TSG RAN Meeting #22 **RP-030607**
Maui, Hawaii, US, 9 - 12 December 2003

Title **CRs (Rel-6) to TS 25.101, TS 25.102, TS 25.104, TS25.123, TS 25.133 under TEI6**
Source **TSG RAN WG4**
Agenda Item **8.9**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-031076	25.101	274	1	D	Rel-6	6.2.0	SML definition	TEI6
R4-030965	25.101	294		F	Rel-6	6.2.0	New Compressed Mode Reference Pattern	TEI6
R4-031146	25.101	316		F	Rel-6	6.2.0	Additional spurious emission requirements for Band II to protect UMTS850	TEI6
R4-031149	25.101	317		F	Rel-6	6.2.0	Clarification of UE blocking definition	TEI6
R4-030901	25.102	142		F	Rel-6	5.5.0	Transmitter and Receiver Spurious emisssions for TDD	TEI6
R4-031110	25.104	211		B	Rel-6	6.3.0	Introduction of DCH performances for BS without RX diversity	TEI6
R4-030897	25.123	329		B	Rel-6	5.6.0	Interference measurement in UpPTS for 1.28Mcps TDD	TEI6
R4-030969	25.133	626		F	Rel-6	6.3.0	FDD Inter Frequency Fading Test Case	TEI6
R4-030971	25.133	627		F	Rel-6	6.3.0	Correction to CPICH RSCP measurement report mapping	TEI6
R4-030972	25.133	628		F	Rel-6	6.3.0	Correction to correct reporting of neighbours in AWGN propagation condition	TEI6
R4-030973	25.133	629		F	Rel-6	6.3.0	Correction to correct reporting of neighbours in fading propagation condition	TEI6
R4-031014	25.133	636		F	Rel-6	5.8.0	Test time reduction for RRM delay tests	TEI6

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-031076**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.101** **CR** **274** ⌘ **rev** **1** ⌘ Current version: **6.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	SML definition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI6
Date:	⌘	26/11/2003
Category:	⌘	**D**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Definition of abreviation SML is missing
Summary of change:	⌘	Definition of SML as soft metric location is added into the list of abbreviations Definition of HS-SCCH is also added into the list of abbreviations Definition of HARQ is corrected
Consequences if not approved:	⌘	Ambigous abbreviation remains in specification. <Isolated Impact Analysis> No impact is indetified.

Clauses affected:	⌘	3.2			
Other specs affected:	⌘	**Y**	**N**	Other core specifications	⌘
		☐	☐	Test specifications	
		☐	☐	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ACLR	Adjacent Channel Leakage power Ratio
ACS	Adjacent Channel Selectivity
AICH	Acquisition Indication Channel
BER	Bit Error Ratio
BLER	Block Error Ratio
CQI	Channel Quality Indicator
CW	Continuous Wave (un-modulated signal)
DCH	Dedicated Channel, which is mapped into Dedicated Physical Channel.
DL	Down Link (forward link)
DTX	Discontinuous Transmission
DPCCH	Dedicated Physical Control Channel
DPCH	Dedicated Physical Channel
$DPCH\_E_c$	Average energy per PN chip for DPCH.
$\frac{DPCH\_E_c}{I_{or}}$	The ratio of the transmit energy per PN chip of the DPCH to the total transmit power spectral density at the Node B antenna connector.
DPDCH	Dedicated Physical Data Channel
EIRP	Effective Isotropic Radiated Power
E_c	Average energy per PN chip.
$\frac{E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for different fields or physical channels to the total transmit power spectral density.
FACH	Forward Access Channel
FDD	Frequency Division Duplex
FDR	False transmit format Detection Ratio. A false Transport Format detection occurs when the receiver detects a different TF to that which was transmitted, and the decoded transport block(s) for this incorrect TF passes the CRC check(s).
F_{uw}	Frequency of unwanted signal. This is specified in bracket in terms of an absolute frequency(s) or a frequency offset from the assigned channel frequency.
HARQ	Hybrid Automatic Repeat Request
HSDPA	High Speed Downlink Packet Access
HS-DSCH	High Speed Downlink Shared Channel
HS-PDSCH	High Speed Physical Downlink Shared Channel
HS-SCCH	High Speed Shared Control Channel
~~HARQ~~	~~Hybrid ARQ sequence~~
Information Data Rate	Rate of the user information, which must be transmitted over the Air Interface. For example, output rate of the voice codec.
I_o	The total received power spectral density, including signal and interference, as measured at the UE antenna connector.
I_{oc}	The power spectral density (integrated in a noise bandwidth equal to the chip rate and normalized to the chip rate) of a band limited white noise source (simulating interference from cells, which are not defined in a test procedure) as measured at the UE antenna connector.
I_{or}	The total transmit power spectral density (integrated in a bandwidth of $(1+\alpha)$ times the chip rate and normalized to the chip rate)of the downlink signal at the Node B antenna connector.
$\hat{I}_{or}$	The received power spectral density (integrated in a bandwidth of $(1+\alpha)$ times the chip rate and normalized to the chip rate) of the downlink signal as measured at the UE antenna connector.
MER	Message Error Ratio
Node B	A logical node responsible for radio transmission / reception in one or more cells to/from the User Equipment. Terminates the Iub interface towards the RNC
OCNS	Orthogonal Channel Noise Simulator, a mechanism used to simulate the users or control signals on the other orthogonal channels of a downlink link.

$OCNS\_E_c$	Average energy per PN chip for the OCNS.
$\frac{OCNS\_E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for the OCNS to the total transmit power spectral density.
P-CCPCH	Primary Common Control Physical Channel
PCH	Paging Channel
$P-CCPCH\ \frac{E_c}{I_o}$	The ratio of the received P-CCPCH energy per chip to the total received power spectral density at the UE antenna connector.
$\frac{P-CCPCH\_E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for the P-CCPCH to the total transmit power spectral density.
P-CPICH	Primary Common Pilot Channel
PICH	Paging Indicator Channel
PPM	Parts Per Million
R	Number of information bits per second excluding CRC bits successfully received on HS-DSCH by a HSDPA capable UE.
<REFSENS>	Reference sensitivity
<REF $\hat{I}_{or}$ >	Reference $\hat{I}_{or}$
RACH	Random Access Channel
SCH	Synchronization Channel consisting of Primary and Secondary synchronization channels
$S-CCPCH$	Secondary Common Control Physical Channel.
$S-CCPCH\_E_c$	Average energy per PN chip for S-CCPCH.
SIR	Signal to Interference ratio
SML	Soft Metric Location (Soft channel bit)
SSDT	Site Selection Diversity Transmission
STTD	Space Time Transmit Diversity
TDD	Time Division Duplexing
TFC	Transport Format Combination
TFCI	Transport Format Combination Indicator
TPC	Transmit Power Control
TSTD	Time Switched Transmit Diversity
UE	User Equipment
UL	Up Link (reverse link)
UTRA	UMTS Terrestrial Radio Access

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030965**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.101** **CR** **294** ⌘ **rev** ⌘ Current version: **6.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	New compressed mode reference pattern
Source:	⌘	RAN WG4
Work item code:	⌘	TEI6
Date:	⌘	26/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	In TS 25.101 the downlink reference compressed mode parameters defined in annex A.5 does not include patterns with TGL1=14 and TGPL1=4.
Summary of change:	⌘	A new set of downlink compressed mode reference pattern is added in the annex (A.5) of TS 25.101. The new pattern comprises of TGL1=14 slots and TGPL1=4 frames. The pattern can be used in those RRM test cases in TS 25.133, where compressed mode method SF/2 is required to carry out measurements on neighbour cells.
Consequences if not approved:	⌘	There will be no RRM test case that require compressed mode for measurements and uses compressed mode patterns with TGL1=14 and TGPL1=4.

Clauses affected:	⌘	A.5

	Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘
	X			Test specifications	TS 34.121, TS 25.133
		X		O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:
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A.5 DL reference compressed mode parameters

Parameters described in Table A.21 are used in some test specified in TS 25.101 while parameters described in Table A.22 are used in some tests specified in TS 25.133.

