

26.3 Test of MS functions in idle mode

26.3.1 Initial conditions

The SIM shall contain a PLMN-Selector that contains only the HPLMN of the MS, and an empty forbidden PLMN list.

Related PICS/PIXIT statements

Type of mobile station (GSM 400, P-GSM 900, E-GSM 900, R-GSM 900 or DCS 1 800)

During the tests in 26.3.2 and 26.3.3, the following parameters apply according to the above PICS/PIXIT statement:

RACH control parameters

In cells

GSM 400: 1 to 7

GSM 900: 1 to 7

DCS 1 800: 1 to 6:

Multiband 900/1800: 1 to 7:

Multiband 450/900: 1 to 7:

Multiband 480/900: 1 to 7:

Multiband 450/1800: 1 to 7:

Multiband 480/1800: 1 to 7:

Max retrans	= 01	2 retransmissions
Tx-integer	= 0111	(10) slots for spreading
CB, Cell Barred	= 0	access is allowed
RE	= 1	re-establishment not allowed
AC C00 to AC C15	= 0	access is not barred

In cell

GSM 400: 8

GSM 900: 8

DCS 1 800: 7:

Multiband 900/1800: 8:

Multiband 450/900: 8:

Multiband 480/900: 8:

Multiband 450/1800: 8:

Multiband 480/1800: 8

Max retrans	= 01	2 retransmissions
Tx-integer	= 0111	(10) slots for spreading
CB, Cell Barred	= 1	access is not allowed
RE	= 1	re-establishment not allowed
AC C00 to AC C15	= 0	access is not barred

		GSM 900							DCS 1 800						
Cell	PLMN perm.	BA - ARFCN bit = 1							BA - ARFCN bit = 1						
1	00000100	7	39	65	66	85	97	124	520	580	610	702	703	830	885
2	00000100	8	40	67	68	86	98	123	521	581	612	704	705	831	884
3	00000100	9	41	69	70	87	99	122	522	582	614	706	707	832	883
4	00000100	10	42	71	72	88	100	121	523	583	616	708	709	833	882
5	00000100	11	43	73	74	89	101	120	524	584	618	710	711	844	881
6	00000100	12	44	75	76	90	102	119	525	585	620	712	713	835	880
7	00000100	13	45	77	78	91	103	118	526	586	622	714	715	836	879
8	00000100	124													

		GSM 450							GSM 480						
Cell	PLMN perm.	BA - ARFCN bit = 1							BA - ARFCN bit = 1						
1	00000100	261	267	268	281	288	291	293	308	314	315	328	335	338	340
2	00000100	260	269	270	282	289	264	275	307	316	317	329	336	311	322
3	00000100	262	271	272	283	290	265	277	309	318	319	330	337	312	324
4	00000100	263	273	274	284	292	266	279	310	320	321	331	339	313	326
5	00000100	264	275	276	285	260	269	270	311	322	323	332	307	316	317
6	00000100	265	277	278	286	262	271	272	312	324	325	333	309	318	319
7	00000100	266	279	280	287	263	273	274	313	326	327	334	310	320	321
8	00000100	293							340						

		Multiband 900/1800							
Cell	PLMN perm.	BA - ARFCN bit = 1							
1	00000100	7	39	702	66	85	885	124	
2	00000100	8	40	67	68	86	98	123	
3	00000100	9	41	69	70	87	99	122	
4	00000100	523	583	616	708	709	833	882	
5	00000100	520	7	39	702	85	885	124	
6	00000100	12	44	75	76	90	102	119	
7	00000100	526	586	622	714	715	836	879	
8	00000100	124							

		Multiband 450/900							Multiband 480/900						
Cell	PLMN perm.	BA - ARFCN bit = 1							BA - ARFCN bit = 1						
1	00000100	261	267	65	281	288	124	293	308	314	65	328	335	124	340
2	00000100	260	269	270	282	289	264	275	307	316	317	329	336	311	322
3	00000100	262	271	272	283	290	265	277	309	318	319	330	337	312	324
4	00000100	10	42	71	72	88	100	121	10	42	71	72	88	100	121
5	00000100	7	260	267	65	288	124	293	7	307	314	65	335	124	340
6	00000100	265	277	278	286	262	271	272	312	324	325	333	309	318	319
7	00000100	13	45	77	78	91	103	118	13	45	77	78	91	103	118
8	00000100	293							340						

Cell	PLMN perm.	Multiband 450/1800							Multiband 480/1800						
		BA - ARFCN bit = 1							BA - ARFCN bit = 1						
1	00000100	261	267	702	281	288	885	293	308	314	702	328	335	885	340
2	00000100	260	269	270	282	289	264	275	307	316	317	329	336	311	322
3	00000100	262	271	272	283	290	265	277	309	318	319	330	337	312	324
4	00000100	523	583	616	708	709	833	882	523	583	616	708	709	833	882
5	00000100	520	260	267	702	288	885	293	520	307	314	702	335	885	340
6	00000100	265	277	278	286	262	271	272	312	324	325	333	309	318	319
7	00000100	526	586	622	714	715	836	879	526	586	622	714	715	836	879
8	00000100	293							340						

