

**3GPP TSG RAN Meeting #26**  
**Vouliagmeni Athens, Greece, 8 - 10 December, 2004**

**RP-040412**

**Title** CRs (Rel-6) to TS25.101/ TS 25.105/ TS25.113/ TS25.133/ TS25.141 under TEI6  
**Source** 3GPP TSG RAN WG4 (Radio)  
**Agenda Item** 8.9

WG Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-040779	25.101	368	1	F	Rel-6	6.5.0	Correction to Windup testcase	TEI6
R4-040642	25.105	156		F	Rel-6	6.1.0	Addition of Co-existence with unsynchronized TDD item in regional requirement list	TEI6
R4-040590	25.113	023		F	Rel-6	6.0.0	Requirement for surge for outdoor telecommunication cable	TEI6
R4-040745	25.113	024	1	F	Rel-6	6.0.0	Transmitter and receiver exclusions bands for Bands IV, V and VI	TEI6
R4-040660	25.133	698		F	Rel-6	6.7.0	Clarification of Inter-RAT hand over test parameters.	TEI6
R4-040686	25.133	702		F	Rel-6	6.7.0	Correction to UE transmitted power measurement	TEI6
R4-040606	25.141	357		F	Rel-6	6.7.0	Correction to RACH message demodulation test	TEI6

## CHANGE REQUEST

⌘ 25.101 CR 368 ⌘ rev 1 ⌘ Current version: 6.5.0 ⌘

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

<b>Title:</b>	⌘ Correction to windup effects test case.		
<b>Source:</b>	⌘ 3GPP TSG RAN WG4 (Radio)		
<b>Work item code:</b>	⌘ TEI6	<b>Date:</b>	⌘ 01/12/2004
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)		Ph2 (GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)		R96 (Release 1996)
	<b>B</b> (addition of feature),		R97 (Release 1997)
	<b>C</b> (functional modification of feature)		R98 (Release 1998)
	<b>D</b> (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)
			Rel-7 (Release 7)

<b>Reason for change:</b>	⌘ - To ensure that the anti-windup functionality in the UE is tested irrespective of the UE receiver performance. ⌘ - To decrease the test time during stage 1 of the test.
<b>Summary of change:</b>	⌘ The purpose of the existing windup effects test case is to guarantee that the UE implements anti-windup algorithm. In the current test case windup situation is created by limiting the maximum downlink power during stage 2 of the test to a certain fix power level (-6.2 w.r.t. P-CPICH power setting or -16.2 dB w.r.t. the total cell power). The fixed power level used during the power limiting stage (stage 2) does not equally stress UEs with different receiver performance. E.g. a UE with good receiver performance, i.e. which requires lower average DPCH_Ec/Ior than assumed, the power limitation may not be sufficient to create the windup situation.  According to the proposed changes the maximum downlink power during stage 2 is set to a value, which is a function of the actual UE receiver performance. The actual UE receiver performance is taken into account by setting the maximum downlink power during stage 2 equal to the minimum (-6.2, average DPCH_Ec/Ior - 2 w.r.t P-CPICH) dB as defined in table 8.33. The average DPCH_Ec/Ior power ratio is measured during the initialisation stage of the test after the power control loop has converged. The quality target (BLER) on the DTCH for the outer loop is 1% as defined in table 8.33.  The test time during stage 1 of the test as specified in table 8.33 is decreased from >15 s to 5 s. In the actual test case (TS 34.121), the stages 1, 2 and 3 are repeated 328 times. Reduction of stage 1 time will significantly decrease the overall test time.

<b>Consequences if not approved:</b>	⌘	1. A UE with good receiver performance may pass the test without implementing an anti-windup algorithm. In real network operation during windup situations (e.g. deep shadow fade) a UE without any anti-windup functionality may require excess power from the network. This may lead to poor grade of service in the network (blocking and dropping of the calls).  2. The test time will be excessive.
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<b>Clauses affected:</b>	⌘	8.8.3								
<b>Other specs affected:</b>	⌘	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications      ⌘ Test specifications                      34.121 O&M Specifications	Y	N	X	X	X	X	X	X
Y	N									
X	X									
X	X									
X	X									
<b>Other comments:</b>	⌘									

**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.

### 8.8.3 Power control in downlink, wind up effects

#### 8.8.3.1 Minimum requirements

This test is run in three stages where stage 1 is for convergence of the power control loop, ~~in~~ in stage two the maximum downlink power for the dedicated channel is limited not to be higher than the ~~parameter value~~ specified in Table 8.33. All parameters used in the three stages are specified in Table 8.33. The downlink  $\frac{DPCH - E_c}{I_{or}}$  power ratio measured values, which are averaged over one slot, during stage 3 shall be lower than the value specified in Table 8.34 more than 90% of the time.

Power control of the UE is ON during the test.

