TSG RAN Meeting #18 **RP-020796**
New Orleans, US, 3 - 6 December, 2002

Title **CRs (Rel-5) to TS 25.104**
Source **TSG RAN WG4**
Agenda Item **7.4.5**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-021553	25.104	163		F	Rel-5	5.4.0	General Release 5 corrections	TEI5
R4-021654	25.104	166		F	Rel-5	5.4.0	Clarification of TX diversity requirements	TEI5

3GPP TSG RAN WG4 (Radio) Meeting #25 **R4-021553**

Secaucus, NJ, USA 11 - 15 November, 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.104** **CR** **163** ⌘ **rev** ⌘ Current version: **5.4.0** ⌘

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

Title:	⌘	General Release 5 corrections
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2002
Category:	⌘	**F**
Release:	⌘	Rel-5

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 specification contains some errors in references to sub-clauses. Abbreviations used in the specification are missing. This will lead to ambiguous interpretations of the specification.
Summary of change:	⌘	Clause 3.2: Abbreviations for QPSK and 16QAM added Clause 4.3 Correction of references to frequency bands I and III Clause 6.4.1.1 Missing power added Clause 8.8 References to ambiguous sub-clauses corrected
Consequences if not approved:	⌘	The specification will remain ambiguous. **Isolated impact analysis:** Correction of a requirement where the specification was ambiguous or not sufficiently explicit. Proposed corrrections in this CR will not affect NodeB implementation or NodeB-UE interworking.

Clauses affected:	⌘	3.2, 4.3, 6.4.1.1, 8.8			
Other specs affected:	⌘	**Y** / **N**	Other core specifications	⌘	25.141 in CR259
		N: X			
		Y: X	Test specifications		
		N: X	O&M Specifications		
Other comments:	⌘				

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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.

3.2 Abbreviations

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

16QAM	16 Quadrature Amplitude Modulation
ACIR	Adjacent Channel Interference Ratio
ACLR	Adjacent Channel Leakage power Ratio
ACS	Adjacent Channel Selectivity
BS	Base Station
BER	Bit Error Ratio
BLER	Block Error Ratio
CW	Continuous Wave (unmodulated signal)
DL	Down Link (forward link)
FDD	Frequency Division Duplexing
GSM	Global System for Mobile Communications
P_{out}	Output Power
P_{RAT}	Rated Output Power
PHS	Personal Handyphone System
PPM	Parts Per Million
QPSK	Quadrature Phase Shift Keying
RSSI	Received Signal Strength Indicator
SIR	Signal to Interference ratio
TDD	Time Division Duplexing
TPC	Transmit Power Control
UARFCN	UTRA Absolute Radio Frequency Channel Number
UE	User Equipment
UL	Up Link (reverse link)
WCDMA	Wideband Code Division Multiple Access

--- next changed section ---

4.3 Regional requirements

Some requirements in TS 25.104 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.
5.3	Tx-Rx Frequency Separation	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
5.4	Channel arrangement	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
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.
6.6.2.3	Protection outside a licensee's frequency block	This requirement is applicable if protection is required outside a licensee's frequency block.
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.329-9 [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.329-9 [1], are applied.
6.6.3.3.1	Co-existence with GSM900 -Operation in the same geographic area	This requirement may be applied for the protection of GSM 900 MS in geographic areas in which both GSM 900 and UTRA are deployed.
6.6.3.3.2	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.
6.6.3.4.1	Co-existence with DCS1800 -Operation in the same geographic area	This requirement may be applied for the protection of DCS 1800 MS in geographic areas in which both DCS 1800 and UTRA are deployed.
6.6.3.4.2	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.
6.6.3.5	Co-existence with PHS	This requirement may be applied for the protection of PHS in geographic areas in which both PHS and UTRA are deployed.
6.6.3.6	Co-.existence with services in adjacent frequency bands	This requirement may be applied for the protection in bands adjacent to the downlink bands as defined in clause 5.2in geographic areas in which both an adjacent band service and UTRA are deployed.
6.6.3.7.1	Co-existence with UTRA TDD - Operation in the same geographic area	This requirement may be applied to geographic areas in which both UTRA-TDD and UTRA-FDD are deployed.
6.6.3.7.2	Co-existence with UTRA TDD - Co-located base stations	This requirement may be applied for the protection of UTRA-TDD BS receivers when UTRA-TDD BS and UTRA FDD BS are co-located.
6.6.3.8.1	Co-existence with UTRA in frequency band ~~II~~ III -Operation in the same geographic area	This requirement may be applied for the protection of UTRA UE in frequency band I in geographic areas in which both UTRA in frequency band I and III are deployed.

