UL_TFC0, UL_TFC1, UL_TFC2,	RB5: 640 RB6: 1272	RB5: 2x640 RB6: See note 4
	2	2	256	256							
	3	3	256	256							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	4	3	256	256				UL_TFC10	UL_TFC9, UL_TFC10, UL_TFC19		
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	5	1024	1024							
	11	3	512	128							
	12	8	512	128							
<p>NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.</p> <p>NOTE 2: UL_TFC0, UL_TFC1, UL_TFC2, and UL_TFC10 are part of minimum set of TFCs.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB6: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit) , where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.</p> <p>NOTE 4: The test data size for RB6 is dependent on the actual TFC test point, see the generic test procedure in 14.1.3.5.</p>											

14.6.4a.4 Test requirements

See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return 4 RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return 4 RLC SDUs where each SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5.2 sends 4 SDUs of size $(N_{\text{PDUs}} * \text{MAC-d PDU payload size}) / 4$ minus 8 bits (size of 7 bit length indicator and expansion bit). For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.5 Interactive or background / UL:384 DL:[Bit rate depending on the UE category] / PS RAB + Interactive or background / UL:384 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.5.1 Conformance requirement

See 14.6.1.1.

14.6.5.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.5.

14.6.5.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TF	RB5 + RB6 (64 kbps RAB, 10 ms TTI)	DCCH
TFS	TF0, bits	0x340	0x148
	TF1, bits	1x340	1x148
	TF2, bits	2x340	N/A
	TF3, bits	4x340	N/A
	TF4, bits	8x340	N/A
	TF5, bits	12x340	N/A

Uplink TFCs:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF5, TF0)
UL_TFC6	(TF0, TF1)
UL_TFC7	(TF1, TF1)
UL_TFC8	(TF2, TF1)
UL_TFC9	(TF3, TF1)
UL_TFC10	(TF4, TF1)
UL_TFC11	(TF5, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the 2 x Interactive Background PS radio bearer. As the 2 x Interactive Background UL:384 kbps radio bearer (RB5+RB6) have 5 transport formats then 5 sub-tests have been defined. The selected UL TFCI to achieve test coverage of TF1 to TF5 for RB5+RB6 is: UL_TFC1 for TF1, UL_TFC2 for TF2, UL_TFC3 for TF3, UL_TFC4 for TF4 and UL_TFC5 for TF5.

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	256	336	N/A	UL_TFC1	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7	RB5: 312 RB6: 312	See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	6	2047	512							
	11	3	512	256							
	12	6	512	256							
2	1	2	256	256	656	N/A	UL_TFC2	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 632 RB6: 632	See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	6	256	256							
3	1	2	512	256	336	N/A	UL_TFC3	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 1272 RB6: 1272	See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	512	256							
	12	8	512	256							
4	1	2	256	256	656	N/A	UL_TFC4	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4,	RB5: 2552 RB6: 2552	See note 4
	2	2	256	256							
	3	3	256	256							

Sub- tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Trans- mission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	4	3	256	256					UL_TFC6, UL_TFC10		
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	8	256	256							
5	1	2	256	256	656	N/A	UL_TFC5	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 3832 RB6: 3832	See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	8	256	256							
<p>NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.</p> <p>NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC6 are part of minimum set of TFCIs.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5 and RB6: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.</p> <p>NOTE 4: The test data size for RB5 and RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5.</p>											

14.6.5.4 Test requirements

See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return 4 RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return 4 RLC SDUs where each SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5.2 sends 4 SDUs of size $(N_{\text{PDU}} * \text{MAC-d PDU payload size}) / 4$ minus 8 bits (size of 7 bit length indicator and expansion bit). For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.5a Interactive or background / UL:64 DL:[Bit rate depending on the UE category] / PS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.5a.1 Conformance requirement

See 14.6.1.1.

14.6.5a.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.5a.

14.6.5a.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TFI	RB5 + RB6 (64 kbps RAB, 20 ms TTI)	DCCH
TFS	TF0, bits	0x340	0x148
	TF1, bits	1x340	1x148
	TF2, bits	2x340	N/A
	TF3, bits	3x340	N/A
	TF4, bits	4x340	N/A

Uplink TFCS:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the 2 x Interactive Background PS radio bearer. As the 2 x Interactive Background UL:64 kbps radio bearer (RB5+RB6) has 4 transport formats then 4 sub-tests have been defined. The selected UL TFCI to achieve test coverage of TF1 to TF4 for RB5+RB6 is: UL_TFC1 for TF1, UL_TFC2 for TF2, UL_TFC3 for TF3 and UL_TFC4 for TF4.

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	128	336	N/A	UL_TFC1	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312 RB6: 312	See note 4
	2	2	512	128							
	3	3	512	128							
	4	3	512	128							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	6	2047	512							
	11	3	512	128							
	12	6	512	128							
2	1	2	256	128	656	N/A	UL_TFC2	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632 RB6: 632	See note 4
	2	2	256	128							
	3	3	256	128							
	4	3	256	128							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	1024	128							
	12	6	1024	128							
3	1	2	512	256	336	N/A	UL_TFC3	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 952 RB6: 952	See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
	12	8	1024	128							
4	1	2	256	256	656	N/A	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1,	RB5: 1272 RB6: 1272	See note 4
	2	2	256	256							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCSs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	3	3	256	256					UL_TFC4, UL_TFC5, UL_TFC9		
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	8	512	128							

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: UL_TFC0, UL_TFC1, UL_TFC2, and UL_TFC10 are part of minimum set of TFCSs.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

RB6: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.

NOTE 4: The test data size for RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5.

14.6.5a.4 Test requirements

See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return 4 RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return 4 RLC SDUs where each SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5.2 sends 4 SDUs of size $(N_{\text{PDUs}} * \text{MAC-d PDU payload size}) / 4$ minus 8 bits (size of 7 bit length indicator and expansion bit). For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.6 Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] kbps / PS RAB + Interactive or background / UL:128 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.6.1 Conformance requirement

See 14.6.1.1.

14.6.6.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.6.

14.6.6.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TF	RB5 (Streaming 128 kbps, 20ms)	RB6 (/B 128 kbps, 20ms)	DCCH
TFS	TF0, bits	0x656	0x336	0x148
	TF1, bits	1x656	1x336	1x148
	TF2, bits	2x656	2x336	N/A
	TF3, bits	4x656	4x336	N/A
	TF4, bits	N/A	8x336	N/A

Uplink TFCS:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF2, TF0, TF0)
UL_TFC3	(TF3, TF0, TF0)
UL_TFC4	(TF0, TF1, TF0)
UL_TFC5	(TF1, TF1, TF0)
UL_TFC6	(TF2, TF1, TF0)
UL_TFC7	(TF3, TF1, TF0)
UL_TFC8	(TF0, TF2, TF0)
UL_TFC9	(TF1, TF2, TF0)
UL_TFC10	(TF2, TF2, TF0)
UL_TFC11	(TF3, TF2, TF0)
UL_TFC12	(TF0, TF3, TF0)
UL_TFC13	(TF1, TF3, TF0)
UL_TFC14	(TF2, TF3, TF0)
UL_TFC15	(TF3, TF3, TF0)
UL_TFC16	(TF0, TF4, TF0)
UL_TFC17	(TF1, TF4, TF0)
UL_TFC18	(TF2, TF4, TF0)
UL_TFC19	(TF3, TF4, TF0)
UL_TFC20	(TF0, TF0, TF1)
UL_TFC21	(TF1, TF0, TF1)
UL_TFC22	(TF2, TF0, TF1)
UL_TFC23	(TF3, TF0, TF1)
UL_TFC24	(TF0, TF1, TF1)
UL_TFC25	(TF1, TF1, TF1)
UL_TFC26	(TF2, TF1, TF1)
UL_TFC27	(TF3, TF1, TF1)
UL_TFC28	(TF0, TF2, TF1)
UL_TFC29	(TF1, TF2, TF1)
UL_TFC30	(TF2, TF2, TF1)
UL_TFC31	(TF3, TF2, TF1)
UL_TFC32	(TF0, TF3, TF1)
UL_TFC33	(TF1, TF3, TF1)
UL_TFC34	(TF2, TF3, TF1)
UL_TFC35	(TF3, TF3, TF1)
UL_TFC36	(TF0, TF4, TF1)
UL_TFC37	(TF1, TF4, TF1)
UL_TFC38	(TF2, TF4, TF1)
UL_TFC39	(TF3, TF4, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Streaming + Interactive Background PS radio bearer. The Streaming UL:128 kbps + Interactive Background UL:128 kbps radio bearer (RB5+RB6) have 40 transport format combinations. As the transport formats where RB5, RB6 or DCCH has no data (TF0 for RB5, RB6 or DCCH) is considered as implicitly tested when the transport format combinations with data is tested then no specific sub-tests for those transport format combinations have been specified. The selected UL TFCI to achieve test coverage of TF1 to TF3 for RB5 and TF1 to TF4 for RB6 is: UL_TFC5 to UL_TFC7, UL_TFC9 to UL_TFC11, UL_TFC13 to UL_TFC15 and UL_TFC17 to UL_TFC19.

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	128	336	N/A	UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC20, UL_TFC21	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC20 , UL_TFC21 , UL_TFC24 , UL_TFC25	RB5: 632 RB6: 312	See note 4
	2	2	512	128							
	3	3	512	128							
	4	3	512	128							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	6	2047	512							
	11	3	1024	128							
	12	6	1024	128							
2	1	2	256	128	656	N/A	UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC6, UL_TFC20 , UL_TFC21 , UL_TFC24 , UL_TFC26	RB5: 1272 RB6: 312	See note 4
	2	2	256	128							
	3	3	256	128							
	4	3	256	128							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	6	512	128							
3	1	2	512	256	336	N/A	UL_TFC7	UL_TFC0, UL_TFC3, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC7, UL_TFC20 , UL_TFC21	RB5: 2552 RB6: 312	See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCS (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	9	8	2047	512					,		
	10	6	2047	1024					UL_TFC24		
	11	3	1024	128					,		
	12	8	1024	128					UL_TFC27		
4	1	2	256	256	656	N/A	UL_TFC9	UL_TFC0, UL_TFC8, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC20	RB5: 632 RB6: 632	See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	8	512	128							
5	1	2	512	256	656	N/A	UL_TFC10	UL_TFC0, UL_TFC2, UL_TFC8, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC8, UL_TFC10	RB5: 1272 RB6: 632	See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
	12	8	1024	128							
6	1	2	256	256	656	N/A	UL_TFC11	UL_TFC0, UL_TFC3, UL_TFC8, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC8, UL_TFC11	RB5: 2552 RB6: 632	See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
								,			
									UL_TFC20		
									,		
									UL_TFC21		
									,		
									UL_TFC24		
									,		
									UL_TFC30		

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCS (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	11	3	512	128					,		
	12	8	512	128					UL_TFC24		
7	1	2	512	256	656	N/A	UL_TFC13	UL_TFC0, UL_TFC1, UL_TFC12, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC12	RB5: 632 RB6: 1272	See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
	12	8	1024	128							
8	1	2	256	256	656	N/A	UL_TFC14	UL_TFC0, UL_TFC2, UL_TFC12, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC12	RB5: 1272 RB6: 1272	See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	8	512	128							
9	1	2	512	256	656	N/A	UL_TFC15	UL_TFC0, UL_TFC3, UL_TFC12, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC12	RB5: 2552 RB6: 1272	See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCS (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)	
	8	8	1536	512					,			
	9	8	2047	512					UL_TFC20			
	10	6	2047	1024					,			UL_TFC21
	11	3	1024	128					,			UL_TFC24
	12	8	1024	128					,			UL_TFC35
10	1	2	256	256	656	N/A	UL_TFC17	UL_TFC0, UL_TFC1, UL_TFC16, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0,	RB5: 632 RB6: 2552	See note 4	
	2	2	256	256					UL_TFC1,			
	3	3	256	256					UL_TFC4,			
	4	3	256	256					UL_TFC16			
	5	6	256	256					,			UL_TFC17
	6	8	256	256					,			UL_TFC20
	7	8	512	512					,			UL_TFC21
	8	8	512	512					,			UL_TFC24
	9	8	1024	512					,			UL_TFC37
	10	6	1024	1024					,			
	11	3	512	128					,			
	12	8	512	128					,			
11	1	2	512	256	656	N/A	UL_TFC18	UL_TFC0, UL_TFC8, UL_TFC16, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0,	RB5: 1272 RB6: 2552	See note 4	
	2	2	512	256					UL_TFC1,			
	3	3	512	256					UL_TFC4,			
	4	3	512	256					UL_TFC8,			
	5	6	512	256					UL_TFC16			
	6	8	512	256					,			UL_TFC18
	7	8	1536	512					,			UL_TFC20
	8	8	1536	512					,			UL_TFC21
	9	8	2047	512					,			UL_TFC24
	10	6	2047	1024					,			UL_TFC38
	11	3	1024	128					,			
	12	8	1024	128					,			
12	1	2	256	256	656	N/A	UL_TFC19	UL_TFC0, UL_TFC3, UL_TFC16, UL_TFC4, UL_TFC20,	UL_TFC0,	RB5: 2552 RB6: 2552	See note 4	
	2	2	256	256					UL_TFC1,			
	3	3	256	256					UL_TFC3,			
	4	3	256	256					UL_TFC4,			
	5	6	256	256					UL_TFC16			

Sub- tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Trans- mission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCS (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	6	8	256	256				UL_TFC6	,		
	7	8	512	512					UL_TFC19		
	8	8	512	512					,		
	9	8	1024	512					UL_TFC20		
	10	6	1024	1024					,		
	11	3	512	128					UL_TFC21		
	12	8	512	128					,		
									UL_TFC24		
									,		
									UL_TFC39		
<p>NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.</p> <p>NOTE 2: UL_TFC0, UL_TFC1, UL_TFC4 and UL_TFC20 are part of minimum set of TFCS. Also the transport format combinations UL_TFC21 and UL_TFC24 using TF1 on either RB5 or RB6 and TF1 on DCCH has been included in the allowed TFCS as those could happen during the sub-test.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5 and RB6: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.</p> <p>NOTE 4: The test data size for RB5 and RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5.</p>											

14.6.6.4 Test requirements

See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return 4 RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return 4 RLC SDUs where each SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5.2 sends 4 SDUs of size $(N_{\text{PDU}_s} * \text{MAC-d PDU payload size}) / 4$ minus 8 bits (size of 7 bit length indicator and expansion bit). For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.6a Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB + Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: QPSK and 16QAM

14.6.6a.1 Conformance requirement

See 14.6.1.1.

14.6.6a.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.6 for the QPSK, 16QAM and non-MIMO case using the downlink enhanced Layer 2 configuration with MAC-ehs and combination of Fixed and Flexible RLC.

14.6.6a.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-7 IE "HS-DSCH physical layer category extension". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB is referred to as RB5. The Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB is referred to as RB6.

The following parameters are specific for this test case and RB5 and RB6:

Parameter	Value
Radio bearer	TS 34.108, clause 6.10.2.4.5.6 using downlink MAC-d flow parameters according to Alt 2 (Fixed RLC and MAC-ehs) for RB5 and MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) for RB6
MAC-ehs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See sub-test table

The generic test procedure in 14.1.3.5a is run for each sub-test for test execution 1 and 2.

Execution counter	Downlink Modulation Scheme (M)	MIMO
1	QPSK	No
2	16QAM	No

Uplink TFS:

	TF	RB5 (Streaming 128 kbps, 20ms)	RB6 (I/B 128 kbps, 20ms)	DCCH
TFS	TF0, bits	0x656	0x336	0x148
	TF1, bits	1x656	1x336	1x148
	TF2, bits	2x656	2x336	N/A
	TF3, bits	4x656	4x336	N/A
	TF4, bits	N/A	8x336	N/A

Uplink TFCS:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF2, TF0, TF0)
UL_TFC3	(TF3, TF0, TF0)
UL_TFC4	(TF0, TF1, TF0)
UL_TFC5	(TF1, TF1, TF0)
UL_TFC6	(TF2, TF1, TF0)
UL_TFC7	(TF3, TF1, TF0)
UL_TFC8	(TF0, TF2, TF0)
UL_TFC9	(TF1, TF2, TF0)
UL_TFC10	(TF2, TF2, TF0)
UL_TFC11	(TF3, TF2, TF0)
UL_TFC12	(TF0, TF3, TF0)
UL_TFC13	(TF1, TF3, TF0)
UL_TFC14	(TF2, TF3, TF0)
UL_TFC15	(TF3, TF3, TF0)
UL_TFC16	(TF0, TF4, TF0)
UL_TFC17	(TF1, TF4, TF0)
UL_TFC18	(TF2, TF4, TF0)
UL_TFC19	(TF3, TF4, TF0)
UL_TFC20	(TF0, TF0, TF1)
UL_TFC21	(TF1, TF0, TF1)
UL_TFC22	(TF2, TF0, TF1)
UL_TFC23	(TF3, TF0, TF1)
UL_TFC24	(TF0, TF1, TF1)
UL_TFC25	(TF1, TF1, TF1)
UL_TFC26	(TF2, TF1, TF1)
UL_TFC27	(TF3, TF1, TF1)
UL_TFC28	(TF0, TF2, TF1)
UL_TFC29	(TF1, TF2, TF1)
UL_TFC30	(TF2, TF2, TF1)
UL_TFC31	(TF3, TF2, TF1)
UL_TFC32	(TF0, TF3, TF1)
UL_TFC33	(TF1, TF3, TF1)
UL_TFC34	(TF2, TF3, TF1)
UL_TFC35	(TF3, TF3, TF1)
UL_TFC36	(TF0, TF4, TF1)
UL_TFC37	(TF1, TF4, TF1)
UL_TFC38	(TF2, TF4, TF1)
UL_TFC39	(TF3, TF4, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Streaming + Interactive Background PS radio bearer. The Streaming UL:128 kbps + Interactive Background UL:128 kbps radio bearer (RB5+RB6) have 40 transport format combinations. As the transport formats where RB5, RB6 or DCCH has no data (TF0 for RB5, RB6 or DCCH) is considered as implicitly tested when the transport format combinations with data is tested then no specific sub-tests for those transport format combinations have been specified. The selected UL TFCI to achieve test coverage of TF1 to TF3 for RB5 and TF1 to TF4 for RB6 is: UL_TFC5 to UL_TFC7, UL_TFC9 to UL_TFC11, UL_TFC13 to UL_TFC15 and UL_TFC17 to UL_TFC19.

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	128	RB5:336 RB6: Flexible	N/A	UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC20, UL_TFC21	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC25	RB5: 632 RB6: 312	See note 4
	2	2	512	128							
	3	3	512	128							
	4	3	512	128							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	6	2047	512							
	11	3	1024	128							
	12	6	1024	128							
	13 - 20	6	2047	512							
2	1	2	256	128	RB5: 656 RB6: Flexible	N/A	UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC6, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC26	RB5: 1272 RB6: 312	See note 4
	2	2	256	128							
	3	3	256	128							
	4	3	256	128							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	6	512	128							
		13 - 20	6	1024							
3	1	2	512	256	RB5:336 RB6: Flexible	N/A	UL_TFC7	UL_TFC0, UL_TFC3, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC7, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC27	RB5: 2552 RB6: 312	See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
		10	6	2047							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	11	3	1024	128							
	12	8	1024	128							
	13 - 20	8	2047	1024							
4	1	2	256	256	RB5: 656 RB6: Flexible	N/A	UL_TFC9	UL_TFC0, UL_TFC8, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC29	RB5: 632 RB6: 632	See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	8	512	128							
13 - 20	8	1024	1024								
5	1	2	512	256	RB5: 656 RB6: Flexible	N/A	UL_TFC10	UL_TFC0, UL_TFC2, UL_TFC8, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC30	RB5: 1272 RB6: 632	See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
	12	8	1024	128							
13 - 20	8	2047	1024								
6	1	2	256	256	RB5: 656 RB6: Flexible	N/A	UL_TFC11	UL_TFC0, UL_TFC3, UL_TFC8, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC8, UL_TFC11, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC31	RB5: 2552 RB6: 632	See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	8	512	128							
13 - 20	8	1024	1024								
7	1	2	512	256	RB5: 656 RB6: Flexible	N/A	UL_TFC13	UL_TFC0, UL_TFC1, UL_TFC12,	UL_TFC0, UL_TFC1, UL_TFC4,	RB5: 632 RB6: 1272	See note 4
	2	2	512	256							
	3	3	512	256							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	4	3	512	256				UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC12, UL_TFC13, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC33		
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
	12	8	1024	128							
13 - 20	8	2047	1024								
8	1	2	256	256	RB5: 656 RB6: Flexible	N/A	UL_TFC14	UL_TFC0, UL_TFC2, UL_TFC12, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC12, UL_TFC14, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC34	RB5: 1272 RB6: 1272	See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	8	512	128							
	13 - 20	8	1024	1024							
9	1	2	512	256	RB5: 656 RB6: Flexible	N/A	UL_TFC15	UL_TFC0, UL_TFC3, UL_TFC12, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC12, UL_TFC15, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC35	RB5: 2552 RB6: 1272	See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
	12	8	1024	128							
	13 - 20	8	2047	1024							
10	1	2	256	256	RB5: 656 RB6: Flexible	N/A	UL_TFC17	UL_TFC0, UL_TFC1, UL_TFC16, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC16, UL_TFC17, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC37	RB5: 632 RB6: 2552	See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	10	6	1024	1024							
	11	3	512	128							
	12	8	512	128							
	13 - 20	8	1024	1024							
11	1	2	512	256	RB5: 656 RB6: Flexible	N/A	UL_TFC18	UL_TFC0, UL_TFC8, UL_TFC16, UL_TFC4, UL_TFC8, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC16, UL_TFC18, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC38	RB5: 1272 RB6: 2552	See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
	12	8	1024	128							
	13 - 20	8	2047	1024							
12	1	2	256	256	RB5: 656 RB6: Flexible	N/A	UL_TFC19	UL_TFC0, UL_TFC3, UL_TFC16, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC16, UL_TFC19, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC39	RB5: 2552 RB6: 2552	See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	8	512	128							
	13 - 20	8	1024	1024							
NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.											
NOTE 2: UL_TFC0, UL_TFC1, UL_TFC4 and UL_TFC20 are part of minimum set of TFCs. Also the transport format combinations UL_TFC21 and UL_TFC24 using TF1 on either RB5 or RB6 and TF1 on DCCH has been included in the allowed TFCs as those could happen during the sub-test.											
NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5 and RB6: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.											
NOTE 4: The test data size for RB5 and RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5a.											