**Table 8.33: Test parameter for downlink power control, wind-up effects**

Parameter	Unit	Test 1		
		Stage 1	Stage 2	Stage 3
Time in each stage	s	>15	5	0.5
$\hat{I}_{or}/I_{oc}$	dB	5		
$I_{oc}$	dBm/3.84 MHz	-60		
Information Data Rate	kbps	12.2		
Quality target on DTCH	BLER	0.01		
Propagation condition		Case 4		
Maximum_DL_Power	dB	7	$\min(-6.2, P)$ . Note 1	7
Minimum_DL_Power	dB	-18		
DL Power Control step size, $\Delta_{TPC}$	dB	1		
Limited Power Increase	-	"Not used"		
<p>Note 1: <math>P</math> is the level corresponding to the average <math>\frac{DPCH - E_c}{I_{or}}</math> power ratio - 2 dB compared to the <math>P</math>-CPICH level. The average <math>\frac{DPCH - E_c}{I_{or}}</math> power ratio is measured during the initialisation stage after the power control loop has converged before the actual test starts.</p>				

**Table 8.34: Requirements in downlink power control, wind-up effects**

Parameter	Unit	Test 1, stage 3
$\frac{DPCH - E_c}{I_{or}}$	dB	-13.3

# CHANGE REQUEST

⌘ **25.105 CR 156** ⌘ rev      ⌘ Current version: **6.1.0** ⌘

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

<b>Title:</b>	⌘ Addition of Co-existence with unsynchronized TDD item in regional requirement list		
<b>Source:</b>	⌘ 3GPP TSG RAN WG4 (Radio)		
<b>Work item code:</b>	⌘ TEI6	<b>Date:</b>	⌘ 01/12/2004
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> 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)

<b>Reason for change:</b>	⌘ The co-existence with unsynchronized TDD requirement may be applied for the protection of UTRA-TDD BS receivers when UTRA-TDD BS and UTRA TDD BS are unsynchronized co-located or they are unsynchronized deployed in same geographic areas. Co-existence with unsynchronized TDD item is also regional requirement same as Co-existence with GSM, DCS1800, UTRA FDD.
<b>Summary of change:</b>	⌘ Addition of Co-existence with unsynchronized TDD item in regional requirement list
<b>Consequences if not approved:</b>	⌘ Co-existence with unsynchronized TDD may be mandatory in all regions. <b>Isolated Impact Analysis:</b> The correction of the requirement will not affect Node-B implementation or Node-B/UE interworking

<b>Clauses affected:</b>	⌘ 4.3										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications Test specifications O&M Specifications	⌘ <span style="background-color: yellow;">    </span>
Y	N										
	X										
	X										
	X										
<b>Other comments:</b>	⌘ Corresponding changes to TS25.142 have already been incorporated by CR 161 to TS25.142										

## 4.3 Regional requirements

Some requirements in TS 25.105 may only apply in certain regions. Table 4.1 lists all requirements that may be applied differently in different regions.

**Table 4.1: List of regional requirements.**

Clause number	Requirement	Comments
5.2	Frequency bands	Some bands may be applied regionally.
6.2.1	Base station maximum output power	In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the range of conditions defined as normal.
6.6.2.1	Spectrum emission mask	The mask specified may be mandatory in certain regions. In other regions this mask may not be applied.
6.6.3.1.1	Spurious emissions (Category A)	These requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329 [1], are applied.
6.6.3.1.2	Spurious emissions (Category B)	These requirements shall be met in cases where Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329 [1], are applied.
6.6.3.2.1	Co-existence with GSM900 – Operation in the same geographic area	This requirement may be applied for the protection of GSM 900 MS and GSM 900 BTS in geographic areas in which both GSM 900 and UTRA are deployed.
6.6.3.2.2	Co-existence with GSM900 – Co-located base stations	This requirement may be applied for the protection of GSM 900 BTS receivers when GSM 900 BTS and UTRA BS are co-located.
6.6.3.3.1	Co-existence with DCS1800 – Operation in the same geographic area	This requirement may be applied for the protection of DCS 1800 MS and DCS 1800 BTS in geographic areas in which both DCS 1800 and UTRA are deployed.
6.6.3.3.2	Co-existence with DCS1800 – Co-located base stations	This requirement may be applied for the protection of DCS 1800 BTS receivers when DCS 1800 BTS and UTRA BS are co-located.
6.6.3.4.1	Co-existence with UTRA FDD – Operation in the same geographic area	This requirement may be applied to geographic areas in which both UTRA-TDD and UTRA-FDD are deployed.
6.6.3.4.2	Co-existence with UTRA FDD – Co-located base stations	This requirement may be applied for the protection of UTRA-FDD BS receivers when UTRA-TDD BS and UTRA FDD BS are co-located.
<a href="#">6.6.3.5.1</a>	<a href="#">Co-existence with unsynchronized TDD – Operation in the same geographic area</a>	<a href="#">This requirement may be applied for the protection of UTRA-TDD BS receivers in same geographic areas in which unsynchronized TDD is deployed.</a>
<a href="#">6.6.3.5.2</a>	<a href="#">Co-existence with unsynchronized TDD –Co-located base stations</a>	<a href="#">This requirement may be applied for the protection of UTRA-TDD BS receivers when UTRA-TDD BS are unsynchronized co-located.</a>
7.5	Blocking characteristic	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
7.5.1	Blocking characteristic Co-location with GSM900 and/or DCS 1800	This requirement may be applied for the protection of UTRA TDD BS receivers when UTRA TDD BS and GSM 900/DCS1800 BS are co-located.