Set 1 parameters in Table A.21 are applicable when compressed mode by spreading factor reduction is used in downlink. Set 2 parameters in Table A.21 are applicable when compressed mode by puncturing is used in downlink.

Table A.21: Compressed mode reference pattern 1 parameters

Parameter	Set 1	Set 2	Note
TGSN (Transmission Gap Starting Slot Number)	11	11	
TGL1 (Transmission Gap Length 1)	7	7	
TGL2 (Transmission Gap Length 2)	-	-	Only one gap in use.
TGD (Transmission Gap Distance)	0	0	Only one gap in use.
TGPL1 (Transmission Gap Pattern Length)	4	4	
TGPL2 (Transmission Gap Pattern Length)	-	-	Only one pattern in use.
TGPRC (Transmission Gap Pattern Repetition Count)	NA	NA	Defined by higher layers
TGCFN (Transmission Gap Connection Frame Number):	NA	NA	Defined by higher layers
UL/DL compressed mode selection	DL & UL	DL & UL	2 configurations possible DL &UL / DL
UL compressed mode method	SF/2	SF/2	
DL compressed mode method	SF/2	Puncturing	
Downlink frame type and Slot format	11B	11A	
Scrambling code change	No	No	
RPP (Recovery period power control mode)	0	0	
ITP (Initial transmission power control mode)	0	0	

Table A.22: Compressed mode reference pattern 2 parameters

Parameter	Set 1	Set 2	Set 3	Set 4	Note
TGSN (Transmission Gap Starting Slot Number)	4	4	10	8	
TGL1 (Transmission Gap Length 1)	7	7	10	14	
TGL2 (Transmission Gap Length 2)	-	-	-	-	Only one gap in use.
TGD (Transmission Gap Distance)	0	0	0	0	
TGPL1 (Transmission Gap Pattern Length)	3	12	11	4	
TGPL2 (Transmission Gap Pattern Length)	-	-	-		Only one pattern in use.
TGPRC (Transmission Gap Pattern Repetition Count)	NA	NA	NA	NA	Defined by higher layers
TGCFN (Transmission Gap Connection Frame Number):	NA	NA	NA	NA	Defined by higher layers
UL/DL compressed mode selection	DL & UL	DL & UL	DL & UL	DL & UL	2 configurations possible. DL & UL / DL
UL compressed mode method	SF/2	SF/2	SF/2	SF/2	
DL compressed mode method	SF/2	SF/2	Puncturing	SF/2	
Downlink frame type and Slot format	11B	11B	11A	11B	
Scrambling code change	No	No	No	No	
RPP (Recovery period power control mode)	0	0	0	0	
ITP (Initial transmission power control mode)	0	0	0	0	

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-031146**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.101** **CR** **316** ⌘ **rev** ⌘ Current version: **6.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Additional spurious emission requirements for Band II to protect UMTS850
Source:	⌘	RAN WG4
Work item code:	⌘	TEI6
Date:	⌘	26/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Introduction of additional spurious emission requirements for Band II transmitter and reciver to protect UMTS850
Summary of change:	⌘	Additional spurious emissions requirements for Band II transmitter and receiver have been introduced in order to provide sufficient protection for UMTS850
Consequences if not approved:	⌘	Additional spurious emissions requirements for Band II transmitter and receiver to provide sufficient protection for UMTS 850 are missing

Clauses affected:	⌘	6.6.3, 7.9.1

	Y	N			
Other specs Affected:		X	Other core specifications	⌘	
	X		Test specifications		TS 34.121
		X	O&M Specifications		

Other comments:	⌘	

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change reques

6 Transmitter characteristics

---NEXT MODIFIED SECTION---

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6.6.3 Spurious emissions

Spurious emissions are emissions which are caused by unwanted transmitter effects such as harmonics emission, parasitic emission, intermodulation products and frequency conversion products, but exclude out of band emissions.

The frequency boundary and the detailed transitions of the limits between the requirement for out band emissions and spectrum emissions are based on ITU-R Recommendations SM.329-9[2].

6.6.3.1 Minimum requirement

These requirements are only applicable for frequencies, which are greater than 12.5 MHz away from the UE centre carrier frequency.

Table 6.12: General spurious emissions requirements

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
9 kHz ≤ f < 150 kHz	1 kHz	-36 dBm
150 kHz ≤ f < 30 MHz	10 kHz	-36 dBm
30 MHz ≤ f < 1000 MHz	100 kHz	-36 dBm
1 GHz ≤ f < 12.75 GHz	1 MHz	-30 dBm

Table 6.13: Additional spurious emissions requirements

Operating Band	Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
I	921 MHz ≤ f < 925 MHz	100 kHz	-60 dBm *
	925 MHz ≤ f ≤ 935 MHz	100 kHz	-67 dBm *
	935 MHz < f ≤ 960 MHz	100 kHz	-79 dBm *
	1805 MHz ≤ f ≤ 1880 MHz	100 kHz	-71 dBm *
	1893.5 MHz <f<1919.6 MHz	300 kHz	-41 dBm
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm
II	869 MHz ≤ f ≤ 894 MHz	3.84 MHz	-60 dBm
	1930 MHz ≤ f ≤ 1990 MHz	3.84 MHz	-60 dBm
III	921 MHz ≤ f < 925 MHz	100 kHz	-60 dBm *
	925 MHz ≤ f ≤ 935 MHz	100 kHz	-67 dBm *
	935 MHz < f ≤ 960 MHz	100 kHz	-79 dBm *
	1805 MHz ≤ f ≤ 1880 MHz	3.84 MHz	-60 dBm
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm *
* The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in Table 6.12 are permitted for each UARFCN used in the measurement			

---NEXT MODIFIED SECTION---

7 Receiver characteristics

---NEXT MODIFIED SECTION---

7.9 Spurious emissions

The spurious emissions power is the power of emissions generated or amplified in a receiver that appear at the UE antenna connector.

7.9.1 Minimum requirement

The power of any narrow band CW spurious emission shall not exceed the maximum level specified in Table 7.10 and Table 7.11

Table 7.10: General receiver spurious emission requirements

Frequency Band	Measurement Bandwidth	Maximum level	Note
30MHz ≤ f < 1GHz	100 kHz	-57 dBm	
1GHz ≤ f ≤ 12.75 GHz	1 MHz	-47 dBm	

Table 7.11: Additional receiver spurious emission requirements

Band	Frequency Band	Measurement Bandwidth	Maximum level	Note
I	921 MHz ≤ f < 925 MHz	100 kHz	-60 dBm *	
	925 MHz ≤ f ≤ 935 MHz	100 kHz	-67 dBm *	
	935 MHz < f ≤ 960 MHz	100 kHz	-79 dBm *	
	1805 MHz ≤ f ≤ 1880 MHz	100 kHz	-71 dBm *	
	1920 MHz ≤ f ≤ 1980 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm	UE receive band
II	869 MHz ≤ f < 894 MHz	3.84 MHz	-60 dBm	
	1850 MHz ≤ f ≤ 1910 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	1930 MHz ≤ f ≤ 1990 MHz	3.84 MHz	-60 dBm	UE receive band
III	921 MHz ≤ f < 925 MHz	100 kHz	-60 dBm*	
	925 MHz ≤ f ≤ 935 MHz	100 kHz	-67 dBm*	
	935 MHz < f ≤ 960 MHz	100 kHz	-79 dBm*	
	1710 MHz ≤ f ≤ 1785 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	1805 MHz ≤ f ≤ 1880 MHz	3.84 MHz	-60 dBm	UE receive band
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm	
*	The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in Table 7.10 are permitted for each UARFCN used in the measurement			

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-031149**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.101** **CR** **317** ⌘ **rev** ⌘ Current version: **6.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Clarification of UE blocking definition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI6
Date:	⌘	26/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The blocking definitions do not make clear what the difference is between in-band and out-of-band blocking.
Summary of change:	⌘	The definitions for in-band and out-of-band blocking are clarified in terms of what frequency ranges they cover. In addition, corrections are made to - The frequency range for Band II in-band blocking - The reference from out-of-band to in-band blocking for Bands II and III - The Band I spurious emission requirement for Band III mobiles
Consequences if not approved:	⌘	The blocking requirements can be misinterpreted.