14.6.6a.4 Test requirements

See 14.1.3.5a for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 1 SDU or 4 SDUs depending on the transport block size under tests. For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.6b Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB + Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: 64QAM

14.6.6b.1 Conformance requirement

See 14.6.1.1.

14.6.6b.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.6 for the QPSK, 16QAM and non-MIMO case using the downlink enhanced Layer 2 configuration with MAC-ehs and combination of Fixed and Flexible RLC.

14.6.6b.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-7 IE "HS-DSCH physical layer category extension". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB is referred to as RB5. The Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB is referred to as RB6.

The following parameters are specific for this test case and RB5 and RB6:

Parameter	Value
Radio bearer	TS 34.108, clause 6.10.2.4.5.6 using downlink MAC-d flow parameters according to Alt 2 (Fixed RLC and MAC-ehs) for RB5 and MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) for RB6
MAC-ehs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See sub-test table

The generic test procedure in 14.1.3.5a is run for each sub-test with M=64QAM and non-MIMO case.

Uplink TFS:

	TF	RB5 (Streaming 128 kbps, 20ms)	RB6 (I/B 128 kbps, 20ms)	DCCH
TFS	TF0, bits	0x656	0x336	0x148
	TF1, bits	1x656	1x336	1x148
	TF2, bits	2x656	2x336	N/A
	TF3, bits	4x656	4x336	N/A
	TF4, bits	N/A	8x336	N/A

Uplink TFCS:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF2, TF0, TF0)
UL_TFC3	(TF3, TF0, TF0)
UL_TFC4	(TF0, TF1, TF0)
UL_TFC5	(TF1, TF1, TF0)
UL_TFC6	(TF2, TF1, TF0)
UL_TFC7	(TF3, TF1, TF0)
UL_TFC8	(TF0, TF2, TF0)
UL_TFC9	(TF1, TF2, TF0)
UL_TFC10	(TF2, TF2, TF0)
UL_TFC11	(TF3, TF2, TF0)
UL_TFC12	(TF0, TF3, TF0)
UL_TFC13	(TF1, TF3, TF0)
UL_TFC14	(TF2, TF3, TF0)
UL_TFC15	(TF3, TF3, TF0)
UL_TFC16	(TF0, TF4, TF0)
UL_TFC17	(TF1, TF4, TF0)
UL_TFC18	(TF2, TF4, TF0)
UL_TFC19	(TF3, TF4, TF0)
UL_TFC20	(TF0, TF0, TF1)
UL_TFC21	(TF1, TF0, TF1)
UL_TFC22	(TF2, TF0, TF1)
UL_TFC23	(TF3, TF0, TF1)
UL_TFC24	(TF0, TF1, TF1)
UL_TFC25	(TF1, TF1, TF1)
UL_TFC26	(TF2, TF1, TF1)
UL_TFC27	(TF3, TF1, TF1)
UL_TFC28	(TF0, TF2, TF1)
UL_TFC29	(TF1, TF2, TF1)
UL_TFC30	(TF2, TF2, TF1)
UL_TFC31	(TF3, TF2, TF1)
UL_TFC32	(TF0, TF3, TF1)
UL_TFC33	(TF1, TF3, TF1)
UL_TFC34	(TF2, TF3, TF1)
UL_TFC35	(TF3, TF3, TF1)
UL_TFC36	(TF0, TF4, TF1)
UL_TFC37	(TF1, TF4, TF1)
UL_TFC38	(TF2, TF4, TF1)
UL_TFC39	(TF3, TF4, TF1)

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCSs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	13,14,17,18,19,20	6	2047	512	RB5:336 RB6: Flexible	N/A	UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC20, UL_TFC21	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC25	RB5: 632 RB6: 312	See note 4
2	13,14,17,18,19,20	6	1024	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC4,	UL_TFC0, UL_TFC1, UL_TFC2,	RB5: 1272 RB6: 312	See note 4

								UL_TFC20, UL_TFC6	UL_TFC4, UL_TFC6, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC26		
3	13,14,17,18, 19,20	6	2047	1024	RB5:336 RB6: Flexible	N/A	UL_TFC7	UL_TFC0, UL_TFC3, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC7, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC27	RB5: 2552 RB6: 312	See note 4
4	13,14,17,18, 19,20	6	1024	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC9	UL_TFC0, UL_TFC8, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC29	RB5: 632 RB6: 632	See note 4
5	13,14,17,18, 19,20	6	2047	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC10	UL_TFC0, UL_TFC2, UL_TFC8, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC30	RB5: 1272 RB6: 632	See note 4
6	13,14,17,18, 19,20	6	1024	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC11	UL_TFC0, UL_TFC3, UL_TFC8, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC8, UL_TFC11, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC31	RB5: 2552 RB6: 632	See note 4
7	13,14,17,18, 19,20	6	2047	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC13	UL_TFC0, UL_TFC1, UL_TFC12, UL_TFC4,	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC12,	RB5: 632 RB6: 1272	See note 4

								UL_TFC20, UL_TFC6	UL_TFC13, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC33		
8	13,14,17,18, 19,20	6	1024	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC14	UL_TFC0, UL_TFC2, UL_TFC12, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC12, UL_TFC14, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC34	RB5: 1272 RB6: 1272	See note 4
9	13,14,17,18, 19,20	6	2047	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC15	UL_TFC0, UL_TFC3, UL_TFC12, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC12, UL_TFC15, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC35	RB5: 2552 RB6: 1272	See note 4
10	13,14,17,18, 19,20	6	1024	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC17	UL_TFC0, UL_TFC1, UL_TFC16, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC16, UL_TFC17, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC37	RB5: 632 RB6: 2552	See note 4
11	13,14,17,18, 19,20	6	2047	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC18	UL_TFC0, UL_TFC8, UL_TFC16, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC16, UL_TFC18, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC38	RB5: 1272 RB6: 2552	See note 4
12	13,14,17,18, 19,20	6	1024	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC19	UL_TFC0, UL_TFC3, UL_TFC16, UL_TFC4, UL_TFC20,	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4,	RB5: 2552 RB6: 2552	See note 4

								UL_TFC6	UL_TFC19, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC39		
<p>NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.</p> <p>NOTE 2: UL_TFC0, UL_TFC1, UL_TFC4 and UL_TFC20 are part of minimum set of TFCs. Also the transport format combinations UL_TFC21 and UL_TFC24 using TF1 on either RB5 or RB6 and TF1 on DCCH has been included in the allowed TFCs as those could happen during the sub-test.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5 and RB6: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.</p> <p>NOTE 4: The test data size for RB5 and RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5a.</p>											

14.6.6b.4 Test requirements

See 14.1.3.5a for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 1 SDU or 4 SDUs depending on the transport block size under tests. For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.6c Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB + Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: QPSK, 16QAM and MIMO

14.6.6c.1 Conformance requirement

See 14.6.1.1.

14.6.6c.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.6 for the QPSK, 16QAM and MIMO case using the downlink enhanced Layer 2 configuration with MAC-ehs and combination of Fixed and Flexible RLC.

14.6.6c.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-7 IE "HS-DSCH physical layer category extension". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB is referred to as RB5. The Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB is referred to as RB6.

The following parameters are specific for this test case and RB5 and RB6:

Parameter	Value	Comments
Radio bearer	TS 34.108, clause 6.10.2.4.5.6 using downlink MAC-d flow parameters according to Alt 2 (Fixed RLC and MAC-ehs) for RB5 and MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) for RB6	
MAC-ehs receiver window size	16	
MIMO N_cqi_typeA/M_cqi ratio	1/1	25.331, 10.3.6.41a
Second CPICH pattern	Antenna1 S-CPICH	25.331, 10.3.6.41b
S-CPICH Channelisation code	12	
precodingWeightIndicator, W2	00	25.212, Table 14A
RLC Transmission window size	See sub-test table	
RLC Receiving window size	See sub-test table	

The generic test procedure in 14.1.3.5a is run for each sub-test for test execution 1 and 2.

Execution counter	Downlink Modulation Scheme (M1) MIMO data flow#1	Downlink Modulation Scheme (M2) MIMO data flow#2	MIMO
1	QPSK	QPSK	Yes
2	16QAM	16QAM	Yes
3	16QAM	QPSK	Yes

Uplink TFS:

	TF	RB5 (Streaming 128 kbps, 20ms)	RB6 (/B 128 kbps, 20ms)	DCCH
TFS	TF0, bits	0x656	0x336	0x148
	TF1, bits	1x656	1x336	1x148
	TF2, bits	2x656	2x336	N/A
	TF3, bits	4x656	4x336	N/A
	TF4, bits	N/A	8x336	N/A

Uplink TFCS:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF2, TF0, TF0)
UL_TFC3	(TF3, TF0, TF0)
UL_TFC4	(TF0, TF1, TF0)
UL_TFC5	(TF1, TF1, TF0)
UL_TFC6	(TF2, TF1, TF0)
UL_TFC7	(TF3, TF1, TF0)
UL_TFC8	(TF0, TF2, TF0)
UL_TFC9	(TF1, TF2, TF0)
UL_TFC10	(TF2, TF2, TF0)
UL_TFC11	(TF3, TF2, TF0)
UL_TFC12	(TF0, TF3, TF0)
UL_TFC13	(TF1, TF3, TF0)
UL_TFC14	(TF2, TF3, TF0)
UL_TFC15	(TF3, TF3, TF0)
UL_TFC16	(TF0, TF4, TF0)
UL_TFC17	(TF1, TF4, TF0)
UL_TFC18	(TF2, TF4, TF0)
UL_TFC19	(TF3, TF4, TF0)
UL_TFC20	(TF0, TF0, TF1)
UL_TFC21	(TF1, TF0, TF1)
UL_TFC22	(TF2, TF0, TF1)
UL_TFC23	(TF3, TF0, TF1)
UL_TFC24	(TF0, TF1, TF1)
UL_TFC25	(TF1, TF1, TF1)
UL_TFC26	(TF2, TF1, TF1)
UL_TFC27	(TF3, TF1, TF1)
UL_TFC28	(TF0, TF2, TF1)
UL_TFC29	(TF1, TF2, TF1)
UL_TFC30	(TF2, TF2, TF1)
UL_TFC31	(TF3, TF2, TF1)
UL_TFC32	(TF0, TF3, TF1)
UL_TFC33	(TF1, TF3, TF1)
UL_TFC34	(TF2, TF3, TF1)
UL_TFC35	(TF3, TF3, TF1)
UL_TFC36	(TF0, TF4, TF1)
UL_TFC37	(TF1, TF4, TF1)
UL_TFC38	(TF2, TF4, TF1)
UL_TFC39	(TF3, TF4, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Streaming + Interactive Background PS radio bearer. The Streaming UL:128 kbps + Interactive Background UL:128 kbps radio bearer (RB5+RB6) have 40 transport format combinations. As the transport formats where RB5, RB6 or DCCH has no data (TF0 for RB5, RB6 or DCCH) is considered as implicitly tested when the transport format combinations with data is tested then no specific sub-tests for those transport format combinations have been specified. The selected UL TFCI to achieve test coverage of TF1 to TF3 for RB5 and TF1 to TF4 for RB6 are: UL_TFC5 to UL_TFC7, UL_TFC9 to UL_TFC11, UL_TFC13 to UL_TFC15 and UL_TFC17 to UL_TFC19.

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	15-20	12	2047	512	RB5:336 RB6: Flexible	N/A	UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC20, UL_TFC21	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC25	RB5: 632 RB6: 312	See note 4
2	15-20	12	1024	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC6, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC26	RB5: 1272 RB6: 312	See note 4
3	15-20	16	2047	1024	RB5:336 RB6: Flexible	N/A	UL_TFC7	UL_TFC0, UL_TFC3, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC7, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC27	RB5: 2552 RB6: 312	See note 4
4	15-20	12	1024	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC9	UL_TFC0, UL_TFC8, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC29	RB5: 632 RB6: 632	See note 4
5	15-20	12	2047	1024	RB5: 656	N/A	UL_TFC10	UL_TFC0,	UL_TFC0,	RB5: 1272	See note 4

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
					RB6: Flexible			UL_TFC2, UL_TFC8, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC30	RB6: 632	
6	15-20	12	1024	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC11	UL_TFC0, UL_TFC3, UL_TFC8, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC8, UL_TFC11, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC31	RB5: 2552 RB6: 632	See note 4
7	15-20	12	2047	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC13	UL_TFC0, UL_TFC1, UL_TFC12, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC12, UL_TFC13, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC33	RB5: 632 RB6: 1272	See note 4
8	15-20	12	1024	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC14	UL_TFC0, UL_TFC2, UL_TFC12, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC12, UL_TFC14, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC34	RB5: 1272 RB6: 1272	See note 4
9	15-20	12	2047	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC15	UL_TFC0, UL_TFC3, UL_TFC12, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC12, UL_TFC15, UL_TFC20, UL_TFC21, UL_TFC24,	RB5: 2552 RB6: 1272	See note 4

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCS (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
									UL_TFC35		
10	15-20	12	1024	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC17	UL_TFC0, UL_TFC1, UL_TFC16, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC16, UL_TFC17, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC37	RB5: 632 RB6: 2552	See note 4
11	15-20	12	2047	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC18	UL_TFC0, UL_TFC8, UL_TFC16, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC16, UL_TFC18, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC38	RB5: 1272 RB6: 2552	See note 4
12	15-20	12	1024	1024	RB5: 656 RB6: Flexible	N/A	UL_TFC19	UL_TFC0, UL_TFC3, UL_TFC16, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC16, UL_TFC19, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC39	RB5: 2552 RB6: 2552	See note 4
<p>NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.</p> <p>NOTE 2: UL_TFC0, UL_TFC1, UL_TFC4 and UL_TFC20 are part of minimum set of TFCSs. Also the transport format combinations UL_TFC21 and UL_TFC24 using TF1 on either RB5 or RB6 and TF1 on DCCH has been included in the allowed TFCSs as those could happen during the sub-test.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5 and RB6: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.</p> <p>NOTE 4: The test data size for RB5 and RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5a.</p> <p>NOTE 5: For Subtest 3, when 16QAM/16QAM modulation is executed, test points 33 and above are not applicable.</p>											

14.6.6c.4 Test requirements

See 14.1.3.5a for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 2 SDU or 8 SDUs depending on the transport block size under tests. For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.6d Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB + Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: 64QAM and MIMO

14.6.6d.1 Conformance requirement

See 14.6.1.1.

14.6.6d.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.6 for the 64QAM and MIMO case using the downlink enhanced Layer 2 configuration with MAC-ehs and combination of Fixed and Flexible RLC.

14.6.6d.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-7 IE "HS-DSCH physical layer category extension". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB is referred to as RB5. The Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB is referred to as RB6.

The following parameters are specific for this test case and RB5 and RB6:

Parameter	Value	Comments
Radio bearer	TS 34.108, clause 6.10.2.4.5.6 using downlink MAC-d flow parameters according to Alt 2 (Fixed RLC and MAC-ehs) for RB5 and MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) for RB6	
MAC-ehs receiver window size	16	
MIMO N_cqi_typeA/M_cqi ratio	1/1	25.331, 10.3.6.41a
Second CPICH pattern	Antenna1 S-CPICH	25.331, 10.3.6.41b
S-CPICH Channelisation code	12	
precodingWeight2	00	25.212, Table 14A
RLC Transmission window size	See sub-test table	
RLC Receiving window size	See sub-test table	

The generic test procedure in 14.1.3.5a is run for each sub-test for test execution 1 to 3.

Execution counter	Downlink Modulation Scheme (M1) MIMO data flow#1	Downlink Modulation Scheme (M2) MIMO data flow#2	Number of HARQ processes	MIMO
1	64QAM	QPSK	12	Yes
2	64QAM	16QAM	12	Yes
3	64QAM	64QAM	12	Yes

Uplink TFS:

	TF	RB5 (Streaming 128 kbps, 20ms)	RB6 (/B 128 kbps, 20ms)	DCCH
TFS	TF0, bits	0x656	0x336	0x148
	TF1, bits	1x656	1x336	1x148
	TF2, bits	2x656	2x336	N/A
	TF3, bits	4x656	4x336	N/A
	TF4, bits	N/A	8x336	N/A

Uplink TFCS:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF2, TF0, TF0)
UL_TFC3	(TF3, TF0, TF0)
UL_TFC4	(TF0, TF1, TF0)
UL_TFC5	(TF1, TF1, TF0)
UL_TFC6	(TF2, TF1, TF0)
UL_TFC7	(TF3, TF1, TF0)
UL_TFC8	(TF0, TF2, TF0)
UL_TFC9	(TF1, TF2, TF0)
UL_TFC10	(TF2, TF2, TF0)
UL_TFC11	(TF3, TF2, TF0)
UL_TFC12	(TF0, TF3, TF0)
UL_TFC13	(TF1, TF3, TF0)
UL_TFC14	(TF2, TF3, TF0)
UL_TFC15	(TF3, TF3, TF0)
UL_TFC16	(TF0, TF4, TF0)
UL_TFC17	(TF1, TF4, TF0)
UL_TFC18	(TF2, TF4, TF0)
UL_TFC19	(TF3, TF4, TF0)
UL_TFC20	(TF0, TF0, TF1)
UL_TFC21	(TF1, TF0, TF1)
UL_TFC22	(TF2, TF0, TF1)
UL_TFC23	(TF3, TF0, TF1)
UL_TFC24	(TF0, TF1, TF1)
UL_TFC25	(TF1, TF1, TF1)
UL_TFC26	(TF2, TF1, TF1)
UL_TFC27	(TF3, TF1, TF1)
UL_TFC28	(TF0, TF2, TF1)
UL_TFC29	(TF1, TF2, TF1)
UL_TFC30	(TF2, TF2, TF1)
UL_TFC31	(TF3, TF2, TF1)
UL_TFC32	(TF0, TF3, TF1)
UL_TFC33	(TF1, TF3, TF1)
UL_TFC34	(TF2, TF3, TF1)
UL_TFC35	(TF3, TF3, TF1)
UL_TFC36	(TF0, TF4, TF1)
UL_TFC37	(TF1, TF4, TF1)
UL_TFC38	(TF2, TF4, TF1)
UL_TFC39	(TF3, TF4, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Streaming + Interactive Background PS radio bearer. The Streaming UL:128 kbps + Interactive Background UL:128 kbps radio bearer (RB5+RB6) have 40 transport format combinations. As the transport formats where RB5, RB6 or DCCH has no data (TF0 for RB5, RB6 or DCCH) is considered as implicitly tested when the transport format combinations with data is tested then no specific sub-tests for those transport format combinations have been specified.

Sub-tes	UE Category	RLC Receiving window size (note 1)	RLC Trans-mission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	19 and 20	2047	1024	RB5: 656 RB6: Flexible	UL_TFC19	UL_TFC0, UL_TFC3, UL_TFC16, UL_TFC4, UL_TFC20, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC16, UL_TFC19, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC39	RB5: 2552 RB6: 2552	See note 4
<p>NOTE 1: The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.</p> <p>NOTE 2: UL_TFC0, UL_TFC1, UL_TFC4 and UL_TFC20 are part of minimum set of TFCIs. Also the transport format combinations UL_TFC21 and UL_TFC24 using TF1 on either RB5 or RB6 and TF1 on DCCH has been included in the allowed TFCs as those could happen during the sub-test.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5 and RB6: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return one complete UL RLC SDU per UL TTI.</p> <p>NOTE 4: The test data size and number of DL RLC SDUs for RB5 and RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5a.</p>									

14.6.6d.4 Test requirements

See 14.1.3.5a for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 2 SDU or 8 SDUs depending on the transport block size under tests.

14.6.6e Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB + Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: QPSK, 16QAM and Dual-Cell

14.6.6e.1 Conformance requirement

See 14.6.1.1.

14.6.6e.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.6 for the QPSK, 16QAM and Dual-Cell case using the downlink enhanced Layer 2 configuration with MAC-ehs and combination of Fixed and Flexible RLC.

14.6.6e.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-8 IE "HS-DSCH physical layer category extension 2". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB is referred to as RB5. The Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB is referred to as RB6.

The following parameters are specific for this test case and RB5 and RB6:

Parameter	Value	Comments
Radio bearer	TS 34.108, clause 6.10.2.4.5.6 using downlink MAC-d flow parameters according to Alt 2 (Fixed RLC and MAC-ehs) for RB5 and MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) for RB6	
MAC-ehs receiver window size	16	
RLC Transmission window size	See sub-test table	
RLC Receiving window size	See sub-test table	

The generic test procedure in 14.1.3.5a is run for each sub-test for test execution 1 to 3.

Execution counter	Downlink Modulation Scheme (M1) Dual-Cell data flow#1	Downlink Modulation Scheme (M2) Dual-Cell data flow#2	Number of HARQ processes	Dual-Cell
1	QPSK	QPSK	6	Yes
2	16QAM	16QAM	8	Yes
3	16QAM	QPSK	8	Yes

Uplink TFS:

	TF	RB5 (Streaming 128 kbps, 20ms)	RB6 (/B 128 kbps, 20ms)	DCCH
TFS	TF0, bits	0x656	0x336	0x148
	TF1, bits	1x656	1x336	1x148
	TF2, bits	2x656	2x336	N/A
	TF3, bits	4x656	4x336	N/A
	TF4, bits	N/A	8x336	N/A

Uplink TFCs:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF2, TF0, TF0)
UL_TFC3	(TF3, TF0, TF0)
UL_TFC4	(TF0, TF1, TF0)
UL_TFC5	(TF1, TF1, TF0)
UL_TFC6	(TF2, TF1, TF0)
UL_TFC7	(TF3, TF1, TF0)
UL_TFC8	(TF0, TF2, TF0)
UL_TFC9	(TF1, TF2, TF0)
UL_TFC10	(TF2, TF2, TF0)
UL_TFC11	(TF3, TF2, TF0)
UL_TFC12	(TF0, TF3, TF0)
UL_TFC13	(TF1, TF3, TF0)
UL_TFC14	(TF2, TF3, TF0)
UL_TFC15	(TF3, TF3, TF0)
UL_TFC16	(TF0, TF4, TF0)
UL_TFC17	(TF1, TF4, TF0)
UL_TFC18	(TF2, TF4, TF0)
UL_TFC19	(TF3, TF4, TF0)
UL_TFC20	(TF0, TF0, TF1)
UL_TFC21	(TF1, TF0, TF1)
UL_TFC22	(TF2, TF0, TF1)
UL_TFC23	(TF3, TF0, TF1)
UL_TFC24	(TF0, TF1, TF1)
UL_TFC25	(TF1, TF1, TF1)
UL_TFC26	(TF2, TF1, TF1)
UL_TFC27	(TF3, TF1, TF1)
UL_TFC28	(TF0, TF2, TF1)
UL_TFC29	(TF1, TF2, TF1)
UL_TFC30	(TF2, TF2, TF1)
UL_TFC31	(TF3, TF2, TF1)
UL_TFC32	(TF0, TF3, TF1)
UL_TFC33	(TF1, TF3, TF1)
UL_TFC34	(TF2, TF3, TF1)
UL_TFC35	(TF3, TF3, TF1)
UL_TFC36	(TF0, TF4, TF1)
UL_TFC37	(TF1, TF4, TF1)
UL_TFC38	(TF2, TF4, TF1)
UL_TFC39	(TF3, TF4, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Streaming + Interactive Background PS radio bearer. The Streaming UL:128 kbps + Interactive Background UL:128 kbps radio bearer (RB5+RB6) have 40 transport format combinations. As the transport formats where RB5, RB6 or DCCH has no data (TF0 for RB5, RB6 or DCCH) is considered as implicitly tested when the transport format combinations with data is tested then no specific sub-tests for those transport format combinations have been specified.