## CHANGE REQUEST

⌘ **25.113 CR 023** ⌘ rev  ⌘ Current version: **6.0.0** ⌘

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

<b>Title:</b>	⌘ Requirement for surge for outdoor telecommunication cable		
<b>Source:</b>	⌘ 3GPP TSG RAN WG4 (Radio)		
<b>Work item code:</b>	⌘ TEI6	<b>Date:</b>	⌘ 01/12/2004
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: Ph2 (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) Rel-7 (Release 7)

<b>Reason for change:</b>	⌘ The requirement for surge for telecommunications ports connected via outdoor cables is missing.
<b>Summary of change:</b>	⌘ The requirement for surge for telecommunications ports connected via outdoor cables is added. Also, outdoor cable, indoor cable and AC power port requirements are separated. Requirements are according to IEC 61000-6-1.
<b>Consequences if not approved:</b>	⌘ The requirement for surge for outdoor telecommunication cable will be inadequate. (For more information see ITU-T K.45)

<b>Clauses affected:</b>	⌘ 3.3, 9.8										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="text-align: center; padding: 2px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center; padding: 2px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center; padding: 2px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘ <input type="text"/>
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Test specifications											
O&M Specifications											
<b>Other comments:</b>	⌘ <input type="text"/>										

### 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [24] and the following apply:

AC	Alternating Current
AMN	Artificial Mains Network
<u>CDN</u>	<u>Coupling/Decoupling Network</u>
DC	Direct Current
EMC	Electromagnetic Compatibility
ESD	Electrostatic discharge
EUT	Equipment Under Test
RF	Radio frequency
rms	root mean square
UTRA	Universal Terrestrial Radio Access



## 9.8.1 Definition

These tests assess the ability of radio equipment and ancillary equipment to operate as intended in the event of surges being present at the AC mains power input ports [and telecommunication ports](#).

## 9.8.2 Test method and level

The test method shall be in accordance with IEC 61000-4-5 [20].

[The requirements and evaluation of test results given in clause 9.8.2.1 \(telecommunication ports, outdoor cables\), clause 9.8.2.2 \(telecommunication ports, indoor cables\) and clause 9.8.2.3 \(AC power ports\) shall apply, but no test shall be required where normal functioning cannot be achieved, because of the impact of the CDN on the EUT.](#)

### [9.8.2.1 Test method for telecommunication ports directly connected to outdoor cables](#)

[The test level for telecommunications ports, intended to be directly connected to the telecommunications network via outdoor cables, shall be 1 kV line to ground as given in IEC 61000-4-5 \[20\], however, in telecommunications centres 0,5 kV line to ground shall be used. In this case the total output impedance of the surge generator shall be in accordance with the basic standard IEC 61000-4-5 \[20\].](#)

[The test generator shall provide the 1,2/50  \$\mu\$ s pulse as defined in IEC 61000-4-5 \[20\]](#)

### [9.8.2.2 Test method for telecommunication ports connected to indoor cables](#)

[The test level for telecommunication ports, intended to be connected to indoor cables \(longer than 10 m\) shall be 0,5 kV line to ground. In this case the total output impedance of the surge generator shall be in accordance with the basic standard IEC 61000-4-5 \[20\]](#)

[The test generator shall provide the 1,2/50  \$\mu\$ s pulse as defined in IEC 61000-4-5 \[20\].](#)

### [9.8.2.3 Test method for AC power ports](#)

[The test level for AC power input ports shall be 2 kV line to ground, and 1 kV line to line, with the output impedance of the surge generator as given in IEC 61000-4-5 \[20\].](#)

[In telecom centres 1 kV line to ground and 0,5 kV line to line shall be used.](#)

[The test generator shall provide the 1,2/50  \$\mu\$ s pulse as defined in IEC 61000-4-5 \[20\].](#)

~~The following requirements and evaluation of test results shall apply:~~

- ~~- the test levels for telecommunication ports, intended to be directly connected to a telecommunication network, shall be 0,5 kV line to ground as given in IEC 61000-4-5. In this case the total output impedance of the surge generator shall be in accordance with the basic standard IEC 61000-4-5 [20].~~
- ~~- the test level for ac mains power input ports shall be 1 kV line to earth and 0,5 kV line to line with the output impedance of the surge generator as given in the IEC 61000-4-5 [20];~~
- ~~— the test generator shall provide the 1,2/50 (8/20)  $\mu$ sec pulse as defined in IEC 61000-4-5 [20].~~

## CHANGE REQUEST

⌘ **25.113 CR 024** ⌘ rev **1** ⌘ Current version: **6.0.0** ⌘

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

<b>Title:</b>	⌘ Transmitter and receiver exclusions bands for Bands IV, V and VI		
<b>Source:</b>	⌘ 3GPP TSG RAN WG4 (Radio)		
<b>Work item code:</b>	⌘ TEI6	<b>Date:</b>	⌘ 01/12/2004
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: Ph2 (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) Rel-7 (Release 7)

<b>Reason for change:</b>	⌘ Receiver exclusion bands are missing for Bands IV, V and VI.
<b>Summary of change:</b>	⌘ Receiver exclusion bands are added for FDD Bands IV, V and VI. Exclusion band descriptions for both transmit and receive frequencies are clarified and new definitions are introduced. Some references are corrected as an editorial change.
<b>Consequences if not approved:</b>	⌘ There would be no receiver exclusion bands for Bands IV, V and VI.