Clauses affected:	⌘	6.6.3, 7.6.1, 7.6.2

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	
	X		Test specifications	34.121
		X	O&M Specifications	

Other comments:	⌘	This correction is necessary for the clarity of the new Band VI blocking requirements (25.101 CR 315).

6.6.3 Spurious emissions

Spurious emissions are emissions which are caused by unwanted transmitter effects such as harmonics emission, parasitic emission, intermodulation products and frequency conversion products, but exclude out of band emissions.

The frequency boundary and the detailed transitions of the limits between the requirement for out band emissions and spectrum emissions are based on ITU-R Recommendations SM.329-9[2].

6.6.3.1 Minimum requirement

These requirements are only applicable for frequencies, which are greater than 12.5 MHz away from the UE centre carrier frequency.

Table 6.12: General spurious emissions requirements

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
9 kHz ≤ f < 150 kHz	1 kHz	-36 dBm
150 kHz ≤ f < 30 MHz	10 kHz	-36 dBm
30 MHz ≤ f < 1000 MHz	100 kHz	-36 dBm
1 GHz ≤ f < 12.75 GHz	1 MHz	-30 dBm

Table 6.13: Additional spurious emissions requirements

Operating Band	Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
I	921 MHz ≤ f < 925 MHz	100 kHz	-60 dBm *
	925 MHz ≤ f ≤ 935 MHz	100 kHz	-67 dBm *
	935 MHz < f ≤ 960 MHz	100 kHz	-79 dBm *
	1805 MHz ≤ f ≤ 1880 MHz	100 kHz	-71 dBm *
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	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm
II	1930 MHz ≤ f ≤ 1990 MHz	3.84 MHz	-60 dBm
III	921 MHz ≤ f < 925 MHz	100 kHz	-60 dBm *
	925 MHz ≤ f ≤ 935 MHz	100 kHz	-67 dBm *
	935 MHz < f ≤ 960 MHz	100 kHz	-79 dBm *
	1805 MHz ≤ f ≤ 1880 MHz	3.84 MHz	-60 dBm
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm *
Note * The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in Table 6.12 are permitted for each UARFCN used in the measurement			

7.6 Blocking characteristics

The blocking characteristic is a measure of the receiver's ability to receive a wanted signal at its assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the spurious response or the adjacent channels, without this unwanted input signal causing a degradation of the performance of the receiver beyond a specified limit. The blocking performance shall apply at all frequencies except those at which a spurious response occur.

7.6.1 Minimum requirement (In-band blocking)

The BER shall not exceed 0.001 for the parameters specified in Table 7.6. In-band blocking is defined for an unwanted interfering signal falling into the UE receive band or into the first 15 MHz below or above the UE receive band.

Table 7.6: In-band blocking

Parameter	Unit	Level	
DPCH_Ec	dBm/3.84 MHz	<REFSENS>+3 dB	
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 3 dB	
$I_{blocking}$ mean power (modulated)	dBm	-56	-44
F_{uw} offset		=±10 MHz	≤-15 MHz & ≥15 MHz
F_{uw} (Band I operation)	MHz	2102.4≤ f ≤2177.6 (Note 2)	2095≤ f ≤2185
F_{uw} (Band II operation)	MHz	1922.4≤ f ≤~~1977.6~~1997.6 (Note 2)	1915≤ f ≤2005
F_{uw} (Band III operation)	MHz	1797.4≤ f ≤1887.6 (Note 2)	1790≤ f ≤1895
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)	

Note 1: $I_{blocking}$ (modulated) consists of the common channels needed for tests as specified in Table C.7 and 16 dedicated data channels as specified in Table C.6.

Note 2: For each carrier frequency the requirement ~~are~~ is valid for two frequencies, the carrier frequency +/- 10 MHz.

7.6.2 Minimum requirement (Out of-band blocking)

The BER shall not exceed 0.001 for the parameters specified in Table 7.7. Out-of-band band blocking is defined for an unwanted interfering signal falling more than 15 MHz below or above the UE receive band. For Table 7.7 up to 24 exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1 MHz step size. For these exceptions the requirements of clause 7.7 Spurious response are applicable.

Table 7.7: Out of band blocking

Parameter	Unit	Frequency range 1	Frequency range 2	Frequency range 3
DPCH_Ec	dBm/3.84 MHz	<REFSENS>+3 dB	<REFSENS>+3 dB	<REFSENS>+3 dB
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 3 dB	<REF$\hat{I}_{or}$> + 3 dB	<REF$\hat{I}_{or}$> + 3 dB
$I_{blocking}$ (CW)	dBm	-44	-30	-15
F_{uw} (Band I operation)	MHz	2050<f <2095 2185<f <2230	2025 <f <2050 2230 <f <2255	1< f <2025 2255<f<12750
F_{uw} (Band II operation)	MHz	1870<f <1915 2005<f <2050	1845 <f <1870 2050 <f <2075	1< f <1845 2075<f<12750
F_{uw} (Band III operation)	MHz	1745 <f <1790 1895<f <1940	1720 <f < 1745 1940<f < 1965	1< f <1720 1965<f<12750
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)		
Band I operation	For 2095<f<2110 MHz and 2170<f<2185 MHz, the appropriate in-band blocking or adjacent channel selectivity in subclause 7.5.1 and subclause 7.6.1 shall be applied.			
Band II operation	For 1915<f<1930 MHz and 1990<f<2005 MHz, the appropriate in-band blocking or adjacent channel selectivity in subclause 7.5.1 and subclause 7.6.1~~2~~ shall be applied			
Band III operation	For 1790<f<1805 MHz and 1880<f<1895 MHz, the appropriate in-band blocking or adjacent channel selectivity in subclause 7.5.1 and subclause 7.6.1~~2~~ shall be applied.			

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030901**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.102** **CR** **142** ⌘ **rev** ⌘ Current version: **5.5.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Transmitter and Receiver Spurious Emissions
Source:	⌘	RAN WG4
Work item code:	⌘	TEI6
Date:	⌘	26/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Protection of parts of the GSM bands is missing for the Transmitter and Receiver spurious emission requirements.
Summary of change:	⌘	R-GSM band is included, requirements are taken from TS 45.005.
Consequences if not approved:	⌘	No protection of R-GSM extension 921-925MHz.

Clauses affected:	⌘	6.6.3			
Other specs affected:	⌘	Y / N		⌘	
			N: X — Other core specifications		
		X	Test specifications		34.122
			N: X — O&M Specifications		
Other comments:	⌘				

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.6.3 Spurious emissions

Spurious emissions are emissions which are caused by unwanted transmitter effects such as harmonics emission, parasitic emission, intermodulation products and frequency conversion products, but exclude out of band emissions.
The frequency boundary and the detailed transitions of the limits between the requirement for out band emissions and spectrum emissions are based on ITU-R Recommendations SM.329-9.

6.6.3.1 Minimum Requirement

6.6.3.1.1 3.84 Mcps TDD Option

These requirements are only applicable for frequencies which are greater than 12.5 MHz away from the UE center carrier frequency.

Table 6.7A: General Spurious emissions requirements (3.84 Mcps TDD Option)

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
9 kHz ≤ f < 150 kHz	1 kHz	-36 dBm
150 kHz ≤ f < 30 MHz	10 kHz	-36 dBm
30 MHz ≤ f < 1000 MHz	100 kHz	-36 dBm
1 GHz ≤ f < 12.75 GHz	1 MHz	-30 dBm

Table 6.7B: Additional Spurious emissions requirements (3.84 Mcps TDD Option)

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
921 MHz ≤ f < 925 MHz	100 kHz	-60 dBm *
925 MHz ≤ f ≤ 935 MHz	100 ~~KHz~~kHz	-67 dBm*
935 MHz < f ≤ 960 MHz	100 ~~KHz~~kHz	-79 dBm*
1805 MHz ≤ f ≤ 1880 MHz	100 ~~KHz~~kHz	-71 dBm*
* The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in Table 6.7A are permitted for each UARFCN used in the measurement.		

6.6.3.1.2 1.28 Mcps TDD Option

These requirements are only applicable for frequencies which are greater than 4 MHz away from the UE center carrier frequency.