Sub-tes	UE Category	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	21 to 24	2047	1024	RB5: 656 RB6: Flexible	UL_TFC19	UL_TFC0, UL_TFC3, UL_TFC16, UL_TFC20,	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC16, UL_TFC19, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC39	RB5: 2552 RB6: 2552	See note 4
<p>NOTE 1: The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.</p> <p>NOTE 2: UL_TFC0, UL_TFC1, UL_TFC4 and UL_TFC20 are part of minimum set of TFCs. Also the transport format combinations UL_TFC21 and UL_TFC24 using TF1 on either RB5 or RB6 and TF1 on DCCH has been included in the allowed TFCs as those could happen during the sub-test.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5 and RB6: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.</p> <p>NOTE 4: The test data size for RB5 and RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5a.</p>									

14.6.6e.4 Test requirements

See 14.1.3.5a for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 2 SDU or 8 SDUs depending on the transport block size under tests.

14.6.6f Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB + Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: 64QAM and Dual-Cell

14.6.6f.1 Conformance requirement

See 14.6.1.1.

14.6.6f.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.6 for the 64QAM and Dual-Cell case using the downlink enhanced Layer 2 configuration with MAC-ehs and combination of Fixed and Flexible RLC.

14.6.6f.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-8 IE "HS-DSCH physical layer category extension 2". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB is referred to as RB5. The Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB is referred to as RB6.

The following parameters are specific for this test case and RB5 and RB6:

Parameter	Value	Comments
Radio bearer	TS 34.108, clause 6.10.2.4.5.6 using downlink MAC-d flow parameters according to Alt 2 (Fixed RLC and MAC-ehs) for RB5 and MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) for RB6	
MAC-ehs receiver window size	16	
RLC Transmission window size	See sub-test table	
RLC Receiving window size	See sub-test table	

The generic test procedure in 14.1.3.5a is run for each sub-test for test execution 1 to 3.

Execution counter	Downlink Modulation Scheme (M1) Dual-Cell data flow#1	Downlink Modulation Scheme (M2) Dual-Cell data flow#2	Number of HARQ processes	Dual-Cell
1	64QAM	QPSK	6	Yes
2	64QAM	16QAM	6	Yes
3	64QAM	64QAM	6	Yes

Uplink TFS:

	TFI	RB5 (Streaming 128 kbps, 20ms)	RB6 (/B 128 kbps, 20ms)	DCCH
TFS	TF0, bits	0x656	0x336	0x148
	TF1, bits	1x656	1x336	1x148
	TF2, bits	2x656	2x336	N/A
	TF3, bits	4x656	4x336	N/A
	TF4, bits	N/A	8x336	N/A

Uplink TFCs:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF2, TF0, TF0)
UL_TFC3	(TF3, TF0, TF0)
UL_TFC4	(TF0, TF1, TF0)
UL_TFC5	(TF1, TF1, TF0)
UL_TFC6	(TF2, TF1, TF0)
UL_TFC7	(TF3, TF1, TF0)
UL_TFC8	(TF0, TF2, TF0)
UL_TFC9	(TF1, TF2, TF0)
UL_TFC10	(TF2, TF2, TF0)
UL_TFC11	(TF3, TF2, TF0)
UL_TFC12	(TF0, TF3, TF0)
UL_TFC13	(TF1, TF3, TF0)
UL_TFC14	(TF2, TF3, TF0)
UL_TFC15	(TF3, TF3, TF0)
UL_TFC16	(TF0, TF4, TF0)
UL_TFC17	(TF1, TF4, TF0)
UL_TFC18	(TF2, TF4, TF0)
UL_TFC19	(TF3, TF4, TF0)
UL_TFC20	(TF0, TF0, TF1)
UL_TFC21	(TF1, TF0, TF1)
UL_TFC22	(TF2, TF0, TF1)
UL_TFC23	(TF3, TF0, TF1)
UL_TFC24	(TF0, TF1, TF1)
UL_TFC25	(TF1, TF1, TF1)
UL_TFC26	(TF2, TF1, TF1)
UL_TFC27	(TF3, TF1, TF1)
UL_TFC28	(TF0, TF2, TF1)
UL_TFC29	(TF1, TF2, TF1)
UL_TFC30	(TF2, TF2, TF1)
UL_TFC31	(TF3, TF2, TF1)
UL_TFC32	(TF0, TF3, TF1)
UL_TFC33	(TF1, TF3, TF1)
UL_TFC34	(TF2, TF3, TF1)
UL_TFC35	(TF3, TF3, TF1)
UL_TFC36	(TF0, TF4, TF1)
UL_TFC37	(TF1, TF4, TF1)
UL_TFC38	(TF2, TF4, TF1)
UL_TFC39	(TF3, TF4, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Streaming + Interactive Background PS radio bearer. The Streaming UL:128 kbps + Interactive Background UL:128 kbps radio bearer (RB5+RB6) have 40 transport format combinations. As the transport formats where RB5, RB6 or DCCH has no data (TF0 for RB5, RB6 or DCCH) is considered as implicitly tested when the transport format combinations with data is tested then no specific sub-tests for those transport format combinations have been specified.

Sub-tes	UE Category	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	23 and 24	2047	1024	RB5: 656 RB6: Flexible	UL_TFC19	UL_TFC0, UL_TFC3, UL_TFC16, UL_TFC20,	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC16, UL_TFC19, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC39	RB5: 2552 RB6: 2552	See note 4
<p>NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category.</p> <p>NOTE 2: UL_TFC0, UL_TFC1, UL_TFC4 and UL_TFC20 are part of minimum set of TFCIs. Also the transport format combinations UL_TFC21 and UL_TFC24 using TF1 on either RB5 or RB6 and TF1 on DCCH has been included in the allowed TFCs as those could happen during the sub-test.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5 and RB6: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit) , where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.</p> <p>NOTE 4: The test data size for RB5 and RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5a.</p>									

14.6.6f.4 Test requirements

See 14.1.3.5a for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 2 SDU or 8 SDUs depending on the transport block size under tests.

14.6.6g Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB + Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: combination of 16QAM, Dual-Carrier and MIMO

14.6.6g.1 Conformance requirement

See 14.6.1.1.

14.6.6g.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.6 for the 16QAM, MIMO and Dual-Cell case using the downlink enhanced Layer 2 configuration with Flexible RLC and MAC-ehs .

14.6.6g.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-9 IE "HS-DSCH physical layer category extension 3". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB is referred to as RB5. The Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB is referred to as RB6.

The following parameters are specific for this test case and RB5 and RB6:

Parameter	Value	Comments
Radio bearer	TS 34.108, clause 6.10.2.4.5.6 using downlink MAC-d flow parameters according to Alt 2 (Fixed RLC and MAC-ehs) for RB5 and using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) for RB6.	
MAC-ehs receiver window size	64	
precodingWeight2	00	25.212, Table 14A
RLC Transmission window size	See sub-test table	
RLC Receiving window size	See sub-test table	

Execution counter	Dual-Cell#1		Dual-Cell#2		Number of HARQ processes
	Downlink Modulation Scheme (M1) For Cell#1 data flow#1	Downlink Modulation Scheme (M2) For Cell#1 data flow#2	Downlink Modulation Scheme (M3) For Cell#2 data flow#1	Downlink Modulation Scheme (M4) For Cell#2 data flow#2	
1	16QAM	16QAM	16QAM	16QAM	12

Uplink TFS:

	TF	RB5 (Streaming 128 kbps, 20ms)	RB6 (I/B 128 kbps, 20ms)	DCCH
TFS	TF0, bits	0x656	0x336	0x148
	TF1, bits	1x656	1x336	1x148
	TF2, bits	2x656	2x336	N/A
	TF3, bits	4x656	4x336	N/A
	TF4, bits	N/A	8x336	N/A

Uplink TFCS:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF2, TF0, TF0)
UL_TFC3	(TF3, TF0, TF0)
UL_TFC4	(TF0, TF1, TF0)
UL_TFC5	(TF1, TF1, TF0)
UL_TFC6	(TF2, TF1, TF0)
UL_TFC7	(TF3, TF1, TF0)
UL_TFC8	(TF0, TF2, TF0)
UL_TFC9	(TF1, TF2, TF0)
UL_TFC10	(TF2, TF2, TF0)
UL_TFC11	(TF3, TF2, TF0)
UL_TFC12	(TF0, TF3, TF0)
UL_TFC13	(TF1, TF3, TF0)
UL_TFC14	(TF2, TF3, TF0)
UL_TFC15	(TF3, TF3, TF0)
UL_TFC16	(TF0, TF4, TF0)
UL_TFC17	(TF1, TF4, TF0)
UL_TFC18	(TF2, TF4, TF0)
UL_TFC19	(TF3, TF4, TF0)
UL_TFC20	(TF0, TF0, TF1)
UL_TFC21	(TF1, TF0, TF1)
UL_TFC22	(TF2, TF0, TF1)
UL_TFC23	(TF3, TF0, TF1)
UL_TFC24	(TF0, TF1, TF1)
UL_TFC25	(TF1, TF1, TF1)
UL_TFC26	(TF2, TF1, TF1)
UL_TFC27	(TF3, TF1, TF1)
UL_TFC28	(TF0, TF2, TF1)
UL_TFC29	(TF1, TF2, TF1)
UL_TFC30	(TF2, TF2, TF1)
UL_TFC31	(TF3, TF2, TF1)
UL_TFC32	(TF0, TF3, TF1)
UL_TFC33	(TF1, TF3, TF1)
UL_TFC34	(TF2, TF3, TF1)
UL_TFC35	(TF3, TF3, TF1)
UL_TFC36	(TF0, TF4, TF1)
UL_TFC37	(TF1, TF4, TF1)
UL_TFC38	(TF2, TF4, TF1)
UL_TFC39	(TF3, TF4, TF1)

The generic test procedure in 14.1.3.5a is run for each sub-test.

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Streaming + Interactive Background PS radio bearer. The Streaming UL:128 kbps + Interactive Background UL:128 kbps radio bearer (RB5+RB6) have 40 transport format combinations. As the transport formats where RB5, RB6 or DCCH has no data (TF0 for RB5, RB6 or DCCH) is considered as implicitly tested when the transport format combinations with data is tested then no specific sub-tests for those transport format combinations have been specified.

Sub-tes	UE Category	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	25 to 28	2047	1024	RB5: 656 RB6: Flexible	UL_TFC19	UL_TFC0, UL_TFC3, UL_TFC16, UL_TFC20	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC16, UL_TFC19, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC39	RB5: 2552 RB6: 2552	See note 4
<p>NOTE 1: The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.</p> <p>NOTE 2: UL_TFC0, UL_TFC1, UL_TFC4 and UL_TFC20 are part of minimum set of TFCIs. Also the transport format combinations UL_TFC21 and UL_TFC24 using TF1 on either RB5 or RB6 and TF1 on DCCH has been included in the allowed TFCs as those could happen during the sub-test.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5 and RB6: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.</p> <p>NOTE 4: The test data size for RB5 and RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5a.</p>									

14.6.6g.4 Test requirements

See 14.1.3.5a for definition of the referenced step numbers.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
- At step 18 and for each TFRC test point:

The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 4 SDU or 16 SDUs depending on the transport block size under tests.

14.6.6h Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB + Interactive or background / UL:128 DL: [max bit rate depending on UE category] with Flexible RLC and MAC-ehs / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / DL: combination of 64QAM, Dual-Carrier and MIMO

14.6.6h.1 Conformance requirement

See 14.6.1.1.

14.6.6h.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.6 for the 64QAM, MIMO and Dual-Cell case using the downlink enhanced Layer 2 configuration with Flexible RLC and MAC-ehs .

14.6.6h.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-9 IE “HS-DSCH physical layer category extension 3”. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value	Comments
Radio bearer	TS 34.108, clause 6.10.2.4.5.6 using downlink MAC-d flow parameters according to Alt 2 (Fixed RLC and MAC-ehs) for RB5 and using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) for RB6.	
MAC-ehs receiver window size	64	
precodingWeight2	00	25.212, Table 14A
RLC Transmission window size	See sub-test table	
RLC Receiving window size	See sub-test table	

The generic test procedure in 14.1.3.5a is run for each sub-test for test execution 1 to 3.

Execution counter	Dual-Cell #1		Dual-Cell #2		Number of HARQ processes
	Downlink Modulation Scheme (M1) For Cell 1 data flow#1	Downlink Modulation Scheme (M2) For Cell 1 data flow#2	Downlink Modulation Scheme (M3) For Cell 2 data flow#1	Downlink Modulation Scheme (M4) For Cell 2 data flow#2	
1	64QAM	16QAM	64QAM	16QAM	12
2	64QAM	64QAM	64QAM	64QAM	12

Uplink TFS:

	TFI	RB5 (Streaming 128 kbps, 20ms)	RB6 (I/B 128 kbps, 20ms)	DCCH
TFS	TF0, bits	0x656	0x336	0x148
	TF1, bits	1x656	1x336	1x148
	TF2, bits	2x656	2x336	N/A
	TF3, bits	4x656	4x336	N/A
	TF4, bits	N/A	8x336	N/A

Uplink TFCS:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF2, TF0, TF0)
UL_TFC3	(TF3, TF0, TF0)
UL_TFC4	(TF0, TF1, TF0)
UL_TFC5	(TF1, TF1, TF0)
UL_TFC6	(TF2, TF1, TF0)
UL_TFC7	(TF3, TF1, TF0)
UL_TFC8	(TF0, TF2, TF0)
UL_TFC9	(TF1, TF2, TF0)
UL_TFC10	(TF2, TF2, TF0)
UL_TFC11	(TF3, TF2, TF0)
UL_TFC12	(TF0, TF3, TF0)
UL_TFC13	(TF1, TF3, TF0)
UL_TFC14	(TF2, TF3, TF0)
UL_TFC15	(TF3, TF3, TF0)
UL_TFC16	(TF0, TF4, TF0)
UL_TFC17	(TF1, TF4, TF0)
UL_TFC18	(TF2, TF4, TF0)
UL_TFC19	(TF3, TF4, TF0)
UL_TFC20	(TF0, TF0, TF1)
UL_TFC21	(TF1, TF0, TF1)
UL_TFC22	(TF2, TF0, TF1)
UL_TFC23	(TF3, TF0, TF1)
UL_TFC24	(TF0, TF1, TF1)
UL_TFC25	(TF1, TF1, TF1)
UL_TFC26	(TF2, TF1, TF1)
UL_TFC27	(TF3, TF1, TF1)
UL_TFC28	(TF0, TF2, TF1)
UL_TFC29	(TF1, TF2, TF1)
UL_TFC30	(TF2, TF2, TF1)
UL_TFC31	(TF3, TF2, TF1)
UL_TFC32	(TF0, TF3, TF1)
UL_TFC33	(TF1, TF3, TF1)
UL_TFC34	(TF2, TF3, TF1)
UL_TFC35	(TF3, TF3, TF1)
UL_TFC36	(TF0, TF4, TF1)
UL_TFC37	(TF1, TF4, TF1)
UL_TFC38	(TF2, TF4, TF1)
UL_TFC39	(TF3, TF4, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Streaming + Interactive Background PS radio bearer. The Streaming UL:128 kbps + Interactive Background UL:128 kbps radio bearer (RB5+RB6) have 40 transport format combinations. As the transport formats where RB5, RB6 or DCCH has no data (TF0 for RB5, RB6 or DCCH) is considered as implicitly tested when the transport format combinations with data is tested then no specific sub-tests for those transport format combinations have been specified.

Sub-tes	UE Category	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	27 and 28	2047	1024	RB5: 656 RB6: Flexible	UL_TFC19	UL_TFC0, UL_TFC3, UL_TFC16, UL_TFC20	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC16, UL_TFC19, UL_TFC20, UL_TFC21, UL_TFC24, UL_TFC39	RB5: 2552 RB6: 2552	See note 4
<p>NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category.</p> <p>NOTE 2: UL_TFC0, UL_TFC1, UL_TFC4 and UL_TFC20 are part of minimum set of TFCIs. Also the transport format combinations UL_TFC21 and UL_TFC24 using TF1 on either RB5 or RB6 and TF1 on DCCH has been included in the allowed TFCs as those could happen during the sub-test.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5 and RB6: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.</p> <p>NOTE 4: The test data size for RB5 and RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5a.</p>									

14.6.6h.4 Test requirements

See 14.1.3.5a for definition of the referenced step numbers.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
- At step 18 and for each TFRC test point:
The UE shall for each radio bearer return the equal number RLC SDUs as sent by the SS in downlink. If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return RLC SDUs where the SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5a sends either 4 SDU or 16 SDUs depending on the transport block size under tests.

14.6.7 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:128 DL: [guaranteed 128, max bit rate depending on UE category] kbps / PS RAB + Interactive or background / UL:128 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.7.1 Conformance requirement

See 14.6.1.1.

14.6.7.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.7.

14.6.7.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-5 IE “HS-DSCH physical layer category” (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (Streaming 128 kbps, 20ms)	RB9 (I/B 128 kbps, 20ms)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x656	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x656	1x336	1x148
	TF2, bits	1x81	N/A	N/A	2x656	2x336	N/A
	TF3, bits	N/A	N/A	N/A	4x656	4x336	N/A
	TF4, bits	N/A	N/A	N/A	N/A	8x336	N/A

Uplink TFCS:

TFCI	(RB5 + RB6 + RB7 + RB8 + RB9, DCCH)
UL_TFC0	(TF0,TF0,TF0,TF0,TF0,TF0)
UL_TFC1	(TF1,TF0,TF0,TF0,TF0,TF0)
UL_TFC2	(TF2,TF1,TF1,TF0,TF0,TF0)
UL_TFC3	(TF0,TF0,TF0,TF1,TF0,TF0)
UL_TFC4	(TF0,TF0,TF0,TF0,TF1,TF0)
UL_TFC5	(TF0,TF0,TF0,TF2,TF1,TF0)
UL_TFC6	(TF1,TF0,TF0,TF2,TF1,TF0)
UL_TFC7	(TF2,TF1,TF1,TF2,TF1,TF0)
UL_TFC8	(TF0,TF0,TF0,TF3,TF1,TF0)
UL_TFC9	(TF1,TF0,TF0,TF3,TF1,TF0)
UL_TFC10	(TF2,TF1,TF1,TF3,TF1,TF0)
UL_TFC11	(TF0,TF0,TF0,TF2,TF2,TF0)
UL_TFC12	(TF1,TF0,TF0,TF2,TF2,TF0)
UL_TFC13	(TF2,TF1,TF1,TF2,TF2,TF0)
UL_TFC14	(TF0,TF0,TF0,TF3,TF2,TF0)
UL_TFC15	(TF1,TF0,TF0,TF3,TF2,TF0)
UL_TFC16	(TF2,TF1,TF1,TF3,TF2,TF0)
UL_TFC17	(TF0,TF0,TF0,TF1,TF3,TF0)
UL_TFC18	(TF1,TF0,TF0,TF1,TF3,TF0)
UL_TFC19	(TF2,TF1,TF1,TF1,TF3,TF0)
UL_TFC20	(TF0,TF0,TF0,TF2,TF3,TF0)
UL_TFC21	(TF1,TF0,TF0,TF2,TF3,TF0)
UL_TFC22	(TF2,TF1,TF1,TF2,TF3,TF0)
UL_TFC23	(TF0,TF0,TF0,TF3,TF3,TF0)
UL_TFC24	(TF1,TF0,TF0,TF3,TF3,TF0)
UL_TFC25	(TF2,TF1,TF1,TF3,TF3,TF0)
UL_TFC26	(TF0,TF0,TF0,TF2,TF4,TF0)
UL_TFC27	(TF1,TF0,TF0,TF2,TF4,TF0)
UL_TFC28	(TF2,TF1,TF1,TF2,TF4,TF0)
UL_TFC29	(TF0,TF0,TF0,TF3,TF4,TF0)
UL_TFC30	(TF1,TF0,TF0,TF3,TF4,TF0)
UL_TFC31	(TF2,TF1,TF1,TF3,TF4,TF0)
UL_TFC32	(TF0,TF0,TF0,TF0,TF0,TF1)
UL_TFC33	(TF1,TF0,TF0,TF0,TF0,TF1)
UL_TFC34	(TF2,TF1,TF1,TF0,TF0,TF1)
UL_TFC35	(TF0,TF0,TF0,TF2,TF1,TF1)
UL_TFC36	(TF1,TF0,TF0,TF2,TF1,TF1)
UL_TFC37	(TF2,TF1,TF1,TF2,TF1,TF1)
UL_TFC38	(TF0,TF0,TF0,TF3,TF1,TF1)
UL_TFC39	(TF1,TF0,TF0,TF3,TF1,TF1)
UL_TFC40	(TF2,TF1,TF1,TF3,TF1,TF1)
UL_TFC41	(TF0,TF0,TF0,TF2,TF2,TF1)
UL_TFC42	(TF1,TF0,TF0,TF2,TF2,TF1)
UL_TFC43	(TF2,TF1,TF1,TF2,TF2,TF1)
UL_TFC44	(TF0,TF0,TF0,TF3,TF2,TF1)
UL_TFC45	(TF1,TF0,TF0,TF3,TF2,TF1)
UL_TFC46	(TF2,TF1,TF1,TF3,TF2,TF1)
UL_TFC47	(TF0,TF0,TF0,TF1,TF3,TF1)
UL_TFC48	(TF1,TF0,TF0,TF1,TF3,TF1)
UL_TFC49	(TF2,TF1,TF1,TF1,TF3,TF1)
UL_TFC50	(TF0,TF0,TF0,TF2,TF3,TF1)
UL_TFC51	(TF1,TF0,TF0,TF2,TF3,TF1)
UL_TFC52	(TF2,TF1,TF1,TF2,TF3,TF1)

UL_TFC53	(TF0,TF0,TF0,TF3,TF3,TF1)
UL_TFC54	(TF1,TF0,TF0,TF3,TF3,TF1)
UL_TFC55	(TF2,TF1,TF1,TF3,TF3,TF1)
UL_TFC56	(TF0,TF0,TF0,TF2,TF4,TF1)
UL_TFC57	(TF1,TF0,TF0,TF2,TF4,TF1)
UL_TFC58	(TF2,TF1,TF1,TF2,TF4,TF1)
UL_TFC59	(TF0,TF0,TF0,TF3,TF4,TF1)
UL_TFC60	(TF1,TF0,TF0,TF3,TF4,TF1)
UL_TFC61	(TF2,TF1,TF1,TF3,TF4,TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x148
	TF1, bits	1x39	1x103	1x60	1x148
	TF2, bits	1x81	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF1, TF0)
DL_TFC3	(TF0, TF0, TF0, TF1)
DL_TFC4	(TF1, TF0, TF0, TF1)
DL_TFC5	(TF2, TF1, TF1, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Speech + Streaming + Interactive Background PS radio bearer. The CS speech 12.2 kbps + Streaming UL:128 kbps + Interactive Background UL:128 kbps radio bearer (RB5+RB6+RB7+RB8+RB9) have 62 transport format combinations. As the transport formats where RB5, RB6, RB7, RB8, RB9 or DCCH has no data (TF0 for RB5, RB6, RB7, RB8, RB9 or DCCH) is considered as implicitly tested when the transport format combinations with data is tested then no specific sub-tests for those transport format combinations have been specified. The selected UL TFCI to achieve test coverage of TF1 to TF3 for RB8 and TF1 to TF4 for RB9 are: UL_TFC3, UL_TFC6 to UL_TFC7, UL_TFC9 to UL_TFC10, UL_TFC11 to UL_TFC12, UL_TFC15 to UL_TFC16, UL_TFC18 to UL_TFC19, UL_TFC21 to UL_TFC22, UL_TFC24 to UL_TFC25, UL_TFC27 to UL_TFC28 and UL_TFC30 to UL_TFC31.