<b>Clauses affected:</b>	⌘ 2, 3.1, 4.5						
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	
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<b>Other comments:</b>	⌘						

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## 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TS 25.104: "UTRA (BS) FDD; Radio transmission and reception".
- [2] 3GPP TS 25.105: "UTRA (BS) TDD; Radio transmission and reception".
- [3] 3GPP TS 25.141: "UTRA (BS) FDD; Base station conformance testing (FDD)".
- [4] 3GPP TS 25.142: "UTRA (BS) TDD; Base station conformance testing (TDD)".
- [5] IEC 61000-6-1: ~~1997~~1997; "Electromagnetic compatibility (EMC) – Part 6: Generic standards – Section 1: Immunity for residential, commercial and light-industrial environments".
- [6] IEC 61000-6-3: ~~1996~~1996; "Electromagnetic compatibility (EMC) – Part 6: Generic standards – Section 3: mission standard for residential, commercial and light industrial environments".
- [7] IEC 60050(161): "International Electrotechnical Vocabulary - Chapter 161: Electromagnetic compatibility".
- [8] 3GPP TS 25.101: "UTRA (UE) FDD; UE Radio transmission and reception (FDD)".
- [9] 3GPP TS 25.102: "UTRA (UE) TDD: UE Radio transmission and reception (TDD)".
- [10] 3GPP TS 25.106: "UTRA Repeater; Radio Transmission and Reception".
- [11] 3GPP TS 25.143: "UTRA Repeater conformance testing".
- [12] ITU-R Rec. SM.329: "Unwanted emissions in the spurious domain".
- [13] CISPR 22: "Limits and methods of measurement of radio disturbance characteristics of information technology equipment".
- [14] CISPR 16-1): "Specification for radio disturbance and immunity measuring apparatus and methods".
- [15] IEC 61000-3-2 (2001)9: "Electromagnetic compatibility (EMC) - Part 3: Limits – Section 2: Limits for harmonic current emissions (equipment input current  $\leq 16$  A)".
- [16] IEC 61000-3-3 (1995): "Electromagnetic compatibility (EMC) - Part 3: Limits – Section 3: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current  $\leq 16$  A".
- [17] IEC 61000-4-2: " Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test".
- [18] IEC 61000-4-3: " Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques – Section 3: Radiated, radio-frequency electromagnetic field immunity test".
- [19] IEC 61000-4-4: " Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test".

- [20] IEC 61000-4-5: " Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques – Section 5: Surge immunity test".
- [21] IEC 61000-4-6: " Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques – Section 6: Immunity to contacted disturbances, induced by radio frequency fields".
- [22] IEC 61000-4-11 : " Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques – Section 11: Voltage dips, short interruptions and voltage variations. Immunity tests".
- [23] ITU-R Recommendation SM.1539 (2001): "Variation of the boundary between the out-of-band and spurious domains required for the application of Recommendations ITU-R SM.1541 and ITU-R SM.329".
- [24] 3GPP TR 21.905: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Vocabulary for 3GPP Specifications".

## 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply.

**Ancillary equipment:** Equipment (apparatus), used in connection with a receiver, transmitter or transceiver is considered as an ancillary equipment (apparatus) if:

- the equipment is intended for use in conjunction with a receiver, transmitter or transceiver to provide additional operational and/or control features to the radio equipment, (e.g. to extend control to another position or location); and
- the equipment cannot be used on a stand alone basis to provide user functions independently of a receiver, transmitter or transceiver; and
- the receiver, transmitter or transceiver to which it is connected, is capable of providing some intended operation such as transmitting and/or receiving without the ancillary equipment (i.e. it is not a sub-unit of the main equipment essential to the main equipment basic functions).

**Base Station equipment:** Radio and/or ancillary equipment intended for operation at a fixed location and powered directly or indirectly (e.g. via an AC/DC converter or power supply) by AC mains network, or an extended local DC mains network.

**BLER:** BLER is block error ratio. The BLER calculation shall be based on evaluating the CRC on each transport block.

**Continuous phenomena (continuous disturbance):** Electromagnetic disturbance, the effects of which on a particular device or equipment cannot be resolved into a succession of distinct effects (IEC 60050-161 [7]).

**Radio communications equipment :** Telecommunications equipment which includes one or more transmitters and/or receivers and/or parts thereof for use in a fixed, mobile or portable application. It can be operated with ancillary equipment but if so, is not dependent on it for basic functionality.