Table 6.7C: General Spurious emissions requirements (1.28 Mcps TDD Option)

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
9 kHz ≤ f < 150 kHz	1 kHz	-36 dBm
150 kHz ≤ f < 30 MHz	10 kHz	-36 dBm
30 MHz ≤ f < 1000 MHz	100 kHz	-36 dBm
1 GHz ≤ f < 12.75 GHz	1 MHz	-30 dBm

Table 6.7D : Additional Spurious emissions requirements (1.28 Mcps TDD Option)

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
921 MHz ≤ f < 925 MHz	100 kHz	-60 dBm *
925 MHz ≤ f ≤ 935 MHz	100 ~~KHz~~kHz	-67 dBm*
935 MHz < f ≤ 960 MHz	100 ~~KHz~~kHz	-79 dBm*
1805 MHz ≤ f ≤ 1880 MHz	100 ~~KHz~~kHz	-71 dBm*
*	The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in Table 6.7C are permitted for each UARFCN used in the measurement.	

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-031110**

San Diego, USA 17 - 21 November 2003

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CHANGE REQUEST

⌘ **25.104** **CR** **211** ⌘ **rev** ⌘ Current version: **6.3.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	introduction of DCH performance for BS without Rx diversity
Source:	⌘	RAN WG4
Work item code:	⌘	TEI6
Date:	⌘	26/11/2003
Category:	⌘	**B**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
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D *(editorial modification)*
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R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change: ⌘

The UTRA-FDD BS performance requirements without Rx diversity are not specified in the actual specifications TS25.104.

In practice, some of the wide area BS can be deployed with only one antenna (single polarisation) configuration due to site constraint, the Rx diversity configuration is also often absent for indoor coverage designed with a wide area BS.

For outdoor micro cells with medium range BS and indoor pico cells with local area BS, the Rx diversity configuration can also be impossible for some cases.

Therefore it is needed to specify the BS performance requirements without Rx diversity.

In this Cr only DCH case is addressed, the RACH/CPCH and the birth/death cases are to be completed with further simulations , as only results from one company are currently available.

Isolated Impact :

This is an addition of performances for BS without RX diversity

Summary of change: ⌘

A new colon is added for Static, Case 1 Case 2 , Case 3 and Case 4 in the relevant tables.

Those figures come from simulations results provided by RAN4 and gathered in the T Doc R4-030914.

For the Case 4, the same assumption as for the performances of UE and BS with diversity was used. This was an extrapolation from Case 3 + 3 dB. See R4-010420 and R4-030914. The same assumption was used here. For the others cases, simulations results are used.

Consequences if not approved:	⌘	There will not be any performance requirements for Base Station not equipped with a dual receiver antenna.

Clauses affected:	⌘	8			
Other specs affected:	⌘	**Y** / **N** ☐ / **X**	Other core specifications	⌘	25.141
		X / ☐	Test specifications		
		☐ / **X**	O&M Specifications		
Other comments:	⌘				

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8 Performance requirement

8.1 General

Performance requirements for the BS are specified for the measurement channels defined in Annex A and the propagation conditions in Annex B. The requirements only apply to those measurement channels that are supported by the base station.

~~The requirements only apply to a base station with dual receiver antenna diversity. The required E_b/N_0 shall be applied separately at each antenna port.~~

The BS performance requirements without UL Rx diversity should be applied only to BS which has not the dual receiver antenna diversity.

For BS with dual receiver antenna diversity, the required E_b/N_0 shall be applied separately at each antenna port.

The Eb/No used in this section is defined as:

$$E_b / N_o = \frac{E_c}{N_o} \cdot \frac{L_{chip}}{L_{\inf}}$$

Where:

E_c is the received total energy of DPDCH and DPCCH per PN chip per antenna from all paths.

N_o is the total one-sided noise power spectral density due to all noise sources

L_{chip} is the number of chips per frame

$L_{\inf}$ is the number of information bits in DTCH excluding CRC bits per frame

Table 8.1: Summary of Base Station performance targets

Physical channel	Measurement channel	Static	Multi-path Case 1	Multi-path Case 2	Multi-path Case 3	Moving	Birth / Death
		Performance metric					
DCH	12.2 kbps	BLER<10^{-2}	BLER<10^{-2}	BLER<10^{-2}	BLER<10^{-2}	BLER<	BLER<
	64 kbps	BLER< 10^{-1},10^{-2}	BLER< 10^{-1}, 10^{-2}	BLER< 10^{-1},10^{-2}	BLER< 10^{-1}, 10^{-2},10^{-3}	BLER<	BLER<
	144 kbps	BLER< 10^{-1},10^{-2}	BLER< 10^{-1},10^{-2}	BLER< 10^{-1},10^{-2}	BLER< 10^{-1}, 10^{-2},10^{-3}	-	-
	384 kbps	BLER< 10^{-1},10^{-2}	BLER< 10^{-1},10^{-2}	BLER< 10^{-1},10^{-2}	BLER< 10^{-1}, 10^{-2},10^{-3}	-	-

8.2 Demodulation in static propagation conditions

8.2.1 Demodulation of DCH

The performance requirement of DCH in static propagation conditions is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.2.1.1 Minimum requirement

The BLER should not exceed the limit for the E_b/N_0 specified in Table 8.2.

Table 8.2: Performance requirements in AWGN channel

Measurement channel	Received E_b/N_0 For BS with Rx diversity	Received E_b/N_0 For BS without Rx diversity	Required BLER
12.2 kbps	n.a.	n.a.	$< 10^{-1}$
	5,1 dB	8,3 dB	$< 10^{-2}$
64 kbps	1,5 dB	4,7 dB	$< 10^{-1}$
	1,7 dB	4,8 dB	$< 10^{-2}$
144 kbps	0,8 dB	3,8 dB	$< 10^{-1}$
	0,9 dB	4 dB	$< 10^{-2}$
384 kbps	0,9 dB	4 dB	$< 10^{-1}$
	1,0 dB	4,1 dB	$< 10^{-2}$

8.3 Demodulation of DCH in multipath fading conditions

8.3.1 Multipath fading Case 1

The performance requirement of DCH in multipath fading Case 1 is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.1.1 Minimum requirement

The BLER should not exceed the limit for the E_b/N_0 specified in Table 8.3.

Table 8.3: Performance requirements in multipath Case 1 channel

Measurement channel	Received E_b/N_0 For BS with Rx diversity	Received E_b/N_0 For BS without Rx diversity	Required BLER
12.2 kbps	n.a.	14 dB	$< 10^{-1}$
	11,9 dB	19,1 dB	$< 10^{-2}$
64 kbps	6,2 dB	11,6 dB	$< 10^{-1}$
	9,2 dB	15,9 dB	$< 10^{-2}$
144 kbps	5,4 dB	10,8 dB	$< 10^{-1}$
	8,4 dB	15 dB	$< 10^{-2}$
384 kbps	5,8 dB	11,2 dB	$< 10^{-1}$
	8,8 dB	15,5 dB	$< 10^{-2}$

8.3.2 Multipath fading Case 2

The performance requirement of DCH in multipath fading Case 2 is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.2.1 Minimum requirement

The BLER should not exceed the limit for the E_b/N_0 specified in Table 8.4.

Table 8.4: Performance requirements in multipath Case 2 channel

Measurement channel	Received E_b/N_0 For BS with Rx Diversity	Received E_b/N_0 For BS without Rx Diversity	Required BLER
12.2 kbps	n.a.	11 dB	$< 10^{-1}$
	9.0 dB	15 dB	$< 10^{-2}$
64 kbps	4.3 dB	9,2 dB	$< 10^{-1}$
	6.4 dB	12, 3 dB	$< 10^{-2}$
144 kbps	3.7 dB	8,2 dB	$< 10^{-1}$
	5.6 dB	11,5 dB	$< 10^{-2}$
384 kbps	4.1 dB	8,7 dB	$< 10^{-1}$
	6.1 dB	12,1 dB	$< 10^{-2}$

8.3.3 Multipath fading Case 3

The performance requirement of DCH in multipath fading Case 3 is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.3.1 Minimum requirement

The BLER should not exceed the limit for the E_b/N_0 specified in Table 8.5.