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	256	128	656	DL_TFC1	UL_TFC6	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC1, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC32	RB5: 39 RB6: 103 RB7: 60 RB8: 1272 RB9: 312	RB5: 39 RB6: No data RB7: No data RB8, RB9: See note 4
	2	2	256	128							
	3	3	256	128							
	4	3	256	128							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	6	512	128							
2	1	2	512	256	336	DL_TFC2	UL_TFC7	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC2, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC7, UL_TFC32	RB5: 81 RB6: 103 RB7: 60 RB8: 1272 RB9: 312	RB5: 81 RB6: 103 RB7: 60 RB8, RB9: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
	12	8	1024	128							
3	1	2	256	256	656	DL_TFC1	UL_TFC9	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC1, UL_TFC8	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC32	RB5: 39 RB6: 103 RB7: 60 RB8: 2552 RB9: 312	RB5: 39 RB6: No data RB7: No data RB8, RB9: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
4	12	8	512	128	656	DL_TFC2	UL_TFC10	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC8	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC32	RB5: 81 RB6: 103 RB7: 60 RB8: 2552 RB9: 312	RB5: 81 RB6: 103 RB7: 60 RB8, RB9: See note 4
	1	2	512	256							
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	8	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	6	1024	128							
12	8	1024	128								
5	1	2	256	256	656	DL_TFC1	UL_TFC12	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC1, UL_TFC11	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC11, UL_TFC12, UL_TFC32	RB5: 39 RB6: 103 RB7: 60 RB8: 1272 RB9: 632	RB5: 39 RB6: No data RB7: No data RB8, RB9: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	8	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	6	512	128							
	12	8	512	128							
6	1	2	512	256	656	DL_TFC2	UL_TFC13	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC2, UL_TFC11	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC11, UL_TFC13, UL_TFC32	RB5: 81 RB6: 103 RB7: 60 RB8: 1272 RB9: 632	RB5: 81 RB6: 103 RB7: 60 RB8, RB9: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	8	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	6	1024	128							
	12	8	1024	128							
7	1	2	256	256	656	DL_TFC1	UL_TFC15	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC1, UL_TFC14	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC14, UL_TFC15, UL_TFC32	RB5: 39 RB6: 103 RB7: 60 RB8: 2552 RB9: 632	RB5: 39 RB6: No data RB7: No data RB8, RB9: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	8	512	128							
8	1	2	512	256	656	DL_TFC2	UL_TFC16	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC2, UL_TFC14	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC14, UL_TFC16, UL_TFC32	RB5: 81 RB6: 103 RB7: 60 RB8: 2552 RB9: 632	RB5: 81 RB6: 103 RB7: 60 RB8, RB9: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
	12	8	1024	128							
9	1	2	256	256	656	DL_TFC1	UL_TFC18	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC1, UL_TFC17	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC17, UL_TFC18, UL_TFC32	RB5: 39 RB6: 103 RB7: 60 RB8: 632 RB9: 1272	RB5: 39 RB6: No data RB7: No data RB8, RB9: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	8	512	128							
10	1	2	512	256	656	DL_TFC2	UL_TFC19	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC2, UL_TFC17	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC17, UL_TFC19, UL_TFC32	RB5: 81 RB6: 103 RB7: 60 RB8: 632 RB9: 1272	RB5: 81 RB6: 103 RB7: 60 RB8, RB9: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
	12	8	1024	128							
11	1	2	256	256	656	DL_TFC1	UL_TFC21	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC1, UL_TFC20	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4,	RB5: 39 RB6: 103 RB7: 60 RB8: 1272 RB9: 1272	RB5: 39 RB6: No data RB7: No data RB8, RB9: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	6	8	256	256					UL_TFC20, UL_TFC21, UL_TFC32		
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
12	12	8	512	128	656	DL_TFC2	UL_TFC22	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC2, UL_TFC20	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC20, UL_TFC22, UL_TFC32	RB5: 81 RB6: 103 RB7: 60 RB8: 1272 RB9: 1272	RB5: 81 RB6: 103 RB7: 60 RB8, RB9: See note 4
	1	2	512	256							
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
13	12	8	1024	128	656	DL_TFC1	UL_TFC24	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC1, UL_TFC23	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC23, UL_TFC24, UL_TFC32	RB5: 39 RB6: 103 RB7: 60 RB8: 2552 RB9: 1272	RB5: 39 RB6: No data RB7: No data RB8, RB9: See note 4
	1	2	256	256							
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
14	12	8	512	128	656	DL_TFC1	UL_TFC27	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC1, UL_TFC26	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC26, UL_TFC27, UL_TFC32	RB5: 39 RB6: 103 RB7: 60 RB8: 1272 RB9: 2552	RB5: 39 RB6: No data RB7: No data RB8, RB9: See note 4
	1	2	512	256							
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
15	12	8	1024	128	656	DL_TFC2	UL_TFC28	DL_TFC0, DL_TFC3,	UL_TFC0, UL_TFC1,	RB5: 81 RB6: 103	RB5: 81 RB6: 103
	1	2	256	256							
	2	2	256	256							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	3	3	256	256				UL_TFC0, UL_TFC2, UL_TFC26	UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC26, UL_TFC28, UL_TFC32	RB7: 60 RB8: 1272 RB9: 2552	RB7: 60 RB8, RB9: See note 4
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
12	8	512	128								
16	1	2	512	256	656	DL_TFC1	UL_TFC30	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC1, UL_TFC29	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC29, UL_TFC30, UL_TFC32	RB5: 39 RB6: 103 RB7: 60 RB8: 2552 RB9: 2552	RB5: 39 RB6: No data RB7: No data RB8, RB9: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	1024	128							
	12	8	1024	128							
17	1	2	256	256	656	DL_TFC2	UL_TFC31	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC2, UL_TFC29	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC29, UL_TFC31, UL_TFC32	RB5: 81 RB6: 103 RB7: 60 RB8: 2552 RB9: 2552	RB5: 81 RB6: 103 RB7: 60 RB8, RB9: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	512	128							
	12	8	512	128							

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4 and UL_TFC32 are part of minimum set of TFCs.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

RB5 and RB6: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.

NOTE 4: The test data size for RB5 and RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5.

14.6.7.4 Test requirements

See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for each TFRC test point:

If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return 4 RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return 4 RLC SDUs where each SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5.2 sends 4 SDUs of size $(N_{\text{PDUs}} * \text{MAC-d PDU payload size}) / 4$ minus 8 bits (size of 7 bit length indicator and expansion bit). For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.8 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or Background / UL:384 DL:[Bit rate depending on the UE category] / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

14.6.8.1 Conformance requirement

See 14.6.1.1.

14.6.8.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.8.

14.6.8.3 Method of test

NOTE: The reference to UE Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The generic test procedure in 14.1.3.6 is run for each sub-test.

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (I/B 384 kbps, 10ms)	DCCH
TFS	TF0, bits	0x72	0x181	0x60	0x336	0x148
	TF1, bits	1x40	1x78	N/A	1x336	1x148
	TF2, bits	1x54	1x113	N/A	2x336	N/A
	TF3, bits	1x64	1x181	N/A	4x336	N/A
	TF4, bits	1x72	N/A	N/A	8x336	N/A
	TF5, bits	N/A	N/A	N/A	12x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
UL_TFC0	(TF0,TF0,TF0,TF0,TF0)
UL_TFC1	(TF1,TF0,TF0,TF0,TF0)
UL_TFC2	(TF2,TF1,TF0,TF0,TF0)
UL_TFC3	(TF3,TF2,TF0,TF0,TF0)
UL_TFC4	(TF4,TF3,TF0,TF0,TF0)
UL_TFC5	(TF0,TF0,TF0,TF0,TF1)
UL_TFC6	(TF1,TF0,TF0,TF0,TF1)
UL_TFC7	(TF2,TF1,TF0,TF0,TF1)
UL_TFC8	(TF3,TF2,TF0,TF0,TF1)
UL_TFC9	(TF4,TF3,TF0,TF0,TF1)
UL_TFC10	(TF0,TF0,TF0,TF1,TF0)
UL_TFC11	(TF1,TF0,TF0,TF1,TF0)
UL_TFC12	(TF2,TF1,TF0,TF1,TF0)
UL_TFC13	(TF3,TF2,TF0,TF1,TF0)
UL_TFC14	(TF4,TF3,TF0,TF1,TF0)
UL_TFC15	(TF0,TF0,TF0,TF1,TF1)
UL_TFC16	(TF1,TF0,TF0,TF1,TF1)
UL_TFC17	(TF2,TF1,TF0,TF1,TF1)
UL_TFC18	(TF3,TF2,TF0,TF1,TF1)
UL_TFC19	(TF4,TF3,TF0,TF1,TF1)
UL_TFC20	(TF0,TF0,TF0,TF2,TF0)
UL_TFC21	(TF1,TF0,TF0,TF2,TF0)
UL_TFC22	(TF2,TF1,TF0,TF2,TF0)
UL_TFC23	(TF3,TF2,TF0,TF2,TF0)
UL_TFC24	(TF4,TF3,TF0,TF2,TF0)
UL_TFC25	(TF0,TF0,TF0,TF2,TF1)
UL_TFC26	(TF1,TF0,TF0,TF2,TF1)
UL_TFC27	(TF2,TF1,TF0,TF2,TF1)
UL_TFC28	(TF3,TF2,TF0,TF2,TF1)
UL_TFC29	(TF4,TF3,TF0,TF2,TF1)
UL_TFC30	(TF0,TF0,TF0,TF3,TF0)
UL_TFC31	(TF1,TF0,TF0,TF3,TF0)
UL_TFC32	(TF2,TF1,TF0,TF3,TF0)
UL_TFC33	(TF3,TF2,TF0,TF3,TF0)
UL_TFC34	(TF4,TF3,TF0,TF3,TF0)
UL_TFC35	(TF0,TF0,TF0,TF3,TF1)
UL_TFC36	(TF1,TF0,TF0,TF3,TF1)
UL_TFC37	(TF2,TF1,TF0,TF3,TF1)
UL_TFC38	(TF3,TF2,TF0,TF3,TF1)
UL_TFC39	(TF4,TF3,TF0,TF3,TF1)
UL_TFC40	(TF0,TF0,TF0,TF4,TF0)
UL_TFC41	(TF1,TF0,TF0,TF4,TF0)
UL_TFC42	(TF2,TF1,TF0,TF4,TF0)
UL_TFC43	(TF3,TF2,TF0,TF4,TF0)
UL_TFC44	(TF4,TF3,TF0,TF4,TF0)
UL_TFC45	(TF0,TF0,TF0,TF4,TF1)
UL_TFC46	(TF1,TF0,TF0,TF4,TF1)
UL_TFC47	(TF2,TF1,TF0,TF4,TF1)
UL_TFC48	(TF3,TF2,TF0,TF4,TF1)
UL_TFC49	(TF4,TF3,TF0,TF4,TF1)
UL_TFC50	(TF0,TF0,TF0,TF5,TF0)
UL_TFC51	(TF1,TF0,TF0,TF5,TF0)
UL_TFC52	(TF2,TF1,TF0,TF5,TF0)
UL_TFC53	(TF3,TF2,TF0,TF5,TF0)
UL_TFC54	(TF4,TF3,TF0,TF5,TF0)
UL_TFC55	(TF0,TF0,TF0,TF5,TF1)
UL_TFC56	(TF1,TF0,TF0,TF5,TF1)
UL_TFC57	(TF2,TF1,TF0,TF5,TF1)
UL_TFC58	(TF3,TF2,TF0,TF5,TF1)
UL_TFC59	(TF4,TF3,TF0,TF5,TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH1	DCCH2 (SRB #5)
TFS	TF0, bits	1x0	0x181	0x60	0x148	0x3
	TF1, bits	1x40	1x78	N/A	1x148	1x3
	TF2, bits	1x54	1x113	N/A	N/A	N/A
	TF3, bits	1x64	1x181	N/A	N/A	N/A
	TF4, bits	1x72	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH1, DCCH2)
DL_TFC0	(TF0, TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF0, TF0, TF0)
DL_TFC3	(TF3, TF2, TF0, TF0, TF0)
DL_TFC4	(TF4, TF3, TF0, TF0, TF0)
DL_TFC5	(TF0, TF0, TF0, TF1, TF0)
DL_TFC6	(TF1, TF0, TF0, TF1, TF0)
DL_TFC7	(TF2, TF1, TF0, TF1, TF0)
DL_TFC8	(TF3, TF2, TF0, TF1, TF0)
DL_TFC9	(TF4, TF3, TF0, TF1, TF0)
DL_TFC10	(TF0, TF0, TF0, TF0, TF1)
DL_TFC11	(TF1, TF0, TF0, TF0, TF1)
DL_TFC12	(TF2, TF1, TF0, TF0, TF1)
DL_TFC13	(TF3, TF2, TF0, TF0, TF1)
DL_TFC14	(TF4, TF3, TF0, TF0, TF1)
DL_TFC15	(TF0, TF0, TF0, TF1, TF1)
DL_TFC16	(TF1, TF0, TF0, TF1, TF1)
DL_TFC17	(TF2, TF1, TF0, TF1, TF1)
DL_TFC18	(TF3, TF2, TF0, TF1, TF1)
DL_TFC19	(TF4, TF3, TF0, TF1, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Speech and Interactive Background radio bearer. As the Interactive Background UL:384 kbps radio bearer (RB8) has the highest number of transport formats (5 for TTI=10 ms and excluding TF0) then 5 sub-tests has been defined. The selected UL TFCI to achieve test coverage of TF1 to TF5 for RB8 and for the different speech transport formats are: UL_TFC11 for TF1, UL_TFC22 for TF2, UL_TFC33 for TF3, UL_TFC44 for TF4 and UL_TFC54 for TF5.

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCs Under test	Uplink TFCs Under test	Implicitly tested	TFC subset identity (note 5)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	256	336	DL_TFC1	UL_TFC11	DL_TFC0, DL_TFC5, DL_TFC6, DL_TFC10, UL_TFC0, UL_TFC5, UL_TFC16	0	RB5: 40 RB6: 78 RB7: 60 RB8: 312	RB5: 40 RB6: No data RB7: No data RB8: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	6	2047	512							
	11	3	512	256							
	12	6	512	256							
2	1	2	256	256	656	DL_TFC2	UL_TFC22	DL_TFC0, DL_TFC5, DL_TFC7, DL_TFC10, UL_TFC0, UL_TFC5, UL_TFC27	0	RB5: 54 RB6: 78 RB7: 60 RB8: 632	RB5: 54 RB6: 78 RB7: No data RB8: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	6	256	256							
3	1	2	512	256	336	DL_TFC3	UL_TFC33	DL_TFC0, DL_TFC5, DL_TFC8, DL_TFC10, UL_TFC0, UL_TFC5, UL_TFC38	1	RB5: 64 RB6: 113 RB7: 60 RB8: 1272	RB5: 64 RB6: 113 RB7: No data RB8: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	6	2047	1024							
	11	3	512	256							
	12	8	512	256							
4	1	2	256	256	656	DL_TFC4	UL_TFC44	DL_TFC0, DL_TFC5,	2	RB5: 72 RB6: 181	RB5: 72 RB6: 181
	2	2	256	256							

Sub-tes	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	TFC subset identity (note 5)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
	3	3	256	256				DL_TFC9, DL_TFC10, UL_TFC0, UL_TFC5, UL_TFC49		RB7: 60 RB8: 2552	RB7: No data RB8: See note 4
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	8	256	256							
5	1	2	256	256	656	DL_TFC4	UL_TFC54	DL_TFC0, DL_TFC5, DL_TFC9, DL_TFC10, UL_TFC0, UL_TFC5, UL_TFC59	2	RB5: 72 RB6: 181 RB7: 60 RB8: 3832	RB5: 72 RB6: 181 RB7: No data RB8: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	8	256	256							

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: Void.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

RB8: The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.

NOTE 4: The test data size for RB8 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.6.

NOTE 5: TFC subset identity shall be signalled by the SS on the downlink SRB#5, see generic test procedure in clause 14.1.3.6.

14.6.8.4 Test requirements

See 14.1.3.6 for definition of the referenced step numbers.

1. At step B12b the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 and for RB5 and RB6 the UE shall return an RLC SDU having the same content as sent by SS. No data shall be received on RB7.
4. At step 18 and for each TFRC test point:

If the downlink RLC SDU size is less than the configured UL RLC SDU for the actual sub-test then the UE shall return 4 RLC SDUs where the first bits of each SDU has the same content as the RLC SDUs sent by the SS in downlink. Otherwise the UE shall return 4 RLC SDUs where each SDU has the same content as the first bits of the RLC SDUs sent by the SS in downlink.

NOTE: The generic test procedure as specified in 14.1.3.5.2 sends 4 SDUs of size $(N_{\text{PDUs}} * \text{MAC-d PDU payload size}) / 4$ minus 8 bits (size of 7 bit length indicator and expansion bit). For the case when the downlink SDU size is less than the configured UL SDU size then all data is returned otherwise the returned data is truncated.

14.6.9 Streaming MBMS PTP / unknown / UL:16 DL: [max bit rate depending on UE category] kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / MBMS Selected Service

NOTE: The testing of MBMS PTP radio bearer combinations on DPCH and HSPDSCH is focusing on verifying that the UE is capable to establish the radio bearer combination and to verify correct data transfer using all the possible uplink TFS for transport channels mapped on DCH. The verification of MAC-hs transport block size selection and that the UE is capable of transmitting all the possible transport block sizes within the UE capability is tested in the MAC-hs test case 7.1.5.6.

14.6.9.1 Conformance requirement

The UE shall be able to establish the UTRAN requested MBMS PTP radio bearers within the UE's signalled radio access capabilities.

The UE shall correctly transfer user data from peer to peer RLC entities according to the requested MBMS PTP radio bearer configuration.

Reference(s)

3GPP TS 25.2xx series (Physical Layer)

3GPP TS 25.321 (MAC)

3GPP TS 25.322 (RLC)

3GPP TS 25.331 (RRC)

14.6.9.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.9:

14.6.9.3 Method of test

NOTE: The reference to HS-DSCH Category refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The following parameters are specific for this test case:

Parameter	Value
MAC-hs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See table for parameters for different HS-DSCH Categories

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	HS-PDSCH TFRC (note 2)					
				Max MAC-d PDU size	Minimum TBS	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFRI
1	2	256	128	656	677	1	QPSK	2	7
2	2	256	128	656	677	1	QPSK	2	7
3	3	256	128	656	677	1	QPSK	2	7
4	3	256	128	656	677	1	QPSK	2	7
5	6	256	256	656	677	1	QPSK	2	7
6	6	256	256	656	677	1	QPSK	2	7
7	6	512	512	656	677	1	QPSK	2	7
8	6	512	512	656	677	1	QPSK	2	7
9	6	1024	512	656	677	1	QPSK	2	7
10	6	1024	1024	656	677	1	QPSK	2	7
11	3	512	128	656	677	1	QPSK	2	7
12	6	512	128	656	677	1	QPSK	2	7

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI, i.e. such that the MAC-hs transport block size is bigger than the maximum MAC-d PDU size under test + MAC-hs header size (21 bits). See 14.1.3.4 (MAC-d PDU size=656) for recommended TFRC values for different transport block size.

Uplink TFS:

	TFI	RB5 (16 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF0, TF1)
UL_TFC3	(TF1, TF1)

The generic test procedure in 14.1.6, using the MBMS Selected Service branch, is run for each sub-test.

Sub-tests:

Sub-test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)
1	UL_TFC1	UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 312
NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC2 are part of minimum set of TFCs.				
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return the data within one UL TTI.				

14.6.9.4 Test requirements

See 14.1.6 for definition of step 14 and step 22.

- At step 14 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 22 the UE shall return a RLC SDU where the first 312 bits has the same content as the RLC SDUs sent by the SS in downlink.