**Port:** A particular interface, of the specified equipment (apparatus), with the electromagnetic environment. For example, any connection point on an equipment intended for connection of cables to or from that equipment is considered as a port (see figure 1).

**Receiver exclusion band:** [The receiver exclusion band is the band of frequencies over which no tests of radiated immunity of a receiver are made. The exclusion band for receivers is expressed relative to the base station receive band.](#)

**Repeater:** A device that receives, amplifies and transmits the radiated or conducted RF carrier both in the down-link direction (from the base station to the mobile area) and in the up-link direction (from the mobile to the base station).

**Signal and control :** Port which carries information or control signals, excluding antenna ports.

**Telecommunication port:** Ports which are intended to be connected to telecommunication networks (e.g. public switched telecommunication networks, integrated services digital networks), local area networks (e.g. Ethernet, Token Ring) and similar networks.

**Transient phenomena:** Pertaining to or designating a phenomena or a quantity which varies between two consecutive steady states during a time interval short compared with the time-scale of interest (IEC 60050-161 [7]).

**Transmitter exclusion band:** [The transmitter exclusion band is the band of frequencies over which no tests of radiated immunity of a transmitter are made. The exclusion band for transmitters is expressed relative to the carrier frequencies used \(the carrier frequencies of the base stations activated transmitter\(s\).\)](#)

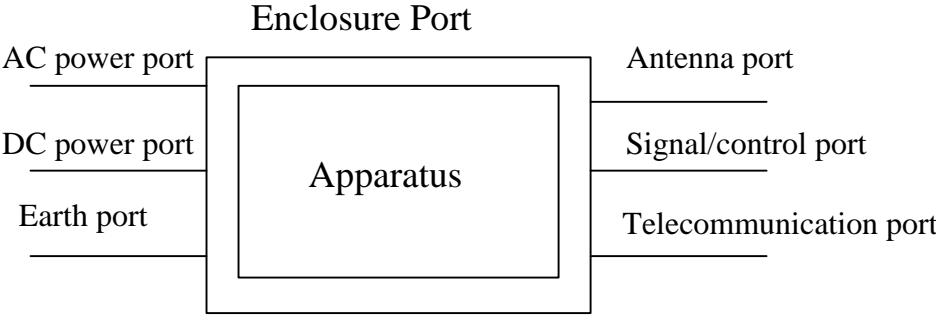


Figure 1: Examples of ports

## 4.5 Exclusion bands

### 4.5.1 Transmitter exclusion band

~~In the frequency bands including in-band emissions and out-of-band emissions are covered by the RF spectral mask specification and need no further consideration:~~

For the purpose of EMC specifications ~~this~~ there shall be ~~the a~~ transmitter exclusion band ~~from~~:

~~For UTRA FDD and 3,84 Mcps TDD option:~~

~~Lower carrier frequency used - 12,5 MHz. to upper carrier frequency used + 12,5 MHz.~~

~~For UTRA 3,84 Mcps TDD option:~~

~~Lower carrier frequency used - 12,5 MHz. to upper carrier frequency used + 12,5 MHz.~~

~~For UTRA 1,28 Mcps TDD option:~~

~~Lower carrier frequency used - 4 MHz to upper carrier frequency used + 4 MHz.~~

### 4.5.2 Receiver exclusion band

The receiver exclusion band for base stations extends from the lower frequency of the ~~allocated~~ Base Station receiver band minus 20 MHz to the upper frequency of the ~~allocated~~ Base Station receiver band plus 20 MHz. The exclusion bands are as set out below:

~~UTRA/FDD~~ UTRA FDD:

- a) 1900 MHz to 2000 MHz (Band I)
- b) 1830 MHz to 1930 MHz (Band II)
- ~~c) e)~~ 1690 MHz to 1805 MHz (Band III)
- d) 1690 MHz to 1775 MHz (Band IV)
- e) 804 MHz to 869 MHz (Band V)
- f) 810 MHz to 860 MHz (Band VI)

~~UTRA/TDD~~ UTRA 3,84 Mcps TDD option and UTRA 1,28 Mcps TDD option:

- a) 1880 MHz to 1940 MHz  
1990 MHz to 2045 MHz
- b) 1830 MHz to 2010 MHz (ITU-R, Region 2)
- c) 1890 MHz to 1950 MHz (ITU-R, Region 2)

# CHANGE REQUEST

⌘ **25.133 CR 698** ⌘ rev      ⌘ Current version: **6.7.0** ⌘

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

<b>Title:</b>	⌘ Clarification of Inter-RAT hand over test parameters.		
<b>Source:</b>	⌘ 3GPP TSG RAN WG4 (Radio)		
<b>Work item code:</b>	⌘ TEI6	<b>Date:</b>	⌘ 01/12/2004
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)		2 (GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)		R96 (Release 1996)
	<b>B</b> (addition of feature),		R97 (Release 1997)
	<b>C</b> (functional modification of feature)		R98 (Release 1998)
	<b>D</b> (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ Test requirements for inter-system handover from UTRAN FDD to GSM are not identical with the core requirements in the same specification. No justification is given for this discrepancy.
<b>Summary of change:</b>	⌘ In Section A.5.4.1, Table A.5.0D, T_Reconfirm_abort is specified as 5.5 seconds and reference is made to Table 8.8. However, in table 8.8 for the used compressed mode pattern (Pattern 2) the worst case value of T_Reconfirm_abort is specified as 5.04 seconds. This makes the reference confusing.  The comment is changed to clarify why the value is different between table A.5.0D and table 8.8  <u>Isolated Impact Analysis</u> No impact on UE, only a clarification.
<b>Consequences if not approved:</b>	⌘ Confusion will remain as to why these values differ, and which one should be used to test the UE.