Table 8.5: Performance requirements in multipath Case 3 channel

Measurement channel	Received E_b/N_0 For BS with Rx Diversity	Received E_b/N_0 For BS without Rx Diversity	Required BLER
12.2 kbps	n.a.	9,1 dB	$< 10^{-1}$
	7.2 dB	10,8 dB	$< 10^{-2}$
	8.0 dB	11,7 dB	$< 10^{-3}$
64 kbps	3.4 dB	7,1 dB	$< 10^{-1}$
	3.8 dB	7,7 dB	$< 10^{-2}$
	4.1 dB	8,5 dB	$< 10^{-3}$
144 kbps	2.8 dB	6 dB	$< 10^{-1}$
	3.2 dB	6,7 dB	$< 10^{-2}$
	3.6 dB	7,2 dB	$< 10^{-3}$
384 kbps	3.2 dB	6,5 dB	$< 10^{-1}$
	3.6 dB	7,2 dB	$< 10^{-2}$
	4.2 dB	7,9 dB	$< 10^{-3}$

8.3.4 Multipath fading Case 4

The performance requirement of DCH in multipath fading Case 4 in case of a Wide Area BS is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.4.1 Minimum requirement

The BLER should not exceed the limit for the E_b/N_0 specified in Table 8.5A.

Table 8.5A: Performance requirements in multipath Case 4 channel

Measurement channel	Received E_b/N_0 For BS with Rx Diversity	Received E_b/N_0 For BS without Rx Diversity	Required BLER
12.2 kbps	n.a.	12,1 dB	$< 10^{-1}$
	10,2 dB	13,8 dB	< 10-2
	11,0 dB	14,7 dB	< 10-3
64 kbps	6,4 dB	10,1 dB	< 10-1
	6,8 dB	10,7 dB	< 10-2
	7,1 dB	11,5 dB	< 10-3
144 kbps	5,8 dB	9 dB	< 10-1
	6,2 dB	9,7 dB	< 10-2
	6,6 dB	10,2 dB	< 10-3
384 kbps	6,2 dB	9,5 dB	< 10-1
	6,6 dB	10,2 dB	< 10-2
	7,2 dB	10,9 dB	< 10-3

8.4 Demodulation of DCH in moving propagation conditions

The performance requirement of DCH in moving propagation conditions is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified Eb/N0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.4.1 Minimum requirement

The BLER should not exceed the limit for the E_b/N_0 specified in Table 8.6.

Table 8.6: Performance requirements in moving channel

Measurement channel	Received E_b/N_0 For BS with Rx Diversity	Received E_b/N_0 For BS without Rx Diversity	Required BLER
12.2 kbps	n.a.	n.a.	$< 10^{-1}$
	5,7 dB	8,7 dB	$< 10^{-2}$
64 kbps	2,1 dB	5,3 dB	$< 10^{-1}$
	2,2 dB	5,5 dB	$< 10^{-2}$

8.5 Demodulation of DCH in birth/death propagation conditions

The performance requirement of DCH in birth/death propagation conditions is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030897**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.123** **CR** **329** ⌘ **rev** ⌘ Current version: **5.6.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Interference measurement in UpPTS for 1.28Mcps TDD
Source:	⌘	RAN WG4
Work item code:	⌘	TEI6
Date:	⌘	26/11/2003
Category:	⌘	**B**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
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Detailed explanations of the above categories can be found in 3GPP TR 21.900.

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2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The currently defined timeslot ISCP measurement does not include the UpPTS (since the UpPTS does not contain data bursts with midambles), hence there exists no means for the RNC to relate the broadcast target UpPCH receive power to the interference level in the UpPTS. This addition of a UpPTS interference measurement corrects the situation
Summary of change:	⌘	An additional UpPTS interference measurement accuracy and reporting range, applicable in 1.28Mcps TDD only, has been added.
Consequences if not approved:	⌘	There will be no means for the RNC to relate the broadcast target UpPCH receive power level to the amount of interference in the UpPTS.

Clauses affected:	⌘	9.2.1.15 (new)			
Other specs affected:	⌘	**Y** / **N**	Other core specifications	⌘	25.433, 25.302, 25.331,25.423
		X /	Test specifications		
		/ X	O&M Specifications		
Other comments:	⌘	re-submission of R4-030413			

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9.2.1.13 AOA measurement for UE positioning for 1.28Mcps TDD option

AOA defines the angle of arrival of the signals from a user at the antenna. The reference direction for this measurement shall be the North. The measurement period shall be 200ms.

9.2.1.13.1 Accuracy requirements

Eight accuracy classes are defined for UTRAN AOA measurement, i.e. accuracy class A to H.

Table 9.44M

Parameter	Unit	Accuracy [degree]	Conditions
UTRAN AOA measurement for UE positioning	degree	Accuracy Class A: +/- 180 degree Accuracy Class B: +/- 90 degree Accuracy Class C: +/- 60 degree Accuracy Class D: +/- 20 degree Accuracy Class E: +/- 10 degree Accuracy Class F: +/- 5 degree Accuracy Class G: +/- 2 degree Accuracy Class H: +/- 1 degree	Over the full range

9.2.1.13.2 Range/mapping

The reporting range for AOA measurement is from 0 ... 360 degree.

The mapping of the measured quantity is defined in table 9.44N.

Table 9.44N

Reported value	Measured quantity value	Unit
AOA_ANGLE _000	0 ≤ AOA_ANGLE < 0,5	degree
AOA_ANGLE _001	0,5 ≤ AOA_ANGLE < 1	degree
AOA_ANGLE _002	1 ≤ AOA_ANGLE < 1,5	degree
…	…	…
AOA_ANGLE _717	358,5 ≤ AOA_ANGLE < 359	degree
AOA_ANGLE _718	359 ≤ AOA_ANGLE < 359,5	degree
AOA_ANGLE _719	359,5 ≤ AOA_ANGLE < 360	degree

9.2.1.14 HS-SICH reception quality

The measurement period shall be 200 ms

9.2.1.14.1 Range/mapping

The *HS-SICH reception quality* reporting range is from 0…20 reception indications.

The mappings of the measured quantities are defined in tables 9.44O, 9.44P and 9.44Q.

Table 9.44O

Reported value	Measured quantity value	Unit
FAILED_HS_SICH_00	Failed HS-SICH receptions = 0	-
FAILED_HS_SICH_01	Failed HS-SICH receptions = 1	-
FAILED_HS_SICH_02	Failed HS-SICH receptions = 2	-
…	…	…
FAILED_HS_SICH_17	Failed HS-SICH receptions = 17	-
FAILED_HS_SICH_18	Failed HS-SICH receptions = 18	-
FAILED_HS_SICH_19	Failed HS-SICH receptions = 19	-
FAILED_HS_SICH_20	Failed HS-SICH receptions = 20	-

Table 9.44P

Reported value	Measured quantity value	Unit
MISSED_HS_SICH_00	Missed HS-SICH receptions = 0	-
MISSED_HS_SICH_01	Missed HS-SICH receptions = 1	-
MISSED_HS_SICH_02	Missed HS-SICH receptions = 2	-
…	…	…
MISSED_HS_SICH_17	Missed HS-SICH receptions = 17	-
MISSED_HS_SICH_18	Missed HS-SICH receptions = 18	-
MISSED_HS_SICH_19	Missed HS-SICH receptions = 19	-
MISSED_HS_SICH_20	Missed HS-SICH receptions = 20	-

Table 9.44Q

Reported value	Measured quantity value	Unit
TOTAL_HS_SICH_00	Expected HS-SICH transmissions = 0	-
TOTAL_HS_SICH_01	Expected HS-SICH transmissions = 1	-
TOTAL_HS_SICH_02	Expected HS-SICH transmissions = 2	-
…	…	…
TOTAL_HS_SICH_17	Expected HS-SICH transmissions = 17	-
TOTAL_HS_SICH_18	Expected HS-SICH transmissions = 18	-
TOTAL_HS_SICH_19	Expected HS-SICH transmissions = 19	-
TOTAL_HS_SICH_20	Expected HS-SICH transmissions = 20	-

9.2.1.~~14~~15 UpPTS interference (1.28Mcps TDD)

The measurement period shall be 100 ms.