6.6.3.8.2	Co-existence with UTRA in frequency band ~~II~~ III - Co-located base stations	This requirement may be applied for the protection of UTRA BTS receivers in frequency band I when UTRA BS in frequency band I and III are co-located.
6.6.3.9.1	Co-existence with UTRA in frequency band III -Operation in the same geographic area	This requirement may be applied for the protection of UTRA UE in frequency band III in geographic areas in which both UTRA in frequency band I and III are deployed.
6.6.3.9.2	Co-existence with UTRA in frequency band III - Co-located base stations	This requirement may be applied for the protection of UTRA BTS receivers in frequency band III when UTRA BS in frequency band I and III are co-located.
6.6.3.10.1	Co-existence with PCS1900 - Co-located base stations	This requirement may be applied for the protection of PCS 1900 BTS receivers when PCS 1900 BTS and UTRA BS are co-located.
6.6.3.11.1	Co-existence with GSM850 - Co-located base stations	This requirement may be applied for the protection of GSM 850 BTS receivers when GSM 850 BTS and UTRA BS are co-located.
7.4.2	Adjacent Channel Selectivity Co-location with UTRA-TDD	This requirement may be applied for the protection of UTRA-FDD BS receivers when UTRA-FDD BS and UTRA-TDD BS are co-located.
7.5	Blocking characteristic	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
7.5.2	Blocking characteristics Co-location with GSM900, DCS 1800, PCS1900 and/or UTRA	This requirement may be applied for the protection of UTRA FDD BS receivers when UTRA FDD BS and GSM 900, DCS1800, PCS1900, GSM850 and/or UTRA BS (operating in different frequency bands) are co-located.
7.5.3	Blocking characteristics Co-location with UTRA TDD	This requirement may be applied for the protection of UTRA FDD BS receivers when UTRA FDD BS and UTRA TDD BS are co-located.
7.6	Intermodulation characteristics	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
7.7	Spurious emissions	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
	HSDPA*	The portion of HSDPA(High Speed Downlink Packet Access) is not applicable to ARIB standards by the time when ARIB is prepared to transpose.

Note *: HSDPA: This regional requirement should be reviewed to check its necessity every TSG RAN meeting.

--- next changed section ---

6.4.1.1 Power control steps

The power control step is the required step change in the code domain power of a code channel in response to the corresponding power control command. The aggregated output power change is the required total change in the code domain power of a code channel in response to multiple consecutive power control commands corresponding to that code channel.

--- next changed section ---

8.8 Performance requirement for CPCH

Performance requirements for CPCH consists of two parts: preamble detection and message demodulation. Requirements for these are in sections 8.~~x~~8.1 and 8.~~x~~8.2, respectively. Requirements are defined for two propagation conditions: static and fading case 3. The propagation conditions are defined in annexes B.1 and B.2.

8.8.1 Performance requirement for CPCH preamble detection

8.8.1.1 Detection of CPCH Access Preamble (AP)

The requirement for detection of the AP for CPCH is the same as the requirement for detection of the RACH preamble which is described in section 8.7.1 of this specification.

8.8.1.2 Detection of CPCH Collision Detection Preamble (CD)

The requirement for detection of the CD for CPCH is the same as the requirement for detection of the RACH preamble which is described in section 8.7.1 of this specification.

8.8.2 Demodulation of CPCH message part

The performance measure is required Eb/N0 for block error rate (BLER) of 10^{-1} and 10^{-2}. Both measurement channels have TTI=20 ms. Payloads are 168 and 360 bits. Channel coding is rate ½ convolutional coding.