<b>Clauses affected:</b>	⌘ A.5.4.1										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="padding: 2px;">Y</td><td style="padding: 2px;">N</td></tr> <tr><td style="padding: 2px;"> </td><td style="padding: 2px;">X</td></tr> <tr><td style="padding: 2px;">X</td><td style="padding: 2px;"> </td></tr> <tr><td style="padding: 2px;"> </td><td style="padding: 2px;">X</td></tr> </table>	Y	N		X	X			X	Other core specifications	⌘ 34.121
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		X									
X											
	X										
Test specifications											
O&M Specifications											
<b>Other comments:</b>	⌘										



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- 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.

### 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.

The UTRAN shall send a Handover from UTRAN command with activation time "now" with a new active cell, cell 2. In the GSM Handover command contained in that message, the IE starting time shall not be included. The RRC HANDOVER FROM UTRAN COMMAND message shall be sent to the UE. The start of T3 is defined as the end of last TTI containing the HO command.

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	<del>Taken Based on from</del> table 8.8 and requirement specified in section 10.3.6.33 of TS 25.331.
T1	s	20	
T2	s	5	
T3	s	1	

**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/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DCH_Ec/lor	dB	Note 1
OCNS_Ec/lor	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
$I_{oc}$	dBm/3.84 MHz	-70
CPICH_Ec/lo	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 90 ms from the beginning of time period T3.

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

**CHANGE REQUEST**

⌘ **25.133 CR 702** ⌘ rev  ⌘ Current version: **6.7.0** ⌘

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

<b>Title:</b>	⌘ Correction to UE transmitted power measurement		
<b>Source:</b>	⌘ 3GPP TSG RAN WG4 (Radio)		
<b>Work item code:</b>	⌘ TEI6	<b>Date:</b>	⌘ 01/12/2004
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-6
	<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (addition of feature),  <b>C</b> (functional modification of feature)  <b>D</b> (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a>.</p>		<p>Use <u>one</u> of the following releases:</p> <p>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)</p>

<b>Reason for change:</b>	⌘ When RAN4 answered T1 in its LS R4-040559 that the accuracy requirement of the UE transmitted power measurement is dependent on the UE reported power values, RAN4 also promised T1 that it would correct the UE Transmitted power measurement requirement and test case as per the T1 request. T1 has now agreed a CR to TS34.121 (T1-041577) assuming that RAN4 would also correct its specification.
<b>Summary of change:</b>	⌘ UE transmitted power replaced with UE reported power in Table 9.14 in section 9.1.6.1.  Test procedure in section A.9.1.3C.1.1 modified to be in line with LS R4-040559.  1.) Limit the UE maximum output power to a certain value using Maximum allowed UL TX power and continuous UP commands. 2.) Check the UE reported value, 3.) Map the UE reported value to accuracy requirement and define the test limits, 4.) Check that actual power as measured by SS is within these limits  <u>Isolated Impact Analyses:</u> This will not have an impact on implementation that is according to the original intention of RAN4 as indicated in LS to T1RF. However, if implementation has been done based on different interpretation, the CR may have an impact on the UE TX power measurement requirements.
<b>Consequences if not approved:</b>	⌘ There will be misalignment with the RAN4 and T1 specification, which is likely make it difficult or impossible to test the UE Transmitted power.

<b>Clauses affected:</b>	⌘ 9.1.6, A.9.1.3C.1.1
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<b>Other specs affected:</b>	⌘	<table border="1"><tr><td>Y</td><td>N</td></tr><tr><td></td><td>X</td></tr><tr><td>X</td><td></td></tr><tr><td></td><td>X</td></tr></table>	Y	N		X	X			X	Other core specifications	⌘	TS34.121
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	X												
		Test specifications											
		O&M Specifications											
<b>Other comments:</b>	⌘												

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## 9.1.6 UE transmitted power

### 9.1.6.1 Accuracy requirement

The measurement period in CELL\_DCH state is 1 slot.