Location area identification

GSM 400 and GSM 900 only - begin

Cell	MCC1	MCC2	MCC3	MNC1	MNC2	LAC
1	0	0	2	0	F	x
2	0	0	3	2	F	x
3	0	0	4	3	F	x
4	0	0	5	4	F	x
5	0	0	6	5	F	x
6	0	0	7	6	F	x
7	0	0	8	7	F	x
8	0	0	1	0	1	x

The HPLMN of the MS

GSM 400 and GSM 900 only - end

DCS 1 800 only - begin

Cell	MCC1	MCC2	MCC3	MNC1	MNC2	LAC
1	0	0	2	0	F	x
2	0	0	3	2	F	x
3	0	0	4	3	F	x
4	0	0	5	4	F	x
5	0	0	6	5	F	x
6	0	0	7	6	F	x
7	0	0	1	0	1	x

The HPLMN of the MS

DCS 1 800 only - end

Any Multiband MS - begin

Cell	MCC1	MCC2	MCC3	MNC1	MNC2	LAC
1	0	0	2	0	F	x
2	0	0	3	2	F	x
3	0	0	4	3	F	x
4	0	0	5	4	F	x
5	0	0	2	0	F	x
6	0	0	7	6	F	x
7	0	0	8	7	F	x
8	0	0	1	0	1	x

The HPLMN of the MS

Any Multiband MS - end

NOTE 1: 'x' denotes any value.

NOTE 2: The MS representation of the MCC, MNC on the handset can be manufacturer dependant.

NOTE 3: The NCC values of each cell must be different.

Control channel description and BS options

All

GSM 400: 8 cells

GSM 900: 8 cells

DCS 1 800: 7 cells:

Any Multiband MS: 8 cells:

CELL_RESELECT_HYSTERESIS	= 010	4dB RXLEV hysteresis
MS_TXPWR_MAX_CCH	=	value corresponding to the maximum available output power from MS
RXLEV_ACCESS_MIN	= 30	
ATT	= 0	no IMSI attach and detach
DTX	= 0	no discontinuous transmission
BS_AG_BLKS_RES	= 1	1 block reserved for access grant
CCCH_CONF	= 001	1 SDCCH combined with the CCCH
RADIO_LINK_TIMEOUT	= 5	10 s time-out
BS_PA_MFRMS	= 010	4 multiframes periods for paging
T3212 time-out value	= H'00	

Cell	GSM 900		DCS 1 800	
	level dB μ Vemf()	BCCH ARFCN	level dB μ Vemf()	BCCH ARFCN
1	+65	1	+65	520
2	+63	7	+63	580
3	+61	39	+61	610
4	+55	65	+55	702
5	+59	66	+59	703
6	+57	85	+57	830
7	+55	97	+55	885
8	+53	124		

Cell	GSM 450		DCS 480	
	level dB μ Vemf()	BCCH ARFCN	level dB μ Vemf()	BCCH ARFCN
1	+65	259	+65	306
2	+63	261	+63	308
3	+61	267	+61	314
4	+55	268	+55	315
5	+59	281	+59	328
6	+57	288	+57	335
7	+55	291	+55	338
8	+53	293	+53	340

Multiband 900/1800				
Cell	level dB μ Vemf()	BCCH ARFCN		
1	+65	520		
2	+63	7		
3	+61	39		
4	+55	702		
5	+59	66		
6	+57	85		
7	+55	885		
8	+53	124		

Multiband 450/900			Multiband 480/900	
Cell	level dB μ Vemf()	BCCH ARFCN	level dB μ Vemf()	BCCH ARFCN
1	+65	1	+65	1
2	+63	261	+63	308
3	+61	267	+61	314
4	+55	65	+55	65
5	+59	281	+59	328
6	+57	288	+57	335
7	+55	124	+55	124
8	+53	293	+53	340

Multiband 450/1800			Multiband 480/1800	
Cell	level dB μ Vemf()	BCCH ARFCN	level dB μ Vemf()	BCCH ARFCN
1	+65	520	+65	520
2	+63	261	+63	308
3	+61	267	+61	314
4	+55	702	+55	702
5	+59	281	+59	328
6	+57	288	+57	335
7	+55	885	+55	885
8	+53	293	+53	340

For testing an E-GSM Mobile station (see PICS/PIXIT), the BCCH ARFCN of cell 7 at GSM 900 column shall be 985 (instead of 97). For testing an R-GSM Mobile station (see PICS/PIXIT), the BCCH ARFCN of cell 7 at GSM 900 column shall be 965 (instead of 97).