14.6.9m Streaming MBMS PTP / unknown / UL:16 DL: [max bit rate depending on UE category] kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / MBMS Multicast Service

This test case is identical to test case 14.6.9 with the exception that the SS shall use the MBMS Multicast Service branch in the generic test procedure in 14.1.6.

14.6.10 Streaming MBMS PTP / unknown / UL:16 DL: [max bit rate depending on UE category] kbps / PS RAB + Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / MBMS Selected Service

NOTE: The testing of MBMS PTP radio bearer combinations on DPCH and HSPDSCH is focusing on verifying that the UE is capable to establish the radio bearer combination and to verify correct data transfer using all the possible uplink TFS for transport channels mapped on DCH. The verification of MAC-hs transport block size selection and that the UE is capable of transmitting all the possible transport block sizes within the UE capability is tested in the MAC-hs test case 7.1.5.6.

14.6.10.1 Conformance requirement

The UE shall be able to establish the UTRAN requested MBMS PTP radio bearers within the UE's signalled radio access capabilities.

The UE shall correctly transfer user data from peer to peer RLC entities according to the requested MBMS PTP radio bearer configuration.

Reference(s)

3GPP TS 25.2xx series (Physical Layer)

3GPP TS 25.321 (MAC)

3GPP TS 25.322 (RLC)

3GPP TS 25.331 (RRC)

14.6.10.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.10:

14.6.10.3 Method of test

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The following parameters are specific for this test case:

Parameter	Value
MAC-hs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See table for parameters for different HS-DSCH Categories

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	HS-PDSCH TFRC (note 2)					
				Max MAC-d PDU size	Minimum TBS	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFRI
1	2	256	128	656	677	1	QPSK	2	7
2	2	256	128	656	677	1	QPSK	2	7
3	3	256	128	656	677	1	QPSK	2	7
4	3	256	128	656	677	1	QPSK	2	7
5	6	256	256	656	677	1	QPSK	2	7
6	6	256	256	656	677	1	QPSK	2	7
7	6	512	512	656	677	1	QPSK	2	7
8	6	512	512	656	677	1	QPSK	2	7
9	6	1024	512	656	677	1	QPSK	2	7
10	6	1024	1024	656	677	1	QPSK	2	7
11	3	512	128	656	677	1	QPSK	2	7
12	6	512	128	656	677	1	QPSK	2	7

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.

NOTE 2: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI, i.e. such that the MAC-hs transport block size is bigger than the maximum MAC-d PDU size under test + MAC-hs header size (21 bits). See 14.1.3.4 (MAC-d PDU size=656) for recommended TFRC values for different transport block size.

Uplink TFS:

	TFI	RB5 (16 kbps, 20 ms TTI)	RB6 + RB7 (64 kbps RAB, 20 ms TTI)	DCCH
TFS	TF0, bits	0x336	0x340	0x148
	TF1, bits	1x336	1x340	1x148
	TF2, bits	N/A	2x340	N/A
	TF3, bits	N/A	3x340	N/A
	TF4, bits	N/A	4x340	N/A

Uplink TFCS:

TFCI	(RB5, RB6 + RB7, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF0, TF1, TF0)
UL_TFC3	(TF1, TF1, TF0)
UL_TFC4	(TF0, TF2, TF0)
UL_TFC5	(TF1, TF2, TF0)
UL_TFC6	(TF0, TF3, TF0)
UL_TFC7	(TF1, TF3, TF0)
UL_TFC8	(TF0, TF4, TF0)
UL_TFC9	(TF1, TF4, TF0)
UL_TFC10	(TF0, TF0, TF1)
UL_TFC11	(TF1, TF0, TF1)
UL_TFC12	(TF0, TF1, TF1)
UL_TFC13	(TF1, TF1, TF1)
UL_TFC14	(TF0, TF2, TF1)
UL_TFC15	(TF1, TF2, TF1)
UL_TFC16	(TF0, TF3, TF1)
UL_TFC17	(TF1, TF3, TF1)
UL_TFC18	(TF0, TF4, TF1)
UL_TFC19	(TF1, TF4, TF1)

The generic test procedure in 14.1.6, using the MBMS Selected Service branch, is run for each sub-test.

Sub-tests:

Sub-test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data for RB6+RB7
1	UL_TFC1	UL_TFC0, UL_TFC11	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC10, UL_TFC11	RB5: 312 RB6: 312 RB7: 312	Test data for RB6+RB7 sent on RB6
2	UL_TFC2	UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC10, UL_TFC12	RB5: 312 RB6: 312 RB7: 312	Test data for RB6+RB7 sent on RB6
3	UL_TFC3	UL_TFC0, UL_TFC13	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC10, UL_TFC13	RB5: 312 RB6: 312 RB7: 312	Test data for RB6+RB7 sent on RB6
4	UL_TFC4	UL_TFC0, UL_TFC14	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC10, UL_TFC14	RB5: 312 RB6: 632 RB7: 632	Test data for RB6+RB7 sent on RB6
5	UL_TFC5	UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC10, UL_TFC15	RB5: 312 RB6: 632 RB7: 632	Test data for RB6+RB7 sent on RB6
6	UL_TFC6	UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC6, UL_TFC10, UL_TFC16	RB5: 312 RB6: 952 RB7: 952	Test data for RB6+RB7 sent on RB6
7	UL_TFC7	UL_TFC0, UL_TFC17	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC7, UL_TFC10, UL_TFC17	RB5: 312 RB6: 952 RB7: 952	Test data for RB6+RB7 sent on RB6
8	UL_TFC8	UL_TFC0, UL_TFC18	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC8, UL_TFC10, UL_TFC18	RB5: 312 RB6: 1272 RB7: 1272	Test data for RB6+RB7 sent on RB6
9	UL_TFC9	UL_TFC0, UL_TFC19	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC9, UL_TFC10, UL_TFC19	RB5: 312 RB6: 1272 RB7: 1272	Test data for RB6+RB7 sent on RB6
10	UL_TFC9	UL_TFC0, UL_TFC19	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC9, UL_TFC10, UL_TFC19	RB5: 312 RB6: 1272 RB7: 1272	Test data for RB6+RB7 sent on RB7

NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2 and UL_TFC10 are part of minimum set of TFCIs.
 NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
 RB5: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return th data within one UL TTI.

14.6.10.4 Test requirements

See 14.1.6 for definition of step 14 and step 22.

1. At step 14 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 22 the UE shall return
 - for sub-test 1: RLC SDU on RB5 where the first 312 bits has the same content as the RLC SDUs sent by the SS in downlink and no data on RB6 and RB7.
 - for sub-test 2: RLC SDU on RB6 where the first 312 bits has the same content as the RLC SDUs sent by the SS in downlink and no data on RB5 and RB7.
 - for sub-test 3: RLC SDU on RB5 and RB6 where the first 312 bits has the same content as the RLC SDUs sent by the SS in downlink and no data on RB7.
 - for sub-test 4: RLC SDU on RB6 where the first 632 bits has the same content as the RLC SDUs sent by the SS in downlink and no data on RB5 and RB7.
 - for sub-test 5: RLC SDU on RB5 and RB6 where the first 312 bits for RB5 and the first 632 bits for RB6 has the same content as the RLC SDUs sent by the SS in downlink and no data on RB7.
 - for sub-test 6: RLC SDU on RB6 where the first 952 bits has the same content as the RLC SDUs sent by the SS in downlink and no data on RB5 and RB7.
 - for sub-test 7: RLC SDU on RB5 and RB6 where the first 312 bits for RB5 and the first 952 bits for RB6 has the same content as the RLC SDUs sent by the SS in downlink and no data on RB7.
 - for sub-test 8: RLC SDU on RB6 where the first 1272 bits has the same content as the RLC SDUs sent by the SS in downlink and no data on RB5 and RB7.
 - for sub-test 9: RLC SDU on RB5 and RB6 where the first 312 bits for RB5 and the first 1272 bits for RB6 has the same content as the RLC SDUs sent by the SS in downlink and no data on RB7.
 - for sub-test 10: RLC SDU on RB5 and RB7 where the first 312 bits for RB5 and the first 1272 bits for RB7 has the same content as the RLC SDUs sent by the SS in downlink and no data on RB6.

14.6.10m Streaming MBMS PTP / unknown / UL:16 DL: [max bit rate depending on UE category] kbps / PS RAB + Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / MBMS Multicast Service

This test case is identical to test case 14.6.10 with the exception that the SS shall use the MBMS Multicast Service branch in the generic test procedure in 14.1.6.

14.7 Combinations on DPCH, HS-PDSCH and E-DPDCH

NOTE: The testing of radio bearer combinations on DPCH, HSPDSCH and E-DPDCH is focusing on verifying that the UE is capable to establish the radio bearer combination and to verify correct data transfer using all the possible uplink TFS for transport channels mapped on DCH and all the configured MAC-d PDU sizes for the transport channel mapped to E-DCH. The verification of MAC-e/es transport block size selection and that the UE is capable of transmitting all the possible transport block sizes within the UE capability is tested in the MAC-e/es test case 7.1.6.3.2. (UL QPSK), 7.1.6.3.2a (UL 16QAM), 7.1.7.4 (UL QPSK and MAC-i/is) and 7.1.7.5 (UL 16 QAM and MAC-i/is)

14.7.1 Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

14.7.1.1 Conformance requirement

The UE shall be able to establish the UTRAN requested radio bearers within the UE's signalled radio access capabilities.

The UE shall correctly transfer user data from peer to peer RLC entities according to the requested radio bearer configuration.

Reference(s)

3GPP TS 25.331, clause 8.2.1

3GPP TS 25.2xx series (Physical Layer)

3GPP TS 25.321 (MAC)

3GPP TS 25.322 (RLC)

14.7.1.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.1:

1. To verify that the UE is able to establish the radio bearer combination.
2. To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to E-DCH.

14.7.1.3 Method of test

NOTE: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-6 IE "E-DCH physical layer category". All UEs supporting E-DCH should signal a category between 1 and 6 for this IE even if the UE physical capability category is above 6.

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The following parameters are specific for this test case:

Parameter	Value
MAC-hs receiver window size	16
HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
1	512
2	512
3	512
4	512
5	1536
6	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					
			Max MAC-d PDU size	Minimum TBS	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFRI
1	2	512	336	357	1	QPSK	1	19
2	2	512	336	357	1	QPSK	1	19
3	3	512	336	357	1	QPSK	1	19
4	3	512	336	357	1	QPSK	1	19
5	6	512	336	357	1	QPSK	1	19
6	6	512	336	357	1	QPSK	1	19
7	6	1536	336	357	1	QPSK	1	19
8	6	1536	336	357	1	QPSK	1	19
9	6	2047	336	357	1	QPSK	1	19
10	6	2047	336	357	1	QPSK	1	19
11	3	1024	336	357	1	QPSK	1	19
12	6	1024	336	357	1	QPSK	1	19

NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI, i.e. such that the MAC-hs transport block size is bigger than the maximum MAC-d PDU size under test + MAC-hs header size (21 bits). See 14.1.3.3 (MAC-d PDU size=336) for recommended TFRC values for different transport block size.

The generic test procedure in 14.1.4.1 is run for each sub-test.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	UL RLC SDU size (note 2)	Test data size (note 3)
1	1 to 6	10ms, Table 0	4	312	312
2	2,4 and 6	2ms, Table 0	8	312	312

NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.

NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

The UL RLC SDU size is set to UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit). This will enable the UE to return the data within one UL TTI.

NOTE 3: The test data size is for DTCH mapped to E-DCH selected according to the MAC-d PDU size to be tested.

14.7.1.4 Test requirements

See 14.1.4.1 for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE shall return a RLC SDU with same content as sent in downlink.

14.7.1a Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL: [max bit rate depending on UE category and TTI] DL:3.4 kbps SRBs for DCCH on E-DCH and DL DCH/ UL 16QAM

14.7.1a.1 Conformance requirement

The UE shall be able to establish the UTRAN requested radio bearers within the UE's signalled radio access capabilities.

The UE shall correctly transfer user data from peer to peer RLC entities according to the requested radio bearer configuration.

Reference(s)

3GPP TS 25.331, clause 8.2.1

3GPP TS 25.2xx series (Physical Layer)

3GPP TS 25.321 (MAC)

3GPP TS 25.322 (RLC)

14.7.1a.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.2:

1. To verify that the UE is able to establish the radio bearer combination.
2. To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to E-DCH.

14.7.1a.3 Method of test

NOTE: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-6 IE "E-DCH physical layer category". All UEs supporting E-DCH should signal a category between 1 and 6 for this IE even if the UE physical capability category is above 6.

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The following parameters are specific for this test case:

Parameter	Value
MAC-hs receiver window size	16
HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
7	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					
			Max MAC-d PDU size	Minimum TBS (note 2)	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFR1
1	2	512	336	357	1	QPSK	1	19
2	2	512	336	357	1	QPSK	1	19
3	3	512	336	357	1	QPSK	1	19
4	3	512	336	357	1	QPSK	1	19
5	6	512	336	357	1	QPSK	1	19
6	6	512	336	357	1	QPSK	1	19
7	6	1536	336	357	1	QPSK	1	19
8	6	1536	336	357	1	QPSK	1	19
9	6	2047	336	357	1	QPSK	1	19
10	6	2047	336	357	1	QPSK	1	19
11	3	1024	336	357	1	QPSK	1	19
12	6	1024	336	357	1	QPSK	1	19

NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI, i.e. such that the MAC-hs transport block size is bigger than the maximum MAC-d PDU size under test + MAC-hs header size (21 bits). See 14.1.3.3 (MAC-d PDU size=336) for recommended TFRC values for different transport block size.

The generic test procedure in 14.1.4.1 is run for each sub-test.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	UL RLC SDU size (note 2 & 4)	Test data size (note 3)
1	7	2ms, Table 2	8	7992	312

NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size is set to UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit). This will enable the UE to return the data within one UL TTI.
NOTE 3: The test data size is for DTCH mapped to E-DCH selected according to the MAC-d PDU size to be tested.
NOTE 4: The UL RLC SDU size is calculated as $25 \times 320 - 8 = 7992$, such that TB size 8450 corresponding to E-TFCI 103 will be selected. With $PL_{non-max} = 0.84$, $[(8450 + 24 \times [CRC]) \times 3 \times [TC]] = 25422$ bits. $25422 \times PL_{non-max} = 21355$, this guarantees as per algorithm in 25.212 clause 4.8.4.1, 16QAM to be selected $[2 \times M_2 + 2 \times M_4]$

14.7.1a.4 Test requirements

See 14.1.4.1 for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE shall return a RLC SDU with first 312 bits equal to the content of the DL RLC SDU sent by the SS.

14.7.2 Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL: [max bit rate depending on UE category and TTI] DL: 3.4 kbps SRBs for DCCH on E-DCH and DL DCH

14.7.2.1 Conformance requirement

See 14.7.1.1.

14.7.2.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.2:

1. To verify that the UE is able to establish the radio bearer combination.
2. To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to E-DCH.

14.7.2.3 Method of test

See 14.7.1.3.

14.7.2.4 Test requirements

See 14.7.1.4.

14.7.3 Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

14.7.3.1 Conformance requirement

See 14.7.1.1.

14.7.3.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.3:

1. To verify that the UE is able to establish the radio bearer combination.
2. To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to E-DCH.

14.7.3.3 Method of test

See 14.7.1.3.

14.7.3.4 Test requirements

See 14.7.1.4.

14.7.3a Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] with Flexible RLC, MAC-ehs and MAC-i/is / PS RAB + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH with MAC-ehs and MAC-i/is

14.7.3a.1 Conformance requirement

See 14.7.1.1.

14.7.3a.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.3 and for the case when Flexible RLC and MAC-i/is is configured:

1. To verify that the UE is able to establish the radio bearer combination.
2. To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to E-DCH.

14.7.3a.3 Method of test

NOTE: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-6 IE “E-DCH physical layer category”. All UEs supporting E-DCH should signal a category between 1 and 6 for this IE even if the UE physical capability category is above 6.

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-7 IE “HS-DSCH physical layer category extension”. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value
Radio bearer	TS 34.108, clause 6.10.2.4.6.3 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) and uplink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-i/is) and using downlink Alt 2 (Fixed RLC and MAC-ehs) and uplink Alt 2 (Fixed RLC and MAC-i/is) for the SRB#1 to SRB#4.
MAC-ehs receiver window size	16
HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
1	512
2	512
3	512
4	512
5	1536
6	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					
			Max MAC-d PDU size	Minimum TBS	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFRI
1	2	512	336	360	1	QPSK	1	30
2	2	512	336	360	1	QPSK	1	30
3	3	512	336	360	1	QPSK	1	30
4	3	512	336	360	1	QPSK	1	30
5	6	512	336	360	1	QPSK	1	30
6	6	512	336	360	1	QPSK	1	30
7	6	1536	336	360	1	QPSK	1	30
8	6	1536	336	360	1	QPSK	1	30
9	6	2047	336	360	1	QPSK	1	30
10	6	2047	336	360	1	QPSK	1	30
11	3	1024	336	360	1	QPSK	1	30
12	6	1024	336	360	1	QPSK	1	30
13 to 20	6	2047	336	360	1	QPSK	1	30

NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI considering all sub-tests. i.e. such that the MAC-ehs transport block size is bigger than the “Minimum TBS” that equals maximum MAC-d PDU size under test + the MAC-ehs header size (24 bits).

The generic test procedure in 14.1.4.1b is run for each sub-test.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	UL MAC-d PDU size under test	DL MAC-d PDU size under test	UL RLC SDU size (note 2)	Test data size (note 3)
1	1 to 6	10ms, Table 0	4	Flexible	Flexible	320	320
2	2,4 and 6	2ms, Table 0	8	Flexible	Flexible	320	320
NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B. NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size is set to UL RLC payload size. This will enable the UE to return the data within one UL TTI ("Use special value of HE field" is configured). NOTE 3: The test data size is for DTCH mapped to E-DCH is selected according to the MAC-d PDU size to be tested = DL RLC payload size for the MAC-d PDU size.							

14.7.3a.4 Test requirements

See 14.1.4.1b for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE shall return a RLC SDU with same content as sent in downlink.

14.7.3b Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] with Flexible RLC, MAC-ehs and MAC-i/is / PS RAB + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH with MAC-ehs and MAC-i/is / UL: QPSK and Dual-Cell DL: 16QAM and Dual-Cell

14.7.3b.1 Conformance requirement

See 14.7.1.1.

14.7.3b.2 Test purpose

When the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.3 is configured for Dual-cell E-DCH and Dual-cell HSDPA, with uplink QPSK, Flexible RLC and MAC-i/is and downlink 16QAM, flexible RLC and MAC-ehs:

- Verify that the UE is able to establish the radio bearer combination on both cells.
- Verify correct data transfer of the established radio bearer combination on both cells.

14.7.3b.3 Method of test

NOTE: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-9 IE "E-DCH physical layer category extension 2".

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-8 IE "HS-DSCH physical layer category extension 2". This IE corresponds to the HS-DSCH category supported by the UE when Dual-Cell and MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value
Radio bearer	TS 34.108, clause 6.10.2.4.6.3 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) and uplink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-i/is) and using downlink Alt 2 (Fixed RLC and MAC-ehs) and uplink Alt 2 (Fixed RLC and MAC-i/is) for the SRB#1 to SRB#4.
MAC-ehs receiver window size	16
HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
8	1536
9	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					
			Max MAC-d PDU size	Minimum TBS	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFRI
21 to 24	6	2047	336	360	1	16QAM	1	0
NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI considering all sub-tests. i.e. such that the MAC-ehs transport block size is bigger than the "Minimum TBS" that equals maximum MAC-d PDU size under test + the MAC-ehs header size (24 bits).								

The generic test procedure in 14.1.4.1c is run for each sub-test.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	UL MAC-d PDU size under test	DL MAC-d PDU size under test	UL RLC SDU size (note 2)	Test data size (note 3)
1	8 and 9	2ms, Table 0	8	Flexible	Flexible	320	320
NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.							
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size is set to UL RLC payload size. This will enable the UE to return the data within one UL TTI ("Use special value of HE field" is configured).							
NOTE 3: The test data size is for DTCH mapped to E-DCH is selected according to the MAC-d PDU size to be tested = DL RLC payload size for the MAC-d PDU size.							

14.7.3b.4 Test requirements

See 14.1.4.1c for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE shall return a RLC SDU with same content as sent in downlink.

14.7.3c Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] with Flexible RLC, MAC-ehs and MAC-i/is / PS RAB + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH with MAC-ehs and MAC-i/is / UL: 16QAM and Dual-Cell DL: 16QAM and Dual-Cell

14.7.3c.1 Conformance requirement

See 14.7.1.1.

14.7.3c.2 Test purpose

When the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.3 is configured for Dual-cell E-DCH and Dual-cell HSDPA, with uplink 16QAM, Flexible RLC and MAC-i/is and downlink 16QAM, flexible RLC and MAC-ehs:

1. Verify that the UE is able to establish the radio bearer combination on both cells.
2. Verify correct data transfer of the established radio bearer combination on both cells.

14.7.3c.3 Method of test

NOTE 1: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-9 IE "E-DCH physical layer category extension 2".

NOTE 2: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-8 IE "HS-DSCH physical layer category extension 2". This IE corresponds to the HS-DSCH category supported by the UE when Dual-Cell and MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value
Radio bearer	TS 34.108, clause 6.10.2.4.6.3 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) and uplink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-i/is) and using downlink Alt 2 (Fixed RLC and MAC-ehs) and uplink Alt 2 (Fixed RLC and MAC-i/is) for the SRB#1 to SRB#4.
MAC-ehs receiver window size	16
HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
9	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					
			Max MAC-d PDU size	Minimum TBS	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFRI
21 to 24	6	2047	336	360	1	16QAM	1	0

NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI considering all sub-tests. i.e. such that the MAC-ehs transport block size is bigger than the "Minimum TBS" that equals maximum MAC-d PDU size under test + the MAC-ehs header size (24 bits).

The generic test procedure in 14.1.4.1c is run for each sub-test.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	UL MAC-d PDU size under test	DL MAC-d PDU size under test	UL RLC SDU size (note 2)	Test data size (note 3)
1	9	2ms, Table 0	8	Flexible	Flexible	320	320
NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B. NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size is set to UL RLC payload size. This will enable the UE to return the data within one UL TTI ("Use special value of HE field" is configured). NOTE 3: The test data size is for DTCH mapped to E-DCH is selected according to the MAC-d PDU size to be tested = DL RLC payload size for the MAC-d PDU size.							