**Table 9.14: UE transmitted power absolute accuracy**

Parameter	Unit	Accuracy [dB]	
		PUEMAX 24dBm	PUEMAX 21dBm
<del>UE transmitted power = PUEMAX</del> UE reported power $\geq$ PUEMAX	dBm	+1/-3	$\pm 2$
<del>UE transmitted power = PUEMAX-1</del> PUEMAX > UE reported power $\geq$ PUEMAX-1	dBm	+1.5/-3.5	$\pm 2.5$
<del>UE transmitted power = PUEMAX-2</del> PUEMAX-1 > UE reported power $\geq$ PUEMAX-2	dBm	+2/-4	$\pm 3$
<del>UE transmitted power = PUEMAX-3</del> PUEMAX-2 > UE reported power $\geq$ PUEMAX-3	dBm	+2.5/-4.5	$\pm 3.5$
<del>PUEMAX-10</del> $\leq$ UE transmitted power $<$ PUEMAX-3 PUEMAX-3 > UE reported power $\geq$ PUEMAX-10	dBm	+3/-5	$\pm 4$

NOTE 1: User equipment maximum output power, PUEMAX, is the maximum output power level without tolerance defined for the power class of the UE in TS 25.101 [3] section 6.2.1.

NOTE 2: UE transmitted power is the reported value.

For each empty slot created by compressed mode, no value shall be reported by the UE L1 for those slots.

### 9.1.6.2 UE transmitted power measurement report mapping

The reporting range for *UE transmitted power* is from -50 ...+33 dBm.

In table 9.15 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

**Table 9.15**

Reported value	Measured quantity value	Unit
UE_TX_POWER_021	-50 $\leq$ UE transmitted power < -49	dBm
UE_TX_POWER_022	-49 $\leq$ UE transmitted power < -48	dBm
UE_TX_POWER_023	-48 $\leq$ UE transmitted power < -47	dBm
...	...	...
UE_TX_POWER_102	31 $\leq$ UE transmitted power < 32	dBm
UE_TX_POWER_103	32 $\leq$ UE transmitted power < 33	dBm
UE_TX_POWER_104	33 $\leq$ UE transmitted power < 34	dBm

----- Next modified section -----

## A.9.1.3C UE transmitted power

### A.9.1.3C.1 Test Purpose and Environment

The purpose of this test is to verify that the UE transmitted power measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.6.

The test parameters are given in Table A.9.5C and A.9.5D below. In the measurement control information it shall be indicated to the UE that periodic reporting of the UE transmitted power measurement shall be used.

**Table A.9.5C: General test parameters for UE transmitted power**

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	

**Table A.9.5D: Cell Specific parameters for UE transmitted power**

Parameter	Unit	Cell 1
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DPCH_Ec/Ior	dB	Note1
OCNS		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 $I_{or}$ .		

#### A.9.1.3C.1.1 Test procedure

- 1) Set the UE power and Maximum allowed UL TX power to the maximum power for that UE power class.
- 2) ~~2)~~ — Send continuously during the entire test Up power control commands to the UE.
- 3) [Check the UE reported value](#)
- 4) [Map the UE reported value to accuracy requirement and define the test limits](#)
- 5) Measure the output power of the UE. The output power shall be averaged over ~~the transmit~~ one timeslot.
- 6) ~~Check that the reported UE transmitted power is within the specified range.~~ [Check that measured power is within the defined limits](#)
- 7) Decrease the Maximum allowed UL TX power with 1 dB and signal the new value to the UE.
- 8) Repeat from step 3) until the entire specified range for the UE transmitted power measurement has been tested, i.e. the accuracy requirement for the UE transmitted power measurement is specified 10dB below the maximum power for the UE power class.

#### A.9.1.3C.2 Test Requirements

The UE transmitted power measurement accuracy shall meet the requirements in section 9.1.6.

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



# CHANGE REQUEST

⌘ **25.141 CR 357** ⌘ rev      ⌘ Current version: **6.7.0** ⌘

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**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correction to RACH message demodulation test		
<b>Source:</b>	⌘ 3GPP TSG RAN WG4 (Radio)		
<b>Work item code:</b>	⌘ TEI6	<b>Date:</b>	⌘ 01/12/2004
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> 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)

<b>Reason for change:</b>	⌘ 1. Current definition of the required preamble threshold factor in RACH message demodulation test is ambiguous. It can be interpreted such that the same Pd and Pfa as specified in RACH preamble detection tests is required. Preamble Pd and Pfa are not subject of the message demodulation test but it is required that the same preamble detection threshold shall be used. 2. Name of parameter Pp-m in RACH reference measurement channel definition is incorrect.
<b>Summary of change:</b>	⌘ 1. It is clarified that the same preamble threshold factor as required in preamble detection tests shall be used. 2. Name of parameter Pp-m is corrected.
<b>Consequences if not approved:</b>	⌘ RACH message demodulation may be tested in incorrect test set up.  <u>Isolated Impact Analysis:</u> No impact on implementation as this CR corrects the test set-up only. Requirements remain unchanged.

<b>Clauses affected:</b>	⌘ 8.8.3.1, 8.8.3.4.1, 8.8.4.1, 8.6.4.4.1, Annex A7										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications	⌘ <span style="background-color: yellow;">    </span>
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	X										
		Test specifications									
		O&M Specifications									
<b>Other comments:</b>	⌘ <span style="background-color: yellow;">    </span>										

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## 8.8.3 Demodulation of RACH message in static propagation conditions

### 8.8.3.1 Definition and applicability

The performance requirement of RACH 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.