NOTE 4: The SIM should contain a PLMN-Selector that contains only the HPLMN of the MS, and an empty forbidden PLMN list.

26.3.2 MS indication of available PLMNs

26.3.2.1 Test purpose

To verify that a MS can present the available PLMNs to the user when asked to do so in manual mode according to the requirements of GSM 05.08 and GSM 02.11.

26.3.2.2 Method of test

- a) The MS is switched on, equipped with a SIM containing default values except for those values listed under section 26.3.1 (initial conditions).
- b) The MS is put into manual network selection mode (see PIXIT).

26.3.2.3 Test requirements

- 1) On entering manual network selection mode, the MS shall present a list of available PLMNs in all its bands of operation (MCC and MNC values, or any other valid indications, see PIXIT), within 2 minutes. Any PLMN shall only be presented once. The list shall include the MCC and MNC of:

GSM 400 and GSM 900: cells 1 to 7, but not of cell 8.

DCS 1 800: cells 1 to 6, but not of cell 7.

Multiband: cells 2, 3, 4, 6, 7 and 1 or 5 (cell 1 and 5 have the same MCC and MNC), but not of cell 8.

26.3.3 MS will send only if BSS is "on air"

26.3.3.1 Test purpose

To verify that the MS will not produce any RF transmission if no BSS is received.

26.3.3.2 Method of test

- a) The RF-signal for the BCCHs of:

GSM 400 and GSM 900: cell 1 to 8 is switched off.

DCS 1 800: cell 1 to 7 is switched off.

Any Multiband: cell 1 to 8 is switched off.

- b) The SS shall wait 20 s to allow the MS to detect the loss of cells.
- c) By MMI, an attempt to originate a call is made.
- d) By MMI, an attempt to originate an emergency call is made.

Step d) is only performed if the MS supports speech (see PICS/PIXIT statement).

26.3.3.3 Test requirements

- 1) The MS must not give "service indication".
- 2) In steps c) and d) the MS shall not produce any RF output.

26.3.4 Manual mode of PLMN selection

26.3.4.1 Conformance requirements

In manual mode, the MS can try to obtain normal service on any available VPLMN and it shall try to obtain normal service on a VPLMN if and only if the user makes a manual selection of this VPLMN.

Reference

GSM 03.22 section 3.1.

26.3.4.2 Test purpose

To check that in manual mode the MS is able to obtain normal service on a PLMN which is neither the better nor a preferred PLMN and that it tries to obtain service on VPLMN if and only if the user selects it manually.

26.3.4.3 Method of test

Initial conditions

System Simulator:

2 cells, defaults parameter unless otherwise specified.

The SS transmits 2 BCCH carriers in the supported band(s) of the mobile station (for a multiband MS carrier A and B shall be in different bands) with the initial following parameters:

		level (dB μ Vemf)
carrier A	PLMN 1	38
carrier B	PLMN 2	33

Mobile Station:

The MS is "idle updated" on PLMN1 (HPLMN) and is in manual mode.

The preferred PLMN list does not contain PLMN2, it contains PLMN 3.

Related PICS/PIXIT statement(s)

Description of the manual PLMN selector.

Support of multiband functionality

Foreseen final state of the MS

The MS is "idle updated".

Test procedure

For the different networks and during the whole test, "IMSI attach" flag is set in the BCCH data.

Carrier A is turned off. The MS does not attempt a location updating during 2 minutes.

Carrier A is turned back on with a different MCC-MNC (indicating PLMN 3) and with a higher level (48 dBmVemf) than PLMN 2. The MS does not attempt a location updating during 2 minutes.

PLMN 2 is selected manually. The MS performs a location updating on PLMN 2. Carrier B is turned off. The MS does not attempt a location updating during 2 minutes.

Maximum duration of test

10 minutes

Expected Sequence

Step	Direction	Message	Comments
1 2	SS		carrier A is turned off wait 2 min: the MS shall not send any CHANNEL REQUEST messages during this time
3 4	SS		carrier A is turned on with a different MNC-NCC (PLMN3) and with a high level (48dBmVemf) wait 2 min: the MS shall not send any CHANNEL REQUEST messages during this time
5 6 7 8 9 10	MS MS -> SS SS -> MS MS -> SS SS -> MS SS -> MS	CHANNEL REQUEST IMMEDIATE ASSIGNMENT LOCATION UPDATING REQUEST LOCATION UPDATING ACCEPT CHANNEL RELEASE	PLMN 2 selected manually on carrier B
11 12	SS		carrier B is turned off wait 2 min: the MS shall not send any CHANNEL REQUEST messages during this time

Specific message contents

None