14.7.3c.4 Test requirements

See 14.1.4.1c for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE shall return a RLC SDU with same content as sent in downlink.

14.7.4 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.7.4.1 Conformance requirement

See 14.7.1.1.

14.7.4.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.4:

- To verify that the UE is able to establish the radio bearer combination.
- To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to E-DCH in combination with the possible TFCI of the conversational speech radio bearer.

14.7.4.3 Method of test

NOTE: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-6 IE "E-DCH physical layer category". All UEs supporting E-DCH should signal a category between 1 and 6 for this IE even if the UE physical capability category is above 6.

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The following parameters are specific for this test case:

Uplink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x148
	TF1, bits	1x39	1x103	1x60	1x148
	TF2, bits	1x81	N/A	N/A	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF1, TF0)
UL_TFC3	(TF0, TF0, TF0, TF1)
UL_TFC4	(TF1, TF0, TF0, TF1)
UL_TFC5	(TF2, TF1, TF1, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x148
	TF1, bits	1x39	1x103	1x60	1x148
	TF2, bits	1x81	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF1, TF0)
DL_TFC3	(TF0, TF0, TF0, TF1)
DL_TFC4	(TF1, TF0, TF0, TF1)
DL_TFC5	(TF2, TF1, TF1, TF1)

Parameter	Value
MAC-hs receiver window size	16
HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
1	512
2	512
3	512
4	512
5	1536
6	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					
			Max MAC-d PDU size	Minimum TBS	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFRI
1	2	512	336	357	1	QPSK	1	19
2	2	512	336	357	1	QPSK	1	19
3	3	512	336	357	1	QPSK	1	19
4	3	512	336	357	1	QPSK	1	19
5	6	512	336	357	1	QPSK	1	19
6	6	512	336	357	1	QPSK	1	19
7	6	1536	336	357	1	QPSK	1	19
8	6	1536	336	357	1	QPSK	1	19
9	6	2047	336	357	1	QPSK	1	19
10	6	2047	336	357	1	QPSK	1	19
11	3	1024	336	357	1	QPSK	1	19
12	6	1024	336	357	1	QPSK	1	19

NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI, i.e. such that the MAC-hs transport block size ("Minimum TBS") is bigger than the maximum MAC-d PDU size under test + MAC-hs header size (21 bits). See 14.1.3.3 (MAC-d PDU size=336) for recommended TFRC values for different transport block size.

The generic test procedure in 14.1.4.1 is run for each sub-test.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	DCH				UL RLC SDU size (note 3)	Test data size (note 4)
				DL TFCs Under test	UL TFCs Under test	Implicitly tested	Restricted UL TFCs (note 2)		
1	1 to 6	10ms, Table 0	4	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: 312
2	1 to 6	10ms, Table 0	4	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: 312
3	2, 4 and 6	2ms, Table 0	8	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: 312
4	2, 4 and 6	2ms, Table 0	8	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: 312
<p>NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.</p> <p>NOTE 2: UL_TFC0, UL_TFC1, UL_TFC2 and UL_TFC3 are part of minimum set of TFCs.</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return the data within one UL TTI.</p> <p>NOTE 4: The test data size is for DTCH mapped to E-DCH selected according to the MAC-d PDU size to be tested.</p>									

14.7.4.4 Test requirements

See 14.1.4.1 for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the sub-test.
3. At step 18 and for each radio bearer where test data is sent in downlink the UE shall return a RLC SDU with same content as sent in downlink. For radio bearers where no data is sent in downlink then no data shall be received in uplink.

14.7.5 Streaming or interactive or background / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:[max bit rate depending on UE category and TTI] DL:3.4 kbps SRBs for DCCH on E-DCH and DL DCH

14.7.5.1 Conformance requirement

See 14.7.1.1.

14.7.5.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.5:

1. To verify that the UE is able to establish the radio bearer combination.
2. To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to E-DCH.

14.7.5.3 Method of test

NOTE: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-6 IE "E-DCH physical layer category". All UEs supporting E-DCH should signal a category between 1 and 6 for this IE even if the UE physical capability category is above 6.

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The first Streaming or background or interactive / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB is referred to as RB5 and the second Streaming or interactive or background UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB is referred to RB6.

The following parameters are specific for this test case and RB5 and RB6:

Parameter	Value
MAC-hs receiver window size	16
HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
1	512
2	512
3	512
4	512
5	1536
6	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					TFRI
			Max MAC-d PDU size	Minimum TBS	Number of MAC-d PDUs	Modulation scheme	Number of codes	
1	2	512	336	357	1	QPSK	1	19
2	2	512	336	357	1	QPSK	1	19
3	3	512	336	357	1	QPSK	1	19
4	3	512	336	357	1	QPSK	1	19
5	6	512	336	357	1	QPSK	1	19
6	6	512	336	357	1	QPSK	1	19
7	6	1536	336	357	1	QPSK	1	19
8	6	1536	336	357	1	QPSK	1	19
9	6	2047	336	357	1	QPSK	1	19
10	6	2047	336	357	1	QPSK	1	19
11	3	1024	336	357	1	QPSK	1	19
12	6	1024	336	357	1	QPSK	1	19

NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI, i.e. such that the MAC-hs transport block size ("Minimum TBS") is bigger than the maximum MAC-d PDU size under test + the MAC-hs header size (21 bits). See 14.1.3.3 (MAC-d PDU size=336) for recommended TFRC values for different transport block size.

The generic test procedure in 14.1.4.1 is run for each sub-test.

Sub-tests:

Sub-test	E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	UL RLC SDU size (note 2)	Test data size (note 2)
1	1 to 6	10ms, Table 0	4	RB5:312 RB6:312	RB5:312 RB6:312
2	2,4 and 6	2ms, Table 0	8	RB5:312 RB6:312	RB5:312 RB6:312

NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size is set to UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit). This will enable the UE to return the data within one UL TTI.
NOTE 3: The test data size is for DTCH mapped to E-DCH selected according to the MAC-d PDU size to be tested.

14.7.5.4 Test requirements

See 14.1.4.1 for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE shall return a RLC SDU on RB5 and RB6 with same content as sent in downlink.

14.7.6 Conversational / unknown or speech / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + Streaming or Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:[max bit rate depending on UE category and TTI] DL: :[max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

14.7.6.1 Conformance requirement

See 14.7.1.1.

14.7.6.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.6:

1. To verify that the UE is able to establish the radio bearer combination.
2. To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to E-DCH.

14.7.6.3 Method of test

NOTE: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-6 IE “E-DCH physical layer category”. All UEs supporting E-DCH should signal a category between 1 and 6 for this IE even if the UE physical capability category is above 6.

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-5 IE “HS-DSCH physical layer category” (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The Conversational / unknown or speech / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB is referred to as RB5 and the Streaming or interactive or background UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB is referred to RB6

The following parameters are specific for this test case and RB5 and RB6:

Parameter	Value
MAC-hs receiver window size	16
RB5: HS-DSCH MAC-d PDU size	See sub-test table
RB6: HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
1	512
2	512
3	512
4	512
5	1536
6	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					TFR1
			Max MAC-d PDU size	Minimum TBS (note 2)	Number of MAC-d PDUs	Modulation scheme	Number of codes	
1	2	512	344	365	1	QPSK	1	19
2	2	512	344	365	1	QPSK	1	19
3	3	512	344	365	1	QPSK	1	19
4	3	512	344	365	1	QPSK	1	19
5	6	512	344	365	1	QPSK	1	19
6	6	512	344	365	1	QPSK	1	19
7	6	1536	344	365	1	QPSK	1	19
8	6	1536	344	365	1	QPSK	1	19
9	6	2047	344	365	1	QPSK	1	19
10	6	2047	344	365	1	QPSK	1	19
11	3	1024	344	365	1	QPSK	1	19
12	6	1024	344	365	1	QPSK	1	19
NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI considering all sub-tests. i.e. such that the MAC-hs transport block size ("Minimum TBS") is bigger than the maximum MAC-d PDU size under test + the MAC-hs header size.								
NOTE 2: For RB5 (UM) the maximum MAC-d PDU size is 344 and the MAC-hs header size is 21 bits, this result in the maximum required TBS for RB5 of 365 bits. For RB6 (AM) the maximum MAC-d PDU size is 336 and the MAC-hs header size is 21 bits, this result in the maximum required TBS for RB6 of 357 bits. The HS-PDSCH TFRC need to be selected for a TBS bigger or equal to 365.								

The generic test procedure in 14.1.4.1 is run for each sub-test.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	UL MAC-d PDU size under test	DL MAC-d PDU size under test	UL RLC SDU size (note 2)	Test data size (note 3)
1	1 to 6	10ms, Table 0	4	RB5:96 RB6:336	RB5:112 RB6:336	RB5:80 RB6:312	RB5:96 RB6:312
2	1 to 6	10ms, Table 0	4	RB5:112 RB6:336	RB5:112 RB6:336	RB5:96 RB6:312	RB5:96 RB6:312
3	1 to 6	10ms, Table 0	4	RB5:144 RB6:336	RB5:144 RB6:336	RB5:128 RB6:312	RB5:128 RB6:312
4	1 to 6	10ms, Table 0	4	RB5:160 RB6:336	RB5:160 RB6:336	RB5:144 RB6:312	RB5:144 RB6:312
5	1 to 6	10ms, Table 0	4	RB5:176 RB6:336	RB5:176 RB6:336	RB5:160 RB6:312	RB5:160 RB6:312
6	1 to 6	10ms, Table 0	4	RB5:192 RB6:336	RB5:192 RB6:336	RB5:176 RB6:312	RB5:176 RB6:312
7	1 to 6	10ms, Table 0	4	RB5:208 RB6:336	RB5:224 RB6:336	RB5:192 RB6:312	RB5:208 RB6:312
8	1 to 6	10ms, Table 0	4	RB5:224 RB6:336	RB5:224 RB6:336	RB5:208 RB6:312	RB5:208 RB6:312
9	1 to 6	10ms, Table 0	4	RB5:288 RB6:336	RB5:296 RB6:336	RB5:272 RB6:312	RB5:280 RB6:312
10	1 to 6	10ms, Table 0	4	RB5:296 RB6:336	RB5:296 RB6:336	RB5:280 RB6:312	RB5:280 RB6:312
11	1 to 6	10ms, Table 0	4	RB5:312 RB6:336	RB5:344 RB6:336	RB5:296 RB6:312	RB5:328 RB6:312
12	1 to 6	10ms, Table 0	4	RB5:344 RB6:336	RB5:344 RB6:336	RB5:328 RB6:312	RB5:328 RB6:312
13	2,4,6	2ms, Table 0	8	RB5:96 RB6:336	RB5:112 RB6:336	RB5:80 RB6:312	RB5:96 RB6:312
14	2,4,6	2ms, Table 0	8	RB5:112 RB6:336	RB5:112 RB6:336	RB5:96 RB6:312	RB5:96 RB6:312
15	2,4,6	2ms, Table 0	8	RB5:144 RB6:336	RB5:144 RB6:336	RB5:128 RB6:312	RB5:128 RB6:312
16	2,4,6	2ms, Table 0	8	RB5:160 RB6:336	RB5:160 RB6:336	RB5:144 RB6:312	RB5:144 RB6:312
17	2,4,6	2ms, Table 0	8	RB5:176 RB6:336	RB5:176 RB6:336	RB5:160 RB6:312	RB5:160 RB6:312
18	2,4,6	2ms, Table 0	8	RB5:192 RB6:336	RB5:192 RB6:336	RB5:176 RB6:312	RB5:176 RB6:312
19	2,4,6	2ms, Table 0	8	RB5:208 RB6:336	RB5:224 RB6:336	RB5:192 RB6:312	RB5:208 RB6:312
20	2,4,6	2ms, Table 0	8	RB5:224 RB6:336	RB5:224 RB6:336	RB5:208 RB6:312	RB5:208 RB6:312
21	2,4,6	2ms, Table 0	8	RB5:288 RB6:336	RB5:296 RB6:336	RB5:272 RB6:312	RB5:280 RB6:312
22	2,4,6	2ms, Table 0	8	RB5:296 RB6:336	RB5:296 RB6:336	RB5:280 RB6:312	RB5:280 RB6:312
23	2,4,6	2ms, Table 0	8	RB5:312 RB6:336	RB5:344 RB6:336	RB5:296 RB6:312	RB5:328 RB6:312
24	2,4,6	2ms, Table 0	8	RB5:344 RB6:336	RB5:344 RB6:336	RB5:328 RB6:312	RB5:328 RB6:312

NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.

NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size is set to UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit). This will enable the UE to return the data within one UL TTI.

NOTE 3: The test data size is for DTCH mapped to E-DCH is selected according to the MAC-d PDU size to be tested = DL RLC payload size for the MAC-d PDU size minus 8 bits (size of 7 bit length indicator and expansion bit).

14.7.6.4 Test requirements

See 14.1.4.1 for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 18 the UE shall return a RLC SDU on RB5 and RB6 with same content as sent in downlink. For the case the returned UL RLC SDU size under test is smaller than the sent DL RLC SDU size then the payload of the received UL RLC SDU shall have the same content as the first N bits of the DL RLC SDU payload, where N equals the payload size of the UL RLC SDU.

14.7.6a Conversational / unknown or speech / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + Streaming or Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:[max bit rate depending on UE category and TTI] DL: :[max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH/ UL 16QAM

14.7.6a.1 Conformance requirement

See 14.7.1.1.

14.7.6a.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.6:

1. To verify that the UE is able to establish the radio bearer combination.
2. To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to E-DCH.

14.7.6a.3 Method of test

NOTE: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-7 IE "E-DCH physical layer category extension".

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.

The Conversational / unknown or speech / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB is referred to as RB5 and the Streaming or interactive or background UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB is referred to RB6

The following parameters are specific for this test case and RB5 and RB6:

Parameter	Value
MAC-hs receiver window size	16
RB5: HS-DSCH MAC-d PDU size	See sub-test table
RB6: HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
7	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)				
			Max MAC-d PDU size	Max MAC-d PDU size	Max MAC-d PDU size	Max MAC-d PDU size	Max MAC-d PDU size
1	2	512	344	365	1	QPSK	1
2	2	512	344	365	1	QPSK	1
3	3	512	344	365	1	QPSK	1
4	3	512	344	365	1	QPSK	1
5	6	512	344	365	1	QPSK	1
6	6	512	344	365	1	QPSK	1
7	6	1536	344	365	1	QPSK	1
8	6	1536	344	365	1	QPSK	1
9	6	2047	344	365	1	QPSK	1
10	6	2047	344	365	1	QPSK	1
11	3	1024	344	365	1	QPSK	1
12	6	1024	344	365	1	QPSK	1

NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI considering all sub-tests. i.e. such that the MAC-hs transport block size ("Minimum TBS") is bigger than the maximum MAC-d PDU size under test + the MAC-hs header size.

NOTE 2: For RB5 (UM) the maximum MAC-d PDU size is 344 and the MAC-hs header size is 21 bits, this result in the maximum required TBS for RB5 of 365 bits. For RB6 (AM) the maximum MAC-d PDU size is 336 and the MAC-hs header size is 21 bits, this result in the maximum required TBS for RB6 of 357 bits. The HS-PDSCH TFRC need to be selected for a TBS bigger or equal to 365.

The generic test procedure in 14.1.4.1 is run for each sub-test.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	UL MAC-d PDU size under test	DL MAC-d PDU size under test	UL RLC SDU size (note 2)	Test data size (note 3)
1	7	2ms, Table 2	8	RB5:96 RB6:336	RB5:112 RB6:336	RB5:80 RB6: 7992	RB5:96 RB6:312
2	7	2ms, Table 2	8	RB5:112 RB6:336	RB5:112 RB6:336	RB5:96 RB6: 7992	RB5:96 RB6:312
3	7	2ms, Table 2	8	RB5:144 RB6:336	RB5:144 RB6:336	RB5:128 RB6: 7992	RB5:128 RB6:312
4	7	2ms, Table 2	8	RB5:160 RB6:336	RB5:160 RB6:336	RB5:144 RB6: 7992	RB5:144 RB6:312
5	7	2ms, Table 2	8	RB5:176 RB6:336	RB5:176 RB6:336	RB5:160 RB6: 7992	RB5:160 RB6:312
6	7	2ms, Table 2	8	RB5:192 RB6:336	RB5:192 RB6:336	RB5:176 RB6: 7992	RB5:176 RB6:312
7	7	2ms, Table 2	8	RB5:208 RB6:336	RB5:224 RB6:336	RB5:192 RB6: 7992	RB5:208 RB6:312
8	7	2ms, Table 2	8	RB5:224 RB6:336	RB5:224 RB6:336	RB5:208 RB6: 7992	RB5:208 RB6:312
9	7	2ms, Table 2	8	RB5:288 RB6:336	RB5:296 RB6:336	RB5:272 RB6: 7992	RB5:280 RB6:312
10	7	2ms, Table 2	8	RB5:296 RB6:336	RB5:296 RB6:336	RB5:280 RB6: 7992	RB5:280 RB6:312
11	7	2ms, Table 2	8	RB5:312 RB6:336	RB5:344 RB6:336	RB5:296 RB6: 7992	RB5:328 RB6:312
12	7	2ms, Table 2	8	RB5:344 RB6:336	RB5:344 RB6:336	RB5:328 RB6: 7992	RB5:328 RB6:312

NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
The UL RLC SDU size is set to UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit). This will enable the UE to return th data within one UL TTI.
NOTE 3: The test data size is for DTCH mapped to E-DCH is selected according to the MAC-d PDU size to be tested = DL RLC payload size for the MAC-d PDU size minus 8 bits (size of 7 bit length indicator and expansion bit).
NOTE 4: The UL RLC SDU size is calculated as $25 \cdot 320 - 8 = 7992$, such that TB size 8450 corresponding to E-TFCI 103 will be selected. With $PL_{non-max} = 0.84$, $[(8450 + 24 \cdot [CRC]) \cdot 3 \cdot [TC]] = 25422$ bits. $25422 \cdot PL_{non-max} = 21355$, this guarantees as per algorithm in 25.212 clause 4.8.4.1, 16QAM to be selected $[2 \cdot M_2 + 2 \cdot M_4]$

14.7.6a.4 Test requirements

See 14.1.4.1 for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE shall return a RLC SDU on RB5 with same content as sent in downlink and on RB6 with first 312 bits equal to the content of the DL RLC SDU sent by the SS. For the case the returned UL RLC SDU size under test is smaller than the sent DL RLC SDU size then the payload of the received UL RLC SDU shall have the same content as the first N bits of the DL RLC SDU payload, where N equals the payload size of the UL RLC SDU.

14.7.6b Conversational / unknown or speech / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps with Flexible RLC and MAC-ehs / PS RAB + Streaming or Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] with Fixed RLC and MAC-ehs / PS RAB + UL:[max bit rate depending on UE category and TTI] DL: :[max bit rate depending on UE category] SRBs for DCCH on E-DCH and SRBs with Fixed RLC and MAC-ehs on HS-DSCH / UL: QPSK and DL: QPSK

14.7.6b.1 Conformance requirement

See 14.7.1.1.

14.7.6b.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.6 for the case for the QPSK and non-MIMO case using the downlink enhanced Layer 2 configuration with MAC-ehs and Fixed and Flexible RLC configured:

1. To verify that the UE is able to establish the radio bearer combination.
2. To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to E-DCH.

14.7.6b.3 Method of test

NOTE: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-6 IE “E-DCH physical layer category”. All UEs supporting E-DCH should signal a category between 1 and 6 for this IE even if the UE physical capability category is above 6.

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-7 IE “HS-DSCH physical layer category extension”. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The Conversational / unknown or speech / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB is referred to as RB5 and the Streaming or interactive or background UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB is referred to RB6

The following parameters are specific for this test case and RB5 and RB6:

Parameter	Value
Radio bearer	TS 34.108, clause 6.10.2.4.6.6 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) for RB5; using downlink MAC-d flow parameters according to Alt 2 (Fixed RLC and MAC-ehs) for RB6; and using Alt 2 (Fixed RLC and MAC-ehs) for the SRB#1 to SRB#4.
MAC-ehs receiver window size	16
Alternative E-bit interpretation	TRUE
RB5: HS-DSCH MAC-d PDU size	See sub-test table
RB6: HS-DSCH MAC-d PDU size	336
RB5: DL UMRLC LI size	7

E-DCH Category	RLC Transmission window size
1	512
2	512
3	512
4	512
5	1536
6	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					TFR1
			Max MAC-d PDU size	Minimum TBS (note 2)	Number of MAC-d PDUs	Modulation scheme	Number of codes	
1	2	512	344	368	1	QPSK	1	31
2	2	512	344	368	1	QPSK	1	31
3	3	512	344	368	1	QPSK	1	31
4	3	512	344	368	1	QPSK	1	31
5	6	512	344	368	1	QPSK	1	31
6	6	512	344	368	1	QPSK	1	31
7	6	1536	344	368	1	QPSK	1	31
8	6	1536	344	368	1	QPSK	1	31
9	6	2047	344	368	1	QPSK	1	31
10	6	2047	344	368	1	QPSK	1	31
11	3	1024	344	368	1	QPSK	1	31
12	6	1024	344	368	1	QPSK	1	31
13 to 20	6	2047	344	368	1	QPSK	1	31
NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI considering all sub-tests. i.e. such that the MAC-hs transport block size ("Minimum TBS") is bigger than the maximum MAC-d PDU size under test + the MAC-ehs header size.								
NOTE 2: For RB5 (UM) the maximum MAC-d PDU size is 344 and the MAC-ehs header size is 24 bits, this result in the maximum required TBS for RB5 of 368 bits. For RB6 (AM) the maximum MAC-d PDU size is 336 and the MAC-ehs header size is 24 bits, this result in the maximum required TBS for RB6 of 360 bits. The HS-PDSCH TFRC need to be selected for a TBS bigger or equal to 368.								