8.8.2.1 Minimum requirements for Static Propagation Condition

Table 8.13: Required Eb/N0 for static propagation

	TB size = 168 bits		**TB size = 360 bits**	
	BLER=10^{-1}	**BLER=10^{-2}**	**BLER=10^{-1}**	**BLER=10^{-2}**
Required Eb/N0	4.1 dB	5.0 dB	3.9 dB	4,8 dB

8.8.2.2 Minimum requirements for Multipath Fading Case 3

Table 8.14: Required Eb/N0 for case 3 fading

	TB size = 168 bits		**TB size = 360 bits**	
	BLER=10^{-1}	**BLER=10^{-2}**	**BLER=10^{-1}**	**BLER=10^{-2}**
Required Eb/N0	7.5 dB	8.5 dB	7.3 dB	8.1 dB

3GPP TSG RAN WG4 (Radio) Meeting #25 R4-021654

Secaucus, NJ, USA 11 - 15 November, 2002

CR-Form-v7

CHANGE REQUEST

⌘ 25.104 CR 166 ⌘ rev ⌘ Current version: 5.4.0 ⌘

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

Title:	⌘	Clarification of Tx diversity requirements
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2002
Category:	⌘	F
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Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	It is currently unclear how the transmitter requirements applies to a base station supporting Tx diversity.
Summary of change:	⌘	It is proposed to add a statement at the beginning of the section 6 to clarify that the requirements are applicable on each antenna port.
Consequences if not approved:	⌘	The specification will remain unclear for BS supporting Tx diversity. **Isolated impact analysis:** Correction of a requirement where the specification was ambiguous or not sufficiently explicit. Proposed corrections in this CR will not affect NodeB implementation or NodeB-UE interworking.
Clauses affected:	⌘	3.1; 6.1

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 Definitions and abbreviations

3.1 Definitions

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

Output power: The mean power of one carrier of the base station, delivered to a load with resistance equal to the nominal load impedance of the transmitter.

Rated output power: Rated output power of the base station is the mean power level per carrier that the manufacturer has declared to be available at the antenna connector.

Maximum output Power: The mean power level per carrier of the base station measured at the antenna connector in a specified reference condition.

Mean power: When applied to a W-CDMA modulated signal this is the power (transmitted or received) in a bandwidth of at least (1+ α) times the chip rate of the radio access mode. The period of measurement shall be at least one timeslot unless otherwise stated.

Power control dynamic range: The difference between the maximum and the minimum transmit output power of a code channel for a specified reference condition.

RRC filtered mean power: The mean power as measured through a root raised cosine filter with roll-off factor α and a bandwidth equal to the chip rate of the radio access mode.

NOTE 1: The RRC filtered mean power of a perfectly modulated W-CDMA signal is 0.246 dB lower than the mean power of the same signal.

Code domain power: That part of the mean power which correlates with a particular (OVSF) code channel. The sum of all powers in the code domain equals the mean power in a bandwidth of (1+ α) times the chip rate of the radio access mode.

Total power dynamic range: The difference between the maximum and the minimum total transmit output power for a specified reference condition.

Node B Tx Diversity mode - A Node B is in transmit diversity mode when the CPICH transmit diversity indicator, P-CCPCH STTD indicator and the primary and secondary SCH TSTD indicators are enabled.

6 Transmitter characteristics

6.1 General

Unless otherwise stated, the requirements in Section 6 assume that the transmitter is not equipped with diversity. For transmitters with diversity, the requirements apply to each antenna connector separately, with the other one terminated or disabled .The requirements are otherwise unchanged.

Unless otherwise stated, the transmitter characteristics are specified at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a TX amplifier, a diplexer, a filter or the combination of such devices is used, requirements apply at the far end antenna connector (port B).

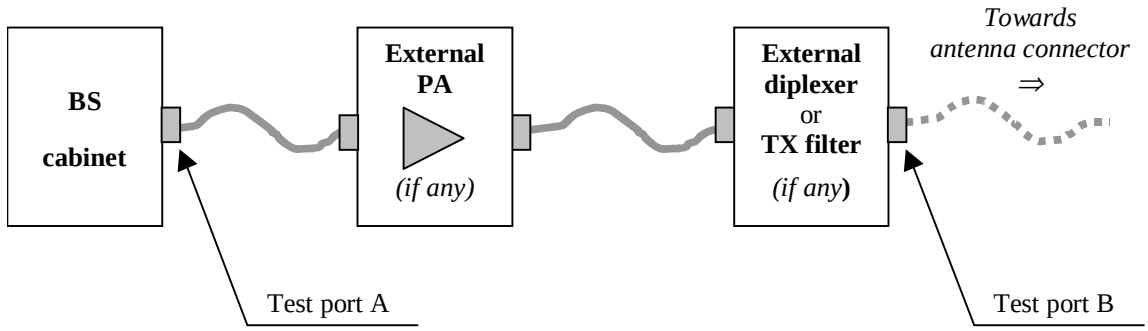

Figure 6.1: Transmitter test ports