

Sophia Antipolis, France, 26. – 29. October 1999

Agenda Item:

Source: SIEMENS AG

Title: **Corrections to 25.102 version 3.0.0**

Document for: Approval

1 Introduction

This paper proposes some corrections to TS 25.102v3.0.0 “UTRA (UE) TDD, Radio Transmission and Reception”.

2 Discussion

In detail some mistakes in the current version are identified and corrected as follows:

- In section 3.3 in the definition of I_{or} “Forward link” has to be changed to “Downlink”
- In section 6.2.1 Note 3 is separated into Note 2 and Note 3 and the text is slightly modified.
- In section 7.2 Table 7.1 is titled “Diversity characteristics for UTRA/FDD” which should be corrected to
- In section 7.4 Table 7.3 it is clarified that $DPCH_{EC}/I_{or}$ is the power of all codes used by the particular service. This clarification is needed, since the 12.2kbps DL reference measurement channel uses two codes. For that reason a new term $\Sigma DPCH_{Ec}/I_{or}$ is introduced and added to the Abbreviation list in section 3.3.

CHANGE REQUEST			Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.	
25.102 CR	Current Version: 3.0.0			
GSM (AA.BB) or 3G (AA.BBB) specification number ↑	↑ CR number as allocated by MCC support team			
For submission to: RAN#6 <i>list expected approval meeting # here ↑</i>	for approval <input checked="" type="checkbox"/>	strategic <input type="checkbox"/>	(for SMG use only)	
	for information <input type="checkbox"/>	non-strategic <input type="checkbox"/>		

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

Proposed change affects: (U)SIM ME UTRAN / Radio Core Network
(at least one should be marked with an X)

Source: TSG RAN WG4 **Date:** 29.10.99

Subject: Corrections to 25.102 v.3.0.0

Work item:

Category:	F Correction <input checked="" type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input type="checkbox"/> D Editorial modification <input type="checkbox"/>	Release:	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
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(only one category shall be marked with an X)

Reason for change: 25.102 version 3.0.0 includes some minor mistakes that need to be corrected.

Clauses affected:

Other specs affected:	Other 3G core specifications <input type="checkbox"/> → List of CRs: Other GSM core specifications <input type="checkbox"/> → List of CRs: MS test specifications <input type="checkbox"/> → List of CRs: BSS test specifications <input type="checkbox"/> → List of CRs: O&M specifications <input type="checkbox"/> → List of CRs:	<div style="border: 1px solid black; height: 40px; width: 100%;"></div>
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Other comments: Based on 3GPP WG4 Tdoc (99) 694

3.3 Abbreviations

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

ACIR	Adjacent Channel Interference Ratio
ACLR	Adjacent Channel Leakage power Ratio
ACS	Adjacent Channel Selectivity
BS	Base Station
CW	Continuous wave (unmodulated signal)
DL	Down link (forward link)
DPCH	Dedicated physical channel
DPCH_Ec	Average energy per PN chip for DPCH
$\frac{\text{DPCH_Ec}}{I_{or}}$	The ratio of the average energy per PN chip of the DPCH to the total transmit power spectral density of the forward link downlink at the BS antenna connector
$\frac{\Sigma \text{DPCH_Ec}}{I_{or}}$	The ratio of the sum of DPCH_Ec for one service in case of multicode to the total transmit power spectral density of the downlink at the BS antenna connector
EIRP	Effective Isotropic Radiated Power
FDD	Frequency Division Duplexing
FER	Frame Error Rate
I_{or}	The total transmit power spectral density of the Forward link downlink at the BS antenna connector
\hat{I}_{or}	The received power spectral density of the Forward link downlink as measured at the UE antenna connector
PPM	Parts Per Million
RSSI	Received Signal Strength Indicator
SIR	Signal to Interference ratio
TDD	Time Division Duplexing
TPC	Transmit Power Control
UE	User Equipment
UL	Up link (reverse link)
UTRA	UMTS Terrestrial Radio Access

6.2 Transmit power

6.2.1 User Equipment maximum output power

The following Power Classes define the maximum output power;

Table 6.1: UE power classes

Power Class	Maximum output power	Tolerance
1	+30 dBm	+1dB /-3dB
2	+24 dBm	+1dB /-3dB
3	+21 dBm	+2dB /-2dB]
4	+10 dBm	+4dB /-4dB

Note

1. The maximum output power refers to the measure of power when averaged over the useful part of the transmit timeslot at the maximum power control setting.
2. For multi-code operation the maximum output power will be reduced by the difference of peak to average ratio between single and multi-code transmission.
3. The tolerance of the maximum power is below the prescribed value even for the multi-code transmission mode.
- 3.4. Power class 4 is envisaged for licensed exempt operation.
- 4.5. For UE using directive antennas for transmission, a class dependent limit will be placed on the maximum EIRP (Equivalent Isotropic Radiated Power)..

7.2 Diversity characteristics

A suitable receiver structure using coherent reception in both channel impulse response estimation, and code tracking procedures is assumed. Three forms of diversity are considered to be available in UTRA/TDD:

Table 6, Diversity characteristics for UTRA/TDD.

Table 7.1 : Diversity characteristics for UTRA/~~FDD~~TDD

Time diversity	Channel coding and interleaving in both up link and down link
Multi-path diversity	Rake receiver or other suitable receiver structure with maximum combining. Additional processing elements can increase the delay-spread performance due to increased capture of signal energy.
Antenna diversity	Antenna diversity with maximum ratio combining in the base station and optionally in the mobile stations. Possibility for downlink transmit diversity in the base station.

7.3 Reference sensitivity level

The reference sensitivity is the minimum receiver input power measured at the antenna port at which the BIT Error Rate BER does not exceed a specific value.

7.3.1 Minimum Requirements

Table 7.2 : Reference sensitivity level

Data rate	UE reference sensitivity level (dBm)	FER/BER
12.2 kbps	-105 dBm	BER shall not exceed 0.001

7.4 Maximum input level

This is defined as the maximum receiver input power at the UE antenna port which does not degrade the specified BER performance.

7.4.1 Minimum Requirements

The BER shall not exceed 0.001 for the parameters specified in Table 7.3.

Table 7.3: Maximum input level

Parameter	Level	Unit
$\frac{\Sigma \text{DPCH_Ec}}{I_{\text{or}}}$	-7	dB
\hat{I}_{or}	-25	dBm/3.84 MHz