The generic test procedure in 14.1.4.1a is run for each sub-test.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	UL MAC-d PDU size under test	DL MAC-d PDU size under test	UL RLC SDU size (note 2)	Test data size (note 3)
1	1 to 6	10ms, Table 0	4	RB5:96 RB6:336	RB5:Flexible RB6:336	RB5:80 RB6:312	RB5:96 RB6:312
2	1 to 6	10ms, Table 0	4	RB5:112 RB6:336	RB5:Flexible RB6:336	RB5:96 RB6:312	RB5:96 RB6:312
3	1 to 6	10ms, Table 0	4	RB5:144 RB6:336	RB5:Flexible RB6:336	RB5:128 RB6:312	RB5:128 RB6:312
4	1 to 6	10ms, Table 0	4	RB5:160 RB6:336	RB5:Flexible RB6:336	RB5:144 RB6:312	RB5:144 RB6:312
5	1 to 6	10ms, Table 0	4	RB5:176 RB6:336	RB5:Flexible RB6:336	RB5:160 RB6:312	RB5:160 RB6:312
6	1 to 6	10ms, Table 0	4	RB5:192 RB6:336	RB5:Flexible RB6:336	RB5:176 RB6:312	RB5:176 RB6:312
7	1 to 6	10ms, Table 0	4	RB5:208 RB6:336	RB5:Flexible RB6:336	RB5:192 RB6:312	RB5:208 RB6:312
8	1 to 6	10ms, Table 0	4	RB5:224 RB6:336	RB5:Flexible RB6:336	RB5:208 RB6:312	RB5:208 RB6:312
9	1 to 6	10ms, Table 0	4	RB5:288 RB6:336	RB5:Flexible RB6:336	RB5:272 RB6:312	RB5:280 RB6:312
10	1 to 6	10ms, Table 0	4	RB5:296 RB6:336	RB5:Flexible RB6:336	RB5:280 RB6:312	RB5:280 RB6:312
11	1 to 6	10ms, Table 0	4	RB5:312 RB6:336	RB5:Flexible RB6:336	RB5:296 RB6:312	RB5:328 RB6:312
12	1 to 6	10ms, Table 0	4	RB5:344 RB6:336	RB5:Flexible RB6:336	RB5:328 RB6:312	RB5:328 RB6:312
13	2,4,6	2ms, Table 0	8	RB5:96 RB6:336	RB5:Flexible RB6:336	RB5:80 RB6:312	RB5:96 RB6:312
14	2,4,6	2ms, Table 0	8	RB5:112 RB6:336	RB5:Flexible RB6:336	RB5:96 RB6:312	RB5:96 RB6:312
15	2,4,6	2ms, Table 0	8	RB5:144 RB6:336	RB5:Flexible RB6:336	RB5:128 RB6:312	RB5:128 RB6:312
16	2,4,6	2ms, Table 0	8	RB5:160 RB6:336	RB5:Flexible RB6:336	RB5:144 RB6:312	RB5:144 RB6:312
17	2,4,6	2ms, Table 0	8	RB5:176 RB6:336	RB5:Flexible RB6:336	RB5:160 RB6:312	RB5:160 RB6:312
18	2,4,6	2ms, Table 0	8	RB5:192 RB6:336	RB5:Flexible RB6:336	RB5:176 RB6:312	RB5:176 RB6:312
19	2,4,6	2ms, Table 0	8	RB5:208 RB6:336	RB5:Flexible RB6:336	RB5:192 RB6:312	RB5:208 RB6:312
20	2,4,6	2ms, Table 0	8	RB5:224 RB6:336	RB5:Flexible RB6:336	RB5:208 RB6:312	RB5:208 RB6:312
21	2,4,6	2ms, Table 0	8	RB5:288 RB6:336	RB5:Flexible RB6:336	RB5:272 RB6:312	RB5:280 RB6:312
22	2,4,6	2ms, Table 0	8	RB5:296 RB6:336	RB5:Flexible RB6:336	RB5:280 RB6:312	RB5:280 RB6:312
23	2,4,6	2ms, Table 0	8	RB5:312 RB6:336	RB5:Flexible RB6:336	RB5:296 RB6:312	RB5:328 RB6:312
24	2,4,6	2ms, Table 0	8	RB5:344 RB6:336	RB5:Flexible RB6:336	RB5:328 RB6:312	RB5:328 RB6:312

NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.

NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size is set to UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit). This will enable the UE to return the data within one UL TTI.

NOTE 3: The test data size is for DTCH mapped to E-DCH is selected according to the MAC-d PDU size to be tested = DL RLC payload size for the MAC-d PDU size minus 8 bits (size of 7 bit length indicator and expansion bit).

14.7.6b.4 Test requirements

See 14.1.4.1a for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 18 the UE shall return a RLC SDU on RB5 and RB6 with same content as sent in downlink. For the case the returned UL RLC SDU size under test is smaller than the sent DL RLC SDU size then the payload of the received UL RLC SDU shall have the same content as the first N bits of the DL RLC SDU payload, where N equals the payload size of the UL RLC SDU.

14.7.6c Conversational / unknown or speech / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps with Flexible RLC, MAC-ehs and MAC-i/is / PS RAB + Streaming or Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] with Fixed RLC, MAC-ehs and MAC-i/is / PS RAB + UL:[max bit rate depending on UE category and TTI] DL: :[max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH with MAC-ehs and MAC-i/is / UL: QPSK and DL: QPSK

14.7.6c.1 Conformance requirement

See 14.7.1.1.

14.7.6c.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.6 for the case QPSK and non-MIMO case when MAC-ehs and MAC-i/is and the mix of Fixed and Flexible RLC is configured:

1. To verify that the UE is able to establish the radio bearer combination.
2. To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to E-DCH.

14.7.6c.3 Method of test

NOTE: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-6 IE "E-DCH physical layer category". All UEs supporting E-DCH should signal a category between 1 and 6 for this IE even if the UE physical capability category is above 6.

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-7 IE "HS-DSCH physical layer category extension". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The Conversational / unknown or speech / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB is referred to as RB5 and the Streaming or interactive or background UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB is referred to RB6

The following parameters are specific for this test case and RB5 and RB6:

Parameter	Value
Radio bearer	TS 34.108, clause 6.10.2.4.6.6 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) and uplink MAC-d flow parameters according to Alt 2 (Flexible RLC and MAC-i/is) for RB5; using downlink MAC-d flow parameters according to Alt 2 (Fixed RLC and MAC-ehs) and uplink MAC-d flow parameters according to Alt 2 (Fixed RLC and MAC-i/is) for RB6; and using downlink Alt 2 (Fixed RLC and MAC-ehs) and uplink Alt 2 (Fixed RLC and MAC-i/is) for the SRB#1 to SRB#4.
MAC-ehs receiver window size	16
RB5: Alternative E-bit interpretation	TRUE
RB5: HS-DSCH MAC-d PDU size	See sub-test table
RB6: HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
1	512
2	512
3	512
4	512
5	1536
6	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					
			Max MAC-d PDU size	Minimum TBS (note 2)	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFRI
1	2	512	344	368	1	QPSK	1	31
2	2	512	344	368	1	QPSK	1	31
3	3	512	344	368	1	QPSK	1	31
4	3	512	344	368	1	QPSK	1	31
5	6	512	344	368	1	QPSK	1	31
6	6	512	344	368	1	QPSK	1	31
7	6	1536	344	368	1	QPSK	1	31
8	6	1536	344	368	1	QPSK	1	31
9	6	2047	344	368	1	QPSK	1	31
10	6	2047	344	368	1	QPSK	1	31
11	3	1024	344	368	1	QPSK	1	31
12	6	1024	344	368	1	QPSK	1	31
13 to 20	6	2047	344	368	1	QPSK	1	31

NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI considering all sub-tests. i.e. such that the MAC-ehs transport block size ("Minimum TBS") is bigger than the maximum MAC-d PDU size under test + the MAC-ehs header size.

NOTE 2: For RB5 (UM) the maximum MAC-d PDU size is 344 and the MAC-ehs header size is 24 bits, this result in the maximum required TBS for RB5 of 368 bits. For RB6 (AM) the maximum MAC-d PDU size is 336 and the MAC-ehs header size is 24 bits, this result in the maximum required TBS for RB6 of 360 bits. The HS-PDSCH TFRC need to be selected for a TBS bigger or equal to 368.

The generic test procedure in 14.1.4.1b is run for each sub-test.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	UL MAC-d PDU size under test	DL MAC-d PDU size under test	UL RLC SDU size (note 2)	Test data size (note 3)
1	1 to 6	10ms, Table 0	4	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:88 RB6:320	RB5:104 RB6:320
2	1 to 6	10ms, Table 0	4	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:104 RB6:320	RB5:104 RB6:320
3	1 to 6	10ms, Table 0	4	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:136 RB6:320	RB5:136 RB6:320
4	1 to 6	10ms, Table 0	4	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:152 RB6:320	RB5:152 RB6:320
5	1 to 6	10ms, Table 0	4	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:168 RB6:320	RB5:168 RB6:320
6	1 to 6	10ms, Table 0	4	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:184 RB6:320	RB5:184 RB6:320
7	1 to 6	10ms, Table 0	4	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:200 RB6:320	RB5:216 RB6:320
8	1 to 6	10ms, Table 0	4	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:216 RB6:320	RB5:216 RB6:320
9	1 to 6	10ms, Table 0	4	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:280 RB6:320	RB5:288 RB6:320
10	1 to 6	10ms, Table 0	4	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:288 RB6:320	RB5:288 RB6:320
11	1 to 6	10ms, Table 0	4	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:304 RB6:320	RB5:336 RB6:320
12	1 to 6	10ms, Table 0	4	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:336 RB6:320	RB5:336 RB6:320
13	2,4,6	2ms, Table 0	8	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:88 RB6:320	RB5:104 RB6:320
14	2,4,6	2ms, Table 0	8	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:104 RB6:320	RB5:104 RB6:320
15	2,4,6	2ms, Table 0	8	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:136 RB6:320	RB5:136 RB6:320
16	2,4,6	2ms, Table 0	8	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:152 RB6:320	RB5:152 RB6:320
17	2,4,6	2ms, Table 0	8	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:168 RB6:320	RB5:168 RB6:320
18	2,4,6	2ms, Table 0	8	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:184 RB6:320	RB5:184 RB6:320
19	2,4,6	2ms, Table 0	8	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:200 RB6:320	RB5:216 RB6:320
20	2,4,6	2ms, Table 0	8	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:216 RB6:320	RB5:216 RB6:320
21	2,4,6	2ms, Table 0	8	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:280 RB6:320	RB5:288 RB6:320
22	2,4,6	2ms, Table 0	8	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:288 RB6:320	RB5:288 RB6:320
23	2,4,6	2ms, Table 0	8	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:304 RB6:320	RB5:336 RB6:320
24	2,4,6	2ms, Table 0	8	RB5:Flexible RB6:336	RB5:Flexible RB6:336	RB5:336 RB6:320	RB5:336 RB6:320

NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.

NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

The UL RLC SDU size is set to UL RLC payload size to be tested.. This will enable the UE to return the data within one UL TTI ("Alternative E-bit interpretation" is configured for RB5 (UM) and "Use special value of HE field" is configured for RB6 (AM)). The selected UL RLC SDU sizes for the flexible case (RB5) are the same as specified for the UL fixed case (Alt 1) of the reference radio bearer configuration in TS 34.108, clause 6.10.2.4.6.6 (88, 104, 136, 152, 168, 184, 200, 216, 280, 288, 304 and 336).

NOTE 3: The test data size is for DTCH mapped to E-DCH is selected according to the MAC-d PDU size to be tested = DL RLC payload size for the MAC-d PDU size. The selected DL test data sizes for RB5 are the same as specified for the DL fixed case (Alt 2) of the reference radio bearer configuration in TS 34.108, clause 6.10.2.4.6.6 (104, 136, 152, 168, 184, 216, 288 and 336).

14.7.6c.4 Test requirements

See 14.1.4.1b for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 18 the UE shall return a RLC SDU on RB5 and RB6 with same content as sent in downlink. For the case the returned UL RLC SDU size under test is smaller than the sent DL RLC SDU size then the payload of the received UL RLC SDU shall have the same content as the first N bits of the DL RLC SDU payload, where N equals the payload size of the UL RLC SDU.

14.7.7 Conversational / unknown or speech / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + Streaming or Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + Streaming or Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

14.7.7.1 Conformance requirement

See 14.7.1.1.

14.7.7.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.7:

1. To verify that the UE is able to establish the radio bearer combination.
2. To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to E-DCH.

14.7.7.3 Method of test

NOTE: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-6 IE "E-DCH physical layer category". All UEs supporting E-DCH should signal a category between 1 and 6 for this IE even if the UE physical capability category is above 6.

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-5 IE "HS-DSCH physical layer category" (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-e-hs is not configured.

The Conversational / unknown or speech / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB is referred to as RB5, the first Streaming or interactive or background UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB is referred to RB6 and the second the first Streaming or interactive or background UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB is referred to RB7.

The following parameters are specific for this test case and RB5, RB6 and RB7:

Parameter	Value
MAC-hs receiver window size	16
RB5: HS-DSCH MAC-d PDU size	See sub-test table
RB6: HS-DSCH MAC-d PDU size	336
RB7: HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
1	512
2	512
3	512
4	512
5	1536
6	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					
			Max MAC-d PDU size	Minimum TBS (note 2)	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFRI
1	2	512	336	357	1	QPSK	1	19
2	2	512	336	357	1	QPSK	1	19
3	3	512	336	357	1	QPSK	1	19
4	3	512	336	357	1	QPSK	1	19
5	6	512	336	357	1	QPSK	1	19
6	6	512	336	357	1	QPSK	1	19
7	6	1536	336	357	1	QPSK	1	19
8	6	1536	336	357	1	QPSK	1	19
9	6	2047	336	357	1	QPSK	1	19
10	6	2047	336	357	1	QPSK	1	19
11	3	1024	336	357	1	QPSK	1	19
12	6	1024	336	357	1	QPSK	1	19

NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI considering all sub-tests. i.e. such that the MAC-hs transport block size ("Minimum TBS") is bigger than the maximum MAC-d PDU size under test + the MAC-hs header size.

NOTE 2: For RB5 (UM) the maximum MAC-d PDU size is 336 and the MAC-hs header size is 21 bits, this result in the maximum required TBS for RB5 of 357 bits. For RB6 and RB7 the maximum MAC-d PDU size is 336 and the MAC-hs header size is 21 bits, this result in the maximum required TBS for RB6 of 357 bits. The HS-PDSCH TFRC need to be selected for a TBS bigger or equal to 357.

The generic test procedure in 14.1.4.1 is run for each sub-test.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	UL MAC-d PDU size under test	DL MAC-d PDU size under test	UL RLC SDU size (note 2)	Test data size (note 3)
1	1 to 6	10ms, Table 0	4	RB5:96 RB6:336 RB7:336	RB5:112 RB6:336 RB7:336	RB5:80 RB6:312 RB7:312	RB5:96 RB6:312 RB7:312
2	1 to 6	10ms, Table 0	4	RB5:112 RB6:336 RB7:336	RB5:112 RB6:336 RB7:336	RB5:96 RB6:312 RB7:312	RB5:96 RB6:312 RB7:312
3	1 to 6	10ms, Table 0	4	RB5:144 RB6:336 RB7:336	RB5:144 RB6:336 RB7:336	RB5:128 RB6:312 RB7:312	RB5:128 RB6:312 RB7:312
4	1 to 6	10ms, Table 0	4	RB5:160 RB6:336 RB7:336	RB5:160 RB6:336 RB7:336	RB5:144 RB6:312 RB7:312	RB5:144 RB6:312 RB7:312
5	1 to 6	10ms, Table 0	4	RB5:176 RB6:336 RB7:336	RB5:176 RB6:336 RB7:336	RB5:160 RB6:312 RB7:312	RB5:160 RB6:312 RB7:312
6	1 to 6	10ms, Table 0	4	RB5:192 RB6:336 RB7:336	RB5:192 RB6:336 RB7:336	RB5:176 RB6:312 RB7:312	RB5:176 RB6:312 RB7:312
7	1 to 6	10ms, Table 0	4	RB5:208 RB6:336 RB7:336	RB5:224 RB6:336 RB7:336	RB5:192 RB6:312 RB7:312	RB5:208 RB6:312 RB7:312
8	1 to 6	10ms, Table 0	4	RB5:224 RB6:336 RB7:336	RB5:224 RB6:336 RB7:336	RB5:208 RB6:312 RB7:312	RB5:208 RB6:312 RB7:312
9	1 to 6	10ms, Table 0	4	RB5:288 RB6:336 RB7:336	RB5:296 RB6:336 RB7:336	RB5:272 RB6:312 RB7:312	RB5:280 RB6:312 RB7:312
10	1 to 6	10ms, Table 0	4	RB5:296 RB6:336 RB7:336	RB5:296 RB6:336 RB7:336	RB5:280 RB6:312 RB7:312	RB5:280 RB6:312 RB7:312
11	1 to 6	10ms, Table 0	4	RB5:312 RB6:336 RB7:336	RB5:336 RB6:336 RB7:336	RB5:296 RB6:312 RB7:312	RB5:320 RB6:312 RB7:312
12	1 to 6	10ms, Table 0	4	RB5:336 RB6:336 RB7:336	RB5:336 RB6:336 RB7:336	RB5:320 RB6:312 RB7:312	RB5:320 RB6:312 RB7:312
13	2,4,6	2ms, Table 0	8	RB5:96 RB6:336 RB7:336	RB5:112 RB6:336 RB7:336	RB5:80 RB6:312 RB7:312	RB5:96 RB6:312 RB7:312
14	2,4,6	2ms, Table 0	8	RB5:112 RB6:336 RB7:336	RB5:112 RB6:336 RB7:336	RB5:96 RB6:312 RB7:312	RB5:96 RB6:312 RB7:312
15	2,4,6	2ms, Table 0	8	RB5:144 RB6:336 RB7:336	RB5:144 RB6:336 RB7:336	RB5:128 RB6:312 RB7:312	RB5:128 RB6:312 RB7:312
16	2,4,6	2ms, Table 0	8	RB5:160 RB6:336 RB7:336	RB5:160 RB6:336 RB7:336	RB5:144 RB6:312 RB7:312	RB5:144 RB6:312 RB7:312
17	2,4,6	2ms, Table 0	8	RB5:176 RB6:336 RB7:336	RB5:176 RB6:336 RB7:336	RB5:160 RB6:312 RB7:312	RB5:160 RB6:312 RB7:312
18	2,4,6	2ms, Table 0	8	RB5:192 RB6:336 RB7:336	RB5:192 RB6:336 RB7:336	RB5:176 RB6:312 RB7:312	RB5:176 RB6:312 RB7:312
19	2,4,6	2ms, Table 0	8	RB5:208 RB6:336 RB7:336	RB5:224 RB6:336 RB7:336	RB5:192 RB6:312 RB7:312	RB5:208 RB6:312 RB7:312
20	2,4,6	2ms, Table 0	8	RB5:224 RB6:336 RB7:336	RB5:224 RB6:336 RB7:336	RB5:208 RB6:312 RB7:312	RB5:208 RB6:312 RB7:312
21	2,4,6	2ms, Table 0	8	RB5:288	RB5:296	RB5:272	RB5:280

				RB6:336 RB7:336	RB6:336 RB7:336	RB6:312 RB7:312	RB6:312 RB7:312
22	2,4,6	2ms, Table 0	8	RB5:296 RB6:336 RB7:336	RB5:296 RB6:336 RB7:336	RB5:280 RB6:312 RB7:312	RB5:280 RB6:312 RB7:312
23	2,4,6	2ms, Table 0	8	RB5:312 RB6:336 RB7:336	RB5:336 RB6:336 RB7:336	RB5:296 RB6:312 RB7:312	RB5:320 RB6:312 RB7:312
24	2,4,6	2ms, Table 0	8	RB5:336 RB6:336 RB7:336	RB5:336 RB6:336 RB7:336	RB5:320 RB6:312 RB7:312	RB5:320 RB6:312 RB7:312
NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.							
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size is set to UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit). This will enable the UE to return th data within one UL TTI.							
NOTE 3: The test data size is for DTCH mapped to E-DCH is selected according to the MAC-d PDU size to be tested = DL RLC payload size for the MAC-d PDU size minus 8 bits (size of 7 bit length indicator and expansion bit).							