9.2.1.~~14~~15.1 Absolute accuracy requirements

Table 9.44O: UpPTS interference Intra frequency absolute accuracy for Wide Area BS

Parameter	Unit	Accuracy [dB]		Conditions
		Normal conditions	Extreme conditions	Io [dBm/1.28 MHz]
UpPTS interference	dB	± 6	± 9	-105..-74

Table 9.44P: UpPTS interference Intra frequency absolute accuracy for Local Area BS

Parameter	Unit	Accuracy [dB]		Conditions
		Normal conditions	Extreme conditions	Io [dBm/1.28 MHz]
UpPTS interference	dB	± 6	± 9	-91..-60

9.2.1.~~14~~15.2 Range/mapping

The reporting range for UpPTS interference is from -120...-57 dBm.

In table 9.44Q mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9.44Q

Reported value	Measured quantity value	Unit
UTRAN_UPPTS_LEV_00	UpPTS interference < –120,0	dBm
UTRAN_UPPTS_LEV_01	-120,0 ≤ UpPTS interference < –119,5	dBm
UTRAN_UPPTS_LEV_02	-119,5 ≤ UpPTS interference < –119,0	dBm
…	…	…
UTRAN_UPPTS_LEV_125	-58,0 ≤ UpPTS interference < -57,5	dBm
UTRAN_UPPTS_LEV_126	-57,5 ≤ UpPTS interference < -57,0	dBm
UTRAN_UPPTS_LEV_127	-57,0 ≤ UpPTS interference	dBm

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030969**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.133** **CR** **626** ⌘ **rev** ⌘ Current version: **6.3.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	FDD inter frequency fading test case
Source:	⌘	RAN WG4
Work item code:	⌘	TEI6
Date:	⌘	26/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

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R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The current inter frequency fading test case (A.8.2.2) in TS 25.133 uses compressed mode patterns, which give very large measurement reporting delay (36 s).
Summary of change:	⌘	A new inter frequency test case on correct reporting of neighbours in fading propagation conditions (case 5). The proposed test case is similar to the existing inter frequency test case in fading (A.8.2.2) except the new test case utilizes faster patterns providing realistic measurement reporting delay (5 sec.). The compressed mode patterns used in the new test are: TGL1=14 slots and TGPL1=4 frames.
Consequences if not approved:	⌘	i. The UE will not be tested for reporting measurements with realistic delay (5 sec.). As a consequence the inter frequency handover may not be used for mobility purpose. ii. The test specification will be limited to test compressed mode patterns with TGL1=7.

Clauses affected:	⌘	A.8.2

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	TS 34.121
	X		Test specifications	
		X	O&M Specifications	

Other comments: ⌘	

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A.8.2.2 Correct reporting of neighbours in Fading propagation condition

A.8.2.2.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.1.2.2.The test parameters are given in Table A.8.11 and A.8.12. In the measurement control information it is indicated to the UE that event-triggered reporting 2C shall be used. The test consists of two successive time periods, each with a time duration of T1 and T2 respectively.

Table A.8.11: General test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Compressed mode		A.22 set 2 (TGPL1=12)	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Absolute Threshold (Ec/N0) for Event 2c	dB	-18	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24 8 on frequency Channel 2	Measurement control information is sent before the compressed mode pattern starts.
Propagation Condition		Case 5	As specified in Annex B of TS 25.101.
Frequency offset	ppm	+/- 0.1	Frequency offset between Cell 1 and Cell 2.
T1	s	2	
T2	s	40	

Table A.8.12: Test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	Note 1		N/A	
OCNS		Note 2		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	0		-Infinity	-1.8
I_{oc}	dBm/3.84 MHz	-70		-70	
CPICH_Ec/Io	dB	-13		-Infinity	-14
Propagation Condition	Case 5 as specified in Annex B of TS25.101				
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.					

A.8.2.2.2 Test Requirements

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 36 seconds from the beginning of time period T2.

b) The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.

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

A.8.2.x Correct reporting of neighbours in fading propagation condition using TGL1=14

A.8.2.x.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.1.2.3. The test parameters are given in Table A.8.xy and A.8.xz. In the measurement control information it is indicated to the UE that event-triggered reporting 2C shall be used. The test consists of two successive time periods, each with time duration of T1 and T2 respectively.

Table A.8.xy: General test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Compressed mode		A.22 set 4	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Absolute Threshold (Ec/N0) for Event 2c	dB	-18	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24 8 on frequency Channel 2	Measurement control information is sent before the compressed mode pattern starts.
Propagation Condition		Case 5	As specified in Annex B of TS 25.101.
Frequency offset	ppm	+/- 0.1	Frequency offset between Cell 1 and Cell 2.
T1	s	2	
T2	s	6	

Table A.8.xz: Test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	Note 1		N/A	
OCNS		Note 2		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	0		-Infinity	-1.8
I_{oc}	dBm/3.84 MHz	-70		-70	
CPICH_Ec/Io	dB	-13		-Infinity	-14
Propagation Condition	Case 5 as specified in Annex B of TS25.101				
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.					

A.8.2.x.2 Test Requirements

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 5 seconds from the beginning of time period T2.

b) The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.

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

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030971**

San Diego, USA 17 - 21 November 2003

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CHANGE REQUEST

⌘ **25.133** **CR** **627** ⌘ **rev** ⌘ Current version: **6.3.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to CPICH RSCP measurement report mapping
Source:	⌘	RAN WG4
Work item code:	⌘	TEI6
Date:	⌘	26/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
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R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	There is an editorial error in stating the measurement reporting range of CPICH RSCP
Summary of change:	⌘	Change the CPICH RSCP reporting range from 115 to -25 dBm to -115 to - 25 dBm
Consequences if not approved:	⌘	There will be an error left in the specification.

Clauses affected:	⌘	9.1.1.3			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
		X		Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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9.1.1.2 Inter frequency measurement accuracy

The measurement period for CELL_DCH state can be found in sub clause 8.1.2.3. The measurement period for CELL_FACH state can be found in sub clause 8.4.2.3.

9.1.1.2.1 Relative accuracy requirement

The relative accuracy of CPICH RSCP in inter frequency case is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on a different frequency.

The accuracy requirements in table 9.3 are valid under the following conditions:

CPICH_RSCP1,2$|_{dBm}$ ≥ -114 dBm.

$$\left| CPICH\_RSCP1\big|_{in\ dBm} - CPICH\_RSCP2\big|_{in\ dBm} \right| \le 20dB$$

| Channel 1_Io$|_{dBm/3.84\ MHz}$ -Channel 2_Io$|_{dBm/3.84\ MHz}$ | ≤ 20 dB.

$$\left(\frac{I_o}{\hat{I}_{or}} \right)\Bigg|_{in\ dB} - \left(\frac{CPICH\_E_c}{I_{or}} \right)\Bigg|_{in\ dB} \le 20dB$$

Table 9.3: CPICH_RSCP Inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	± 6	± 6	-94...-50

9.1.1.3 CPICH RSCP measurement report mapping

The reporting range is for *CPICH RSCP* is from -115~~115~~...-25 dBm.

In table 9.4 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.4

Reported value	Measured quantity value	Unit
CPICH_RSCP_LEV _00	CPICH RSCP <-115	dBm
CPICH_RSCP_LEV _01	-115 ≤ CPICH RSCP < -114	dBm
CPICH_RSCP_LEV _02	-114 ≤ CPICH RSCP < -113	dBm
…	…	…
CPICH_RSCP_LEV _89	-27 ≤ CPICH RSCP < -26	dBm
CPICH_RSCP_LEV _90	-26 ≤ CPICH RSCP < -25	dBm
CPICH_RSCP_LEV _91	-25 ≤ CPICH RSCP	dBm

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030972**

San Diego, USA 17 - 21 November 2003

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CHANGE REQUEST

⌘ **25.133** **CR** **628** ⌘ **rev** ⌘ Current version: **6.3.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to correct reporting of neighbours in AWGN propagation condition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI6
Date:	⌘	26/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

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R98	*(Release 1998)*
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Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	There is an incorrect reference to the requirements, which are to be verified in the test. The purpose of the test is to verify FDD inter frequency measurement requirements, which are only specified in section 8.1.2.3. The test triggers event 2C, which according to TS 25.331 occurs when CPICH quality on a non-used frequency (inter frequency) is estimated to be higher than a certain threshold.
Summary of change:	⌘	In the test purpose and environment it should be stated that the test will partly verify the requirements in section 8.1.2.3.
Consequences if not approved:	⌘	There is a risk that inappropriate requirements will be tested.