The [same](#) preamble threshold factor ~~is chosen to fulfil the requirements on Pfa and Pd as required to pass the tests~~ in subclauses 8.8.1 and 8.8.2 [shall be used](#). Only one signature is used and it is known by the receiver.

### 8.8.3.2 Minimum requirement

The BLER shall not exceed the limit for the  $E_b/N_0$  specified in table 8.20.

**Table 8.20: Performance requirements in AWGN channel**

Transport Block size TB and TTI in frames	168 bits, TTI = 20 ms		360 bits, TTI = 20 ms	
	$E_b/N_0$ for required BLER < $10^{-1}$	$E_b/N_0$ for required BLER < $10^{-2}$	$E_b/N_0$ for required BLER < $10^{-1}$	$E_b/N_0$ for required BLER < $10^{-2}$
BS with Rx Diversity	4.1 dB	5.0 dB	3.9 dB	4.8 dB
BS without Rx Diversity	7.2 dB	8.1 dB	6.9 dB	7.8 dB

The reference for this requirement is TS 25.104 subclause 8.7.2.

### 8.8.3.3 Test purpose

The test shall verify the receiver's ability to receive the test signal under static propagation conditions with a BLER not exceeding a specified limit.

### 8.8.3.4 Method of test

#### 8.8.3.4.1 Initial conditions

Test environment: normal; see subclause 4.4.1.

RF channels to be tested: B, M and T; see subclause 4.8

Preamble threshold factor: [same as required to pass the tests](#) ~~chosen to fulfil the requirements on Pfa and Pd~~ in subclauses 8.8.1 and 8.8.2

- 1) For BS with Rx diversity, connect the BS tester generating the wanted signal and AWGN generators to both BS antenna connectors for diversity reception via a combining network as shown in annex B.
- 2) For BS without Rx diversity, connect the BS tester generating the wanted signal and AWGN generator to the BS antenna connector via a combining network as shown in annex B.

## 8.8.3.4.2 Procedure

--- next changed section ---

## 8.8.4 Demodulation of RACH message in multipath fading case 3

## 8.8.4.1 Definition and applicability

The performance requirement of RACH 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.

The same preamble threshold factor ~~is chosen to fulfil the requirements on  $P_{fa}$  and  $P_d$  as required to pass the tests~~ in subclauses 8.8.1 and 8.8.2 shall be used. Only one signature is used and it is known by the receiver.

## 8.8.4.2 Minimum requirement

The BLER shall not exceed the limit for the  $E_b/N_0$  specified in table 8.22.

**Table 8.22: Performance requirements in fading case 3 channel**

Transport Block size TB and TTI in frames	168 bits, TTI = 20 ms		360 bits, TTI = 20 ms	
	$E_b/N_0$ for required BLER < $10^{-1}$	$E_b/N_0$ for required BLER < $10^{-2}$	$E_b/N_0$ for required BLER < $10^{-1}$	$E_b/N_0$ for required BLER < $10^{-2}$
BS with Rx Diversity	7.4 dB	8.5 dB	7.3 dB	8.3 dB
BS without Rx Diversity	11.1 dB	12.4 dB	11.0 dB	12.1 dB

The reference for this requirement is TS 25.104 subclause 8.7.2.

## 8.8.4.3 Test purpose

The test shall verify the receiver's ability to receive the test signal under multipath fading case 3 propagation conditions with a BLER not exceeding a specified limit.

## 8.8.4.4 Method of test

## 8.8.4.4.1 Initial conditions

Test environment: normal; see subclause 4.4.1.

RF channels to be tested: B, M and T; see subclause 4.8

Preamble threshold factor: same as required to pass the tests ~~chosen to fulfil the requirements on  $P_{fa}$  and  $P_d$~~  in subclauses 8.8.1 and 8.8.2

- 1) For BS with Rx diversity, connect the BS tester generating the wanted signal, multipath fading simulators and AWGN generators to both BS antenna connectors for diversity reception via a combining network as shown in annex B.
- 2) For BS without Rx diversity, connect the BS tester generating the wanted signal, multipath fading simulator and AWGN generator to the BS antenna connector via a combining network as shown in annex B.

8.8.4.4.2 Procedure

--- next changed section ---

## A.7 Reference measurement channels for UL RACH

The parameters for the UL RACH reference measurement channels are specified in Table A.7.

**Table A.7: Reference measurement channels for UL RACH**

Parameter		Unit
RACH	CRC	16 bits
	Channel Coding	Rate 1/2 conv. coding
	TTI	20 ms
	TB size	168, 360 bits
	Rate Matching	Repetition
	Number of diversity antennas	2
	Preamble detection window size	256 chips
	Ratio of preamble power and total message power (*)	0 dB
Power ratio of RACH Control/Data TB = 168		-2.69 dB
Power ratio of Control/Data TB = 360		-3.52 dB
NOTE *: If <del>Delta-Power offset</del> Pp-m is used to adjust the power offset, <del>Delta-Power offset</del> Pp-m shall be equal to -5 dB.		

## A.8 Reference measurement channels for UL CPCH