Specific Message Contents

Use the same RADIO BEARER SETUP message as specified in 34.108 using condition A16 with the following exceptions:

- RAB information for setup	The IE "RAB information for setup" shall be present in addition to the IE "RAB information for setup" present in the default message for condition A16. This means that three RABs shall be established. (high-speed AM DTCH for PS domain) 0000 0111B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity. PS domain Not Present useT315
- RAB info	
- RAB identity	
- CN domain identity	
- NAS Synchronization Indicator	
- Re-establishment timer	
- RB information to setup	
- RB identity	27
- PDCP info	Not Present
- CHOICE RLC info type	RLC info
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	256
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE

<ul style="list-style-type: none"> - RB mapping info - Information for each multiplexing option - RLC logical channel mapping indicator - Number of uplink RLC logical channels - Uplink transport channel type - Logical channel identity - E-DCH MAC-d flow identity - DDI - RLC PDU size list <ul style="list-style-type: none"> - RLC PDU size - Include in scheduling info - MAC logical channel priority - Downlink RLC logical channel info - Number of downlink RLC logical channels - Downlink transport channel type - DL DCH Transport channel identity - DL DSCH Transport channel identity - DL HS-DSCH MAC-d flow identity - Logical channel identity 	<ul style="list-style-type: none"> 1 RBMuxOption Not Present 1 E-DCH 8 4 7 1 RLC PDU size 336 bits TRUE 8 1 HS-DSCH Not present Not present 3 Not Present
<p>Added or Reconfigured UL TrCH information</p> <ul style="list-style-type: none"> - Uplink transport channel type - CHOICE UL parameters <ul style="list-style-type: none"> - E-DCH Transmission Time Interval - HARQ info for E-DCH <ul style="list-style-type: none"> - HARQ RV Configuration - Added or reconfigured E-DCH MAC-d flow <ul style="list-style-type: none"> - E-DCH MAC-d flow identity - E-DCH MAC-d flow power offset - E-DCH MAC-d flow maximum number of retransmissions - E-DCH MAC-d flow multiplexing list - CHOICE transmission grant type <ul style="list-style-type: none"> - Max MAC-e PDU contents size - 2 ms non-scheduled transmission grant HARQ process allocation - Uplink transport channel type - CHOICE UL parameters <ul style="list-style-type: none"> - E-DCH Transmission Time Interval - HARQ info for E-DCH <ul style="list-style-type: none"> - HARQ RV Configuration - Added or reconfigured E-DCH MAC-d flow <ul style="list-style-type: none"> - E-DCH MAC-d flow identity - E-DCH MAC-d flow power offset - E-DCH MAC-d flow maximum number of retransmissions - E-DCH MAC-d flow multiplexing list - CHOICE transmission grant type <ul style="list-style-type: none"> - Added or reconfigured E-DCH MAC-d flow <ul style="list-style-type: none"> - E-DCH MAC-d flow identity - E-DCH MAC-d flow power offset - E-DCH MAC-d flow maximum number of retransmissions - E-DCH MAC-d flow multiplexing list - CHOICE transmission grant type <ul style="list-style-type: none"> - Added or reconfigured E-DCH MAC-d flow <ul style="list-style-type: none"> - E-DCH MAC-d flow identity - E-DCH MAC-d flow power offset - E-DCH MAC-d flow maximum number of retransmissions - E-DCH MAC-d flow multiplexing list - CHOICE transmission grant type 	<ul style="list-style-type: none"> 1 E-DCH added with one DCCH MAC-d flow and three DTCH MAC-d flows E-DCH E-DCH 10 ms rvtable (for DCCH) 1 0 7 Not Present Non-scheduled grant info 162 bits Not Present E-DCH E-DCH 10 ms rvtable (for first DTCH) 2 0 7 Not Present Scheduled grant info (for second DTCH) 3 0 7 Not Present Scheduled grant info (for third DTCH) 4 0 7 Not Present Scheduled grant info
<p>Added or Reconfigured DL TrCH information</p> <ul style="list-style-type: none"> - Downlink transport channel type - DL Transport channel identity - CHOICE DL parameters <ul style="list-style-type: none"> - HARQ Info <ul style="list-style-type: none"> - Number of Processes - CHOICE <i>Memory Partitioning</i> - Added or reconfigured MAC-d flow <ul style="list-style-type: none"> - MAC-hs queue to add or reconfigure list 	<ul style="list-style-type: none"> 1 TrCH (HS-DSCH for DTCH and DCCH) HS-DSCH Not Present HS-DSCH Reference to clause 6.10.2.4.5 Parameter Set Implicit (four queues)

- MAC-hs queue Id	0 (for first DTCH)
- MAC-d Flow Identity	0
- T1	50
- MAC-hs window size	16
- MAC-d PDU size Info	
- MAC-d PDU size	336
- MAC-d PDU size index	0
- MAC-hs queue Id	1 (for DCCH)
- MAC-d Flow Identity	1
- T1	50
- MAC-hs window size	16
- MAC-d PDU size Info	
- MAC-d PDU size	148
- MAC-d PDU size index	0
- MAC-hs queue Id	2 (for second DTCH)
- MAC-d Flow Identity	0
- T1	50
- MAC-hs window size	16
- MAC-d PDU size Info	
- MAC-d PDU size	336
- MAC-d PDU size index	0
- MAC-hs queue Id	3 (for third DTCH)
- MAC-d Flow Identity	0
- T1	50
- MAC-hs window size	16
- MAC-d PDU size Info	
- MAC-d PDU size	336
- MAC-d PDU size index	0
- MAC-hs queue to delete list	Not present
- DCH quality target	Not present

14.7.7.4 Test requirements

See 14.1.4.1 for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 18 the UE shall return a RLC SDU on RB5, RB6 and RB7 with same content as sent in downlink. For the case the returned UL RLC SDU size under test is smaller than the sent DL RLC SDU size then the payload of the received UL RLC SDU shall have the same content as the first N bits of the DL RLC SDU payload, where N equals the payload size of the UL RLC SDU.

14.7.8 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

14.7.8.1 Conformance requirement

See 14.7.1.1.

14.7.8.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.8:

1. To verify that the UE is able to establish the radio bearer combination.
2. To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to E-DCH.

14.7.8.3 Method of test

NOTE: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-6 IE “E-DCH physical layer category”. All UEs supporting E-DCH should signal a category between 1 and 6 for this IE even if the UE physical capability category is above 6.

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-5 IE “HS-DSCH physical layer category” (1 to 12). All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-e-hs is not configured.

The following parameters are specific for this test case:

Uplink TFS:

	TF	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH 3.4
TFS	TF0, bits	0x72	0x181	0x60	0x148
	TF1, bits	1x40	1x78	N/A	1x148
	TF2, bits	1x54	1x113	N/A	N/A
	TF3, bits	1x64	1x181	N/A	N/A
	TF4, bits	1x72	N/A	N/A	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, DCCH 3.4)
UL_TFC0	(TF0,TF0,TF0,TF0)
UL_TFC1	(TF1,TF0,TF0,TF0)
UL_TFC2	(TF2,TF1,TF0,TF0)
UL_TFC3	(TF3,TF2,TF0,TF0)
UL_TFC4	(TF4,TF3,TF0,TF0)
UL_TFC5	(TF0,TF0,TF0,TF1)
UL_TFC6	(TF1,TF0,TF0,TF1)
UL_TFC7	(TF2,TF1,TF0,TF1)
UL_TFC8	(TF3,TF2,TF0,TF1)
UL_TFC9	(TF4,TF3,TF0,TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH 3.4	DCCH 0.15 (SRB #5)
TFS	TF0, bits	1x0	0x181	0x60	0x148	0x3
	TF1, bits	1x40	1x78	N/A	1x148	1x3
	TF2, bits	1x54	1x113	N/A	N/A	N/A
	TF3, bits	1x64	1x181	N/A	N/A	N/A
	TF4, bits	1x72	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH 3.4, DCCH 0.15)
DL_TFC0	(TF0,TF0,TF0,TF0,TF0)
DL_TFC1	(TF1,TF0,TF0,TF0,TF0)
DL_TFC2	(TF2,TF1,TF0,TF0,TF0)
DL_TFC3	(TF3,TF2,TF0,TF0,TF0)
DL_TFC4	(TF4,TF3,TF0,TF0,TF0)
DL_TFC5	(TF0,TF0,TF0,TF1,TF0)
DL_TFC6	(TF1,TF0,TF0,TF1,TF0)
DL_TFC7	(TF2,TF1,TF0,TF1,TF0)
DL_TFC8	(TF3,TF2,TF0,TF1,TF0)
DL_TFC9	(TF4,TF3,TF0,TF1,TF0)
DL_TFC10	(TF0,TF0,TF0,TF0,TF1)
DL_TFC11	(TF1,TF0,TF0,TF0,TF1)
DL_TFC12	(TF2,TF1,TF0,TF0,TF1)
DL_TFC13	(TF3,TF2,TF0,TF0,TF1)
DL_TFC14	(TF4,TF3,TF0,TF0,TF1)
DL_TFC15	(TF0,TF0,TF0,TF1,TF1)
DL_TFC16	(TF1,TF0,TF0,TF1,TF1)
DL_TFC17	(TF2,TF1,TF0,TF1,TF1)
DL_TFC18	(TF3,TF2,TF0,TF1,TF1)
DL_TFC19	(TF4,TF3,TF0,TF1,TF1)

Parameter	Value
MAC-hs receiver window size	16
HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
1	512
2	512
3	512
4	512
5	1536
6	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					
			Max MAC-d PDU size	Minimum TBS	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFRI
1	2	512	336	357	1	QPSK	1	19
2	2	512	336	357	1	QPSK	1	19
3	3	512	336	357	1	QPSK	1	19
4	3	512	336	357	1	QPSK	1	19
5	6	512	336	357	1	QPSK	1	19
6	6	512	336	357	1	QPSK	1	19
7	6	1536	336	357	1	QPSK	1	19
8	6	1536	336	357	1	QPSK	1	19
9	6	2047	336	357	1	QPSK	1	19
10	6	2047	336	357	1	QPSK	1	19
11	3	1024	336	357	1	QPSK	1	19
12	6	1024	336	357	1	QPSK	1	19

NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI, i.e. such that the MAC-hs transport block size ("Minimum TBS") is bigger than the maximum MAC-d PDU size under test data + RLC, MAC-d and MAC-hs header size (21 bits). See 14.1.3.3 (MAC-d PDU size=336).

The generic test procedure in 14.1.4.2 is run for each sub-test.

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Speech radio bearer.

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	DCH				UL RLC SDU size (note 3)	Test data size (note 4)
				DL TFCs Under test	UL TFCs Under test	Implicitly tested	TFC subset identity (note 5)		
1	1 to 6	10ms, Table 0	4	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC5, DL_TFC6, DL_TFC10, UL_TFC0, UL_TFC5, UL_TFC6	0	RB5: 40 RB6: 181 RB7: 60 RB8: 312	RB5: 40 RB6: No data RB7: No data RB8: 312
2	1 to 6	10ms, Table 0	4	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC5, DL_TFC7, DL_TFC10, UL_TFC0, UL_TFC5, UL_TFC7	0	RB5: 54 RB6: 78 RB7: 60 RB8: 312	RB5: 54 RB6: 78 RB7: No data RB8: 312
3	2,4 and 6	2ms, Table 0	8	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC5, DL_TFC8, DL_TFC10, UL_TFC0, UL_TFC5, UL_TFC8	1	RB5: 64 RB6: 113 RB7: 60 RB8: 312	RB5: 64 RB6: 113 RB7: No data RB8: 312
4	2,4 and 6	2ms, Table 0	8	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC5, DL_TFC9, DL_TFC10, UL_TFC0, UL_TFC5, UL_TFC9	2	RB5: 72 RB6: 181 RB7: 60 RB8: 312	RB5: 72 RB6: 181 RB7: No data RB8: 312
<p>NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.</p> <p>NOTE 2: Void</p> <p>NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size is set to $N \times \text{UL RLC payload size} - 8$ bits (size of 7 bit length indicator and expansion bit), where N is the number of transport blocks for the UL transport format under test. This will enable the UE to return the data within one UL TTI.</p> <p>NOTE 4: The test data size is for DTCH mapped to E-DCH selected according to the MAC-d PDU size to be tested.</p> <p>NOTE 5: TFC subset identity shall be signalled by the SS on the downlink SRB#5, see generic test procedure in clause 14.1.4.2.</p>									

14.7.8.4 Test requirements

See 14.1.4.2 for definition of step numbers. For each sub-test:

1. At step 20 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 26 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the sub-test.
3. At step 26 and for each radio bearer where test data is sent in downlink the UE shall return a RLC SDU with same content as sent in downlink. For radio bearers where no data is sent in downlink then no data shall be received in uplink.

14.7.9 Conversational / speech / UL:(12.2, 7.95, 5.9, 4.75) kbps DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB on E-DCH and HS-DSCH + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

14.7.9.1 Conformance requirement

See 14.7.1.1.

14.7.9.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.9 (Alt.2)

14.7.9.3 Method of test

The following parameters are specific for this test case:

E-DCH Category	RLC Transmission window size	Modulation Scheme
1	512	QPSK
2	512	
3	512	
4	512	
5	1536	
6	1536	
7	1536	

HS-DSCH Category	Number of HARQ processes	RLC Receiving window size
1	2	512
2	2	512
3	3	512
4	3	512
5	6	512
6	6	512
7	6	1536
8	6	1536
9	6	2047
10	6	2047
11	3	1024
12	6	1024
13 to 20	6	2047

HS-PDSCH TFRC for mac-ehs (note 1)					
Max MAC-d PDU size	Minimum TBS	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFRI
56	80	1	QPSK	1	0
112	136	1	QPSK	1	2
136	160	1	QPSK	1	5
176	200	1	QPSK	1	10
264	288	1	QPSK	1	21

NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI, i.e. such that the MAC-ehs transport block size is equal to or bigger than the maximum MAC-d PDU size under test + MAC-ehs header size (24 bits).

The generic test procedure in 14.1.4.1a is run for each sub-test using condition A23 for radio bearer setup, as specified in 34.108.

Testing of UE supporting UE HS-DSCH physical layer category 13 to 20 shall be performed in accordance to test parameters, sub-tests and test points for UE HS-DSCH physical layer category 10.

Testing of UE supporting UE E-DCH category 7 shall be performed in accordance to test parameters, sub-tests and test points for E-DCH category 6.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	MAC-d PDU size under test (UL and DL)	UL RLC SDU size (note 2)	Test data size (note 3)
1	1 to 7	10ms, Table 0	4	56	40	40
2	1 to 7	10ms, Table 0	4	112	96	96
3	1 to 7	10ms, Table 0	4	136	120	120
4	1 to 7	10ms, Table 0	4	176	160	160
5	1 to 7	10ms, Table 0	4	264	248	248
6	2,4, 6, 7	2ms, Table 0	8	56	40	40
7	2,4, 6, 7	2ms, Table 0	8	112	96	96
8	2,4, 6, 7	2ms, Table 0	8	136	120	120
9	2,4, 6, 7	2ms, Table 0	8	176	160	160
10	2,4, 6, 7	2ms, Table 0	8	264	248	248

NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
The UL RLC SDU size is set to UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit). This will enable the UE to return the data within one UL TTI.
NOTE 3: The test data size is for DTCH mapped to E-DCH selected according to the MAC-d PDU size to be tested.

14.7.9.4 Test requirements

See 14.1.4.1a for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 18 the UE shall return a RLC SDU on RB5 with same content as sent in downlink.

14.7.10 Conversational / speech / UL:(12.65, 8.85, 6.6) kbps DL: (12.65, 8.85, 6.6) kbps / CS RAB on E-DCH and HS-DSCH + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

14.7.10.1 Conformance requirement

See 14.7.1.1.

14.7.10.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.10 (Alt.2)

14.7.10.3 Method of test

The following parameters are specific for this test case:

E-DCH Category	RLC Transmission window size	Modulation Scheme
1	512	QPSK
2	512	
3	512	
4	512	
5	1536	
6	1536	
7	1536	

HS-DSCH Category	Number of HARQ processes	RLC Receiving window size
1	2	512
2	2	512
3	3	512
4	3	512
5	6	512
6	6	512
7	6	1536
8	6	1536
9	6	2047
10	6	2047
11	3	1024
12	6	1024
13 to 20	6	2047

HS-PDSCH TFRC for mac-ehs (note 1)					
Max MAC-d PDU size	Minimum TBS	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFRI
56	80	1	QPSK	1	0
152	176	1	QPSK	1	7
200	224	1	QPSK	1	13
272	296	1	QPSK	1	22
NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI, i.e. such that the MAC-ehs transport block size is equal to or bigger than the maximum MAC-d PDU size under test + MAC-ehs header size (24 bits).					

The generic test procedure in 14.1.4.1a is run for each sub-test using condition A23 for radio bearer setup, as specified in 34.108.

Testing of UE supporting UE HS-DSCH physical layer category 13 to 20 shall be performed in accordance to test parameters, sub-tests and test points for UE HS-DSCH physical layer category 10.

Testing of UE supporting UE E-DCH category 7 shall be performed in accordance to test parameters, sub-tests and test points for E-DCH category 6.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	MAC-d PDU size under test (UL and DL)	UL RLC SDU size (note 2)	Test data size (note 3)
1	1 to 7	10ms, Table 0	4	56	40	40
2	1 to 7	10ms, Table 0	4	152	136	136
3	1 to 7	10ms, Table 0	4	200	184	184
4	1 to 7	10ms, Table 0	4	272	256	256
5	2,4, 6, 7	2ms, Table 0	8	56	40	40
6	2,4, 6, 7	2ms, Table 0	8	152	136	136
7	2,4, 6, 7	2ms, Table 0	8	200	184	184
8	2,4, 6, 7	2ms, Table 0	8	272	256	256

NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size is set to UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit). This will enable the UE to return the data within one UL TTI.
NOTE 3: The test data size is for DTCH mapped to E-DCH selected according to the MAC-d PDU size to be tested.

14.7.10.4 Test requirements

See 14.1.4.1a for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE shall return a RLC SDU on RB5 with same content as sent in downlink.

14.7.11 Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH for enhanced uplink/downlink in CELL_FACH

14.7.11.1 Conformance requirement

Conformance requirement

See 14.7.1.1

14.7.11.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.3:

- To verify that the UE is able to establish the radio bearer combination.
- To verify correct data transfer using all the possible MAC-d PDU sizes of the transport channel mapped to common E-DCH in CELL_FACH.

14.7.11.3 Method of test

NOTE 1: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-6 IE "E-DCH physical layer category". All UEs supporting E-DCH should signal a category between 1 and 6 for this IE even if the UE physical capability category is above 6.

NOTE 2: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-7 IE "HS-DSCH physical layer category extension". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value
Radio bearer	TS 34.108, clause 6.10.2.4.6.3 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) and uplink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-i/is) and using downlink Alt 2 (Fixed RLC and MAC-ehs) and uplink Alt 2 (Fixed RLC and MAC-i/is) for the SRB#1 to SRB#4.
MAC-ehs receiver window size	16
HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
1	512
2	512
3	512
4	512
5	1536
6	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					
			Max MAC-d PDU size	Minimum TBS	Number of MAC-d PDUs	Modulation scheme	Number of codes	TFRI
1	2	512	336	360	1	QPSK	1	30
2	2	512	336	360	1	QPSK	1	30
3	3	512	336	360	1	QPSK	1	30
4	3	512	336	360	1	QPSK	1	30
5	6	512	336	360	1	QPSK	1	30
6	6	512	336	360	1	QPSK	1	30
7	6	1536	336	360	1	QPSK	1	30
8	6	1536	336	360	1	QPSK	1	30
9	6	2047	336	360	1	QPSK	1	30
10	6	2047	336	360	1	QPSK	1	30
11	3	1024	336	360	1	QPSK	1	30
12	6	1024	336	360	1	QPSK	1	30
13 to 20	6	2047	336	360	1	QPSK	1	30

NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI considering all sub-tests. i.e. such that the MAC-ehs transport block size is bigger than the "Minimum TBS" that equals maximum MAC-d PDU size under test + the MAC-ehs header size (24 bits).

The generic test procedure in 14.1.4.3 is run for each sub-test.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	UL MAC-d PDU size under test	DL MAC-d PDU size under test	UL RLC SDU size (note 2)	Test data size (note 3)
1	1 to 6	10ms, Table 0	4	Flexible	Flexible	320	320
2	2,4 and 6	2ms, Table 0	8	Flexible	Flexible	320	320

NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size is set to UL RLC payload size. This will enable the UE to return the data within one UL TTI ("Use special value of HE field" is configured).
NOTE 3: The test data size is for DTCH mapped to E-DCH is selected according to the MAC-d PDU size to be tested = DL RLC payload size for the MAC-d PDU size.

14.7.11.4 Test requirements

See 14.1.5.1 for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 18 the UE shall return a RLC SDU with same content as sent in downlink.

14.7.11a Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on common E-DCH and HS-DSCH for enhanced CELL_FACH with DRX configured

14.7.11a.1 Conformance requirement

Conformance requirement

See 14.7.1.1

14.7.11a.2 Test purpose

For the reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.6.3:

1. To verify that the UE is able to establish the radio bearer combination.
2. To verify correct data transfer corresponding to Enhanced DRX reception pattern by UE when transport channel is mapped to common E-DCH in CELL_FACH.

14.7.11a.3 Method of test

NOTE: The reference to E-DCH Category refers to the UE capability as signalled in the Rel-6 IE "E-DCH physical layer category". All UEs supporting E-DCH should signal a category between 1 and 6 for this IE even if the UE physical capability category is above 6.

NOTE: The reference to HS-DSCH Categories refers to the UE capability as signalled in the Rel-7 IE "HS-DSCH physical layer category extension". This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

The following parameters are specific for this test case:

Parameter	Value
Radio bearer	TS 34.108, clause 6.10.2.4.6.3 using downlink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-ehs) and uplink MAC-d flow parameters according to Alt 3 (Flexible RLC and MAC-i/is) and using downlink Alt 2 (Fixed RLC and MAC-ehs) and uplink Alt 2 (Fixed RLC and MAC-i/is) for the SRB#1 to SRB#4.
MAC-ehs receiver window size	16
HS-DSCH MAC-d PDU size	336

E-DCH Category	RLC Transmission window size
1	512
2	512
3	512
4	512
5	1536
6	1536

HS-DSCH Category	HS-PDSCH Number of HARQ processes	RLC Receiving window size	HS-PDSCH TFRC (note 1)					TFR1
			Max MAC-d PDU size	Minimum TBS	Number of MAC-d PDUs	Modulation scheme	Number of codes	
1	2	512	336	360	1	QPSK	1	30
2	2	512	336	360	1	QPSK	1	30
3	3	512	336	360	1	QPSK	1	30
4	3	512	336	360	1	QPSK	1	30
5	6	512	336	360	1	QPSK	1	30
6	6	512	336	360	1	QPSK	1	30
7	6	1536	336	360	1	QPSK	1	30
8	6	1536	336	360	1	QPSK	1	30
9	6	2047	336	360	1	QPSK	1	30
10	6	2047	336	360	1	QPSK	1	30
11	3	1024	336	360	1	QPSK	1	30
12	6	1024	336	360	1	QPSK	1	30
13 to 20	6	2047	336	360	1	QPSK	1	30

NOTE 1: The HS-PDSCH TFRC should be selected to enable all test data on DTCH on HS-DSCH to be transmitted in one TTI considering all sub-tests. i.e. such that the MAC-ehs transport block size is bigger than the "Minimum TBS" that equals maximum MAC-d PDU size under test + the MAC-ehs header size (24 bits).

The generic test procedure in 14.1.4.3 is run for each sub-test.

Sub-tests:

Sub-test	Applicable E-DCH Category	E-DPDCH TTI and E-TFCI Table (note 1)	E-DPDCH Number of HARQ processes	UL MAC-d PDU size under test	DL MAC-d PDU size under test	UL RLC SDU size (note 2)	Test data size (note 3)
1	1 to 6	10ms, Table 0	4	Flexible	Flexible	320	320
2	2,4 and 6	2ms, Table 0	8	Flexible	Flexible	320	320

NOTE 1: E-DPDCH TTI and E-TFCI table according to TS 25.321 Annex B.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size is set to UL RLC payload size. This will enable the UE to return the data within one UL TTI ("Use special value of HE field" is configured).
NOTE 3: The test data size is for DTCH mapped to E-DCH is selected according to the MAC-d PDU size to be tested = DL RLC payload size for the MAC-d PDU size.

Specific Message Contents

Use the default parameter values for the system information block 5 with the same type specified in clause

6.1.1 of TS 34.108 for common E-DCH and HS-DSCH reception in CELL_FACH, with the following exceptions

Information Element	Value/remark
HS-DSCH DRX in CELL_FACH Information	
-T321	200ms
- HS-DSCH DRX cycle _{FACH}	4
- HS-DSCH Rx burst _{FACH}	1
- DRX Interruption by HS-DSCH data	FALSE

14.7.11a.4 Test requirements

See 14.1.5.1 for definition of step 12 and step 18.

- At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 18 the UE shall return a RLC SDU with same content as sent in downlink.