Clauses affected:	⌘	A.8.2.1			
Other specs affected:	⌘	Y / N	Other core specifications	⌘	TS 34.121
		N / X	Other core specifications		
		X /	Test specifications		
		/ X	O&M Specifications		
Other comments:	⌘				

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A.8.2 FDD inter frequency measurements

A.8.2.1 Correct reporting of neighbours in AWGN propagation condition

A.8.2.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in ~~section 8.1.2.2 and~~ section 8.1.2.3.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.8.9 and A.8.10 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

Table A.8.9: General test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Compressed mode		A.22 set 1	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Threshold non used frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range	dB	4	Applicable for event 1A
Hysteresis	dB	0	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	Measurement control information is sent before the compressed mode pattern starts.
T1	s	10	
T2	s	5	

Table A.8.10: Cell Specific parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-17		N/A		N/A	
OCNS		-1.049		–0.941		–0.941	
$\hat{I}_{or}/I_{oc}$	dB	0	5.42	- Infinity	3.92	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/Io	dB	-13	-13	- Infinity	-14.5	-14	-14
Propagation Condition	AWGN						

A.8.2.1.2 Test Requirements

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 9 seconds from the beginning of time period T1.

b) The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 956.2ms from the beginning of time period T2.The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.

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

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030973**

San Diego, USA 17 - 21 November 2003

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CHANGE REQUEST

⌘ **25.133** **CR** **629** ⌘ **rev** ⌘ Current version: **6.3.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to correct reporting of neighbours in fading propagation condition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI6
Date:	⌘	26/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

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R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	There is an incorrect reference to the requirements, which are to be verified in the test. The purpose of the test is to verify FDD inter frequency measurement requirements, which are only specified in section 8.1.2.3. The test triggers event 2C, which according to TS 25.331 occurs when CPICH quality on a non-used frequency (inter frequency) is estimated to be higher than a certain threshold.
Summary of change:	⌘	In the test purpose and environment it should be stated that the test will partly verify the requirements in section 8.1.2.3.
Consequences if not approved:	⌘	There is a risk that inappropriate requirements will be tested.

Clauses affected:	⌘	A.8.2.2			
Other specs affected:	⌘	Y / N ☐ / ☒	Other core specifications	⌘	TS 34.121
		☒ / ☐	Test specifications		
		☐ / ☒	O&M Specifications		
Other comments:	⌘				

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

A.8.2 FDD inter frequency measurements

A.8.2.2 Correct reporting of neighbours in Fading propagation condition

A.8.2.2.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section ~~8.1.2.2~~ 8.1.2.3.The test parameters are given in Table A.8.11 and A.8.12. In the measurement control information it is indicated to the UE that event-triggered reporting 2C shall be used. The test consists of two successive time periods, each with a time duration of T1 and T2 respectively

Table A.8.11: General test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Compressed mode		A.22 set 2 (TGPL1=12)	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Absolute Threshold (Ec/N0) for Event 2c	dB	-18	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24 8 on frequency Channel 2	Measurement control information is sent before the compressed mode pattern starts.
Propagation Condition		Case 5	As specified in Annex B of TS 25.101.
Frequency offset	ppm	+/- 0.1	Frequency offset between Cell 1 and Cell 2.
T1	s	2	
T2	s	40	

Table A.8.12: Test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	Note 1		N/A	
OCNS		Note 2		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	0		- Infinity	-1.8
I_{oc}	dBm/3.84 MHz	-70		-70	
CPICH_Ec/Io	dB	-13		- Infinity	-14
Propagation Condition	Case 5 as specified in Annex B of TS25.101				
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.					

A.8.2.2.2 Test Requirements

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 36 seconds from the beginning of time period T2.

b) The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.

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

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-031014**

San Diego, USA 17 - 21 November 2003

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CHANGE REQUEST

⌘ **25.133** **CR** 636 ⌘**rev** ⌘ Current version: **5.8.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Test time reduction for RRM Delay Tests
Source:	⌘	RAN WG4
Work item code:	⌘	TEI6
Date:	⌘	26/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

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B *(addition of feature),*
C *(functional modification of feature)*
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2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Time periods T are considerably longer than needed for the test.
Summary of change:	⌘	Time periods T are shortened to a meaningful duration.
Consequences if not approved:	⌘	Excessive test time Isolated Impact Analysis: Does not affect UE implementation

Clauses affected:	⌘	A.5.2.1, A.5.2.2, A.5.3.1.1, A.5.3.1.2, A.5.4, A.6.4			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
		X		Test specifications	34.121
			X	O&M Specifications	
Other comments:	⌘	Test time reduction was started in meeting #28 with CR608. This CR contains test time reduction for other tests using the same justification (R4-030747).			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can

be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change reques

A.5.2 FDD/FDD Hard Handover

A.5.2.1 Handover to intra-frequency cell

A.5.2.1.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the hard handover delay in CELL_DCH state in the single carrier case reported in section 5.2.2.1.

The test parameters are given in Table A.5.0 and A.5.0A below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed timed difference shall be reported together with Event 1A. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time "now" with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

Table A.5.0: General test parameters for Handover to intra-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and A.2.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	5	
T3		s	15	

Table A.5.0A: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	Note1	Note1	Note3	N/A	N/A	Note1
OCNS		Note2	Note2	Note2	-0.941	-0.941	Note2
$\hat{I}_{or}/I_{oc}$	dB	0	6.97		-Infinity	5.97	
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io	dB	-13			-Infinity	-14	
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}. Note 3: The DPCH may not be power controlled by the power control loop.							

A.5.2.1.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 110 ms from the beginning of time period T3.

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

A.5.2.2 Handover to inter-frequency cell

A.5.2.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the inter frequency hard handover delay in CELL_DCH state as specified in section 5.2.2.1.

The test consists of three successive time periods, with a time duration T1, T2 and T3. The test parameters are given in tables A.5.0B and A.5.0C below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

Table A.5.0B: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and A.2.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 1	As specified in TS 25.101 section A.5.
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold non used frequency		dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range		dB	4	Applicable for event 1A
Hysteresis		dB	0	
W			1	Applicable for event 1A
W non-used frequency			1	Applicable for event 2C
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	10	
T3		s	15	

Table A.5.0C: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1			Channel 2		
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	Note 1	Note 1	Note3	N/A	N/A	Note 1
OCNS		Note 2			-0.941	-0.941	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0			-Infinity	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io	dB	-13			-Infinity	-14	-14
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}. Note 3: The DPCH may not be power controlled by the power control loop.							

A.5.2.2.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 140 ms from the beginning of time period T3.

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

A.5.3 FDD/TDD Handover

A.5.3.1 Test purpose and Environment

A.5.3.1.1 3.84 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CA, A.5.0CB and A.5.0CC below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time "now" with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CA: General test parameters for FDD/TDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 2	TDD cell
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-75	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T_{SI}		s	1.28	The value shall be used for all cells in the test
T1		s	5	
T2		s	15	
T3		s	15	

Table A.5.0CB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1	
		T1, T2	T3
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
P-CCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
DPCH_Ec/Ior	dB	Note 1	n.a.
OCNS_Ec/Ior	dB	Note 2	
$\hat{I}_{or}/I_{oc}$	dB	0	
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-13	
Propagation Condition		AWGN	
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}			

Table A.5.0CC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2								
DL timeslot number		0			2			8		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 2								
P-CCPCH_Ec/Ior	dB	-3			n.a.			n.a.		
PICH_Ec/Ior	dB	n.a.			n.a.			-3		
SCH_Ec/Ior	dB	-9			n.a.			-9		
SCH_t_{offset}	dB	5			n.a.			5		
DPCH_Ec/Ior	dB	n.a.			n.a.		Note 1	n.a.		
OCNS_Ec/Ior	dB	-3.12			0		Note 2	-3.12		
$\hat{I}_{or}/I_{oc}$	dB	-Inf	6		-Inf	6		-Inf	6	
P-CCPCH RSCP	dBm	-Inf	-67		n.a.			n.a.		
I_{oc}	dBm/3,84 MHz	-70								
Propagation Condition		AWGN								
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior. Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.										

A.5.3.1.2 1.28 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CD, A.5.0CE and A.5.0CF below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

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

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CD: General test parameters for FDD/TDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 2	TDD cell
O		DB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		DB	0	Hysteresis parameter for event 2C
Time to Trigger		Ms	0	
Threshold non-used frequency		DBm	-75	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T_{SI}		S	1.28	The value shall be used for all cells in the test
T1		S	5	
T2		S	15	
T3		S	1~~5~~	

Table A.5.0CE: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1	
		T1, T2	T3
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
P-CCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
DPCH_Ec/Ior	dB	Note 1	n.a.
OCNS_Ec/Ior	dB	Note 2	
$\hat{I}_{or}/I_{oc}$	dB	0	
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-13	
Propagation Condition		AWGN	
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}			

Table A.5.0CF: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2					
DL timeslot number		**0**			**DwPTs**		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 2					
P-CCPCH_Ec/Ior	dB	-3					
DwPCH _Ec/Ior	dB				0		
DPCH_Ec/Ior	dB						Note 1
OCNS_Ec/Ior	dB	-3					Note 2
$\hat{I}_{or}/I_{oc}$	dB	-Inf	6		-Inf	6	
P-CCPCH RSCP	dBm	-Inf	-67				
I_{oc}		dBm/1.28 MHz	-70				
Propagation Condition			AWGN				

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

A.5.3.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 110 ms from the beginning of time period T3.

The rate of correct FDD/TDD handovers observed during repeated tests shall be at least 90%.

A.5.4 Inter-system Handover from UTRAN FDD to GSM

A.5.4.1 Test Purpose and Environment

This test is to verify the requirement for the UTRAN to GSM cell handover delay reported in section 5.4.2.1.

The test parameters are given in Table A.5.0D, A.5.0E and A.5.0F below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used.. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Handover from UTRAN command with activation time "now" with a new active cell, cell 2. In GSM Handover command contained in that message, IE starting time shall not be included. The RRC HANDOVER FROM UTRAN COMMAND message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

The requirements are also applicable for a UE not requiring compressed mode, in which case no compressed mode pattern should be sent for the parameters specified in table A5.0D

Table A.5.0D: General test parameters for Correct reporting of GSM neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI measurement - GSM Initial BSIC identification - GSM BSIC re-confirmation		 DL Compressed mode reference pattern 2 in Set 2 Pattern 2 Pattern 2	Only applicable for UE requiring compressed mode patterns As specified in table A.22 TS 25.101 section A.5 As specified in section 8.1.2.5.2.1 table 8.7. As specified in section 8.1.2.5.2.2 table 8.8.
Active cell		Cell 1	
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the compressed mode patterns starts.
N Identify abort		66	Taken from table 8.7.
T Reconfirm abort		5.5	Taken from table 8.8.
T1	s	20	
T2	s	5	
T3	s	1~~5~~	

Table A.5.0E: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)
		T1, T2, T3
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DCH_Ec/Ior	dB	Note 1
OCNS_Ec/Ior	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.		

Table A.5.0F: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2, T3
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-85	-75

A.5.4.2 Test Requirements

The UE shall begin to send access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3.

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

Next section, changed

A.6.4 Transport format combination selection in UE

A.6.4.1 Test Purpose and Environment

The purpose is to verify the UE blocks (stops using) a currently used TFC when the UE output power is not sufficient to support that TFC. This test will verify the general requirement on TFC selection in section 6.4.

A.6.4.1.1 Interactive or Background, PS, UL: 64 kbps

The test will verify the general requirement on TFC selection in section 6.4 for a RAB intended for packet data services, i.e. Interactive or Background, PS, UL: 64kbps as defined in TS 34.108.

The test parameters are given in Table A.6.8 , A.6.9 and Table A.6.10 below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

Details on the UL reference RAB in table A.6.8 and A.6.9 can be found in TS 34.108 section “Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH”.

Table A.6.8: UL reference RAB, Interactive or Background

	TFI	64 kbps RAB (20ms TTI)	DCCH 3.4kbps (40ms TTI)
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Table A.6.9: UL TFCI

TFCI	(64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF0, TF1)
UL_TFC2	(TF1, TF0)
UL_TFC3	(TF1, TF1)
UL_TFC4	(TF2, TF0)
UL_TFC5	(TF2, TF1)
UL_TFC6	(TF3, TF0)
UL_TFC7	(TF3, TF1)
UL_TFC8	(TF4, TF0)
UL_TFC9	(TF4, TF1)

Table A.6.10: General test parameters

Parameter	Unit	Value	Comment
TFCS size		10	
TFCS		UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC8, UL_TFC9	
Power Control		On	
Active cell		Cell 1	
Maximum allowed UL TX power	dBm	21	
T1	s	30	
T2	s	2~~10~~	
Propagation condition		AWGN	

The radio conditions in the test shall be sufficient, so that decoding of the TPC commands can be made without errors.

The amount of available user data shall be sufficient to allow uplink transmission at the highest bit rate (UL_TFC8 or UL_TFC9) during the entire test and it shall be ensured that the UE is using UL_TFC8 or UL_TFC9 at the end of T1.

The test shall be performed in the following way:

Before time period T1:

The allowed TFCS according to table A.6.10 shall be signalled to the UE.

During time period T1:

The system simulator shall ensure that the UE output power is commanded to be between 14 to 15 dB below the UE Maximum allowed UL TX power.

During time period T2:

The system simulator shall continously send TPC_cmd=1 to the UE from the beginning of T2 until the end of T2.

NOTE: This will emulate that UL_TFC8 to UL_TFC9 can not be supported beacuse the UE reaches the maximum UL Tx power and still UTRAN is sending power-up commands. The time from the beginning of T2 until the UE blocks (stops using) UL_TFC8 and UL_TFC9 shall be measured.

A.6.4.2 Test Requirements

A.6.4.2.1 Interactive or Background, PS, UL: 64 kbps

The UE shall have stopped using UL_TFC8 and UL_TFC9 within 140 ms from beginning of time period T2.

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

NOTE: The delay from the begining of T2 can be expressed as:

$$T_{ramp} + T_{detect\_block} + T_{notify} + T_{modify} + T_{L1\_proc} + T_{align\_TTI}$$

where:

T_{ramp} Margin added for the increase of UE output power to the UE maximum power. A margin of 1 frame (10ms) is used, i.e. 15 TPC commands.

T_{detect_block} The time needed to detect that UL_TFC8 and UL_TFC9 can no longer be supported, i.e. defines the maximum time to detect that the *Elimination* criterion is fulfilled for UL_TFC8 and UL_TFC9. According to X and Y values of 15 and 30 as defined in Section 6.4.2 and by assuming the maximum misalignment between the frame boundary, where the evaluation of the *Elimination* criterion is performed and the last slot needed for triggering the *Elimination* criterion on L1, T_{detect_block} becomes 15 slots +14 slots =19.33 ms.

T_{notify}	Equal to [15] ms, the time allowed for MAC to indicate to higher layers that UL_TFC8 and UL_TFC9 can no longer be supported.
T_{modify}	Equal to MAX(T_{adapt_max},T_{TTI}) = MAX(0, 40)=40ms
T_{adapt_max}	Equals to 0ms for the case without codec.
T_{L1_proc}	Equals 15ms.
T_{align_TTI}	Align with the longest uplink TTI where the new TFC can be selected. The worst case equals 40ms in this test case.
T_{TTI}	See section 6.4.2. Equals 40 ms in the test case.

This gives a maximum delay of (10 + 19.33 + [15] + 40 + 15 + 40) ms= 139.33 ms from the beginning of T2, allow 140 ms in the test case.