3GPP TSG-RAN Meeting #28 **Tdoc ⌘ RP-05027**
Quebec, Canada, 1 – 3 July, 2005

CR-Form-v7

CHANGE REQUEST

⌘ **TS25.101** **CR** **408** ⌘ **rev** **3** ⌘ 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 ☐

Title:	⌘	UE maximum output power power with HS-DPCCH and E-DCH
Source:	⌘	Motorola
Work item code:	⌘	EDCH
Date:	⌘	18/May/2005
Category:	⌘	**F**
Release:	⌘	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 UE maximum output power with E-DCH is not specified
Summary of change:	⌘	This defines the allowed MPR reduction based on the Cubic Metric for the specific combination for the specifix values of β_c, β_d, β_{hs}, β. This change is also introduced for HS-DPCCH to specific when applicable a lower MPR than REL5
Consequences if not approved:	⌘	Resulting in increased ACLR and spectrum mask leakage if MPR headroom is in-correctly set for specifix values of β_c, β_d, β_{hs}, β_{ec} and β_{ed} used in the estimated E-TFC and TFC selection

Clauses affected:	⌘	6.2.2			
Other specs affected:	⌘	**Y**	**N**		
			☐	Other core specifications	⌘
		X	☐	Test specifications	TS34.121
			☐	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.

6.2 Transmit power

6.2.1 UE maximum output power

The following Power Classes define the nominal maximum output power. The nominal power defined is the broadband transmit power of the UE, i.e. the power 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.

Table 6.1: UE Power Classes

Operating Band	Power Class 1		Power Class 2		Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
Band I	+33	+1/-3	+27	+1/-3	+24	+1/-3	+21	+2/-2
Band II	-	-	-	-	+24	+1/-3	+21	+2/-2
Band III	-	-	-	-	+24	+1/-3	+21	+2/-2
Band IV	-	-	-	-	+24	+1/-3	+21	+2/-2
Band V	-	-	-	-	+24	+1/-3	+21	+2/-2
Band VI	-	-	-	-	+24	+1/-3	+21	+2/-2

NOTE: The tolerance allowed for the nominal maximum output power applies even for the multi-code DPDCH transmission mode.

~~6.2.2 UE maximum output power with HS-DPCCH~~

~~The applicability of this clause for UEs that support E-DCH is FFS.~~

~~For all values of β_{hs} defined in [8] the UE maximum output powers as specified in Table 6.1a are applicable in the case when the HS-DPCCH is fully or partially transmitted during a DPCCH timeslot. In DPCCH time slots, where HS-DPCCH is not transmitted, the UE maximum output power shall fulfil the requirements specified in Table 6.1.~~

~~Table 6.1a: UE maximum output powers with HS-DPCCH~~

~~Ratio of β_c to β_d for all values of β_{hs}~~	~~Power Class 3~~		~~Power Class 4~~	
	~~Power (dBm)~~	~~Tol (dB)~~	~~Power (dBm)~~	~~Tol (dB)~~
~~$1/15 \le \beta_c/\beta_d \le 12/15$~~	~~+24~~	~~+1/-3~~	~~+21~~	~~+2/-2~~
~~$13/15 \le \beta_c/\beta_d \le 15/8$~~	~~+23~~	~~+2/-3~~	~~+20~~	~~+3/-2~~
~~$15/7 \le \beta_c/\beta_d \le 15/0$~~	~~+22~~	~~+3/-3~~	~~+19~~	~~+4/-2~~

6.2.2 UE maximum output power with HS-DPCCH and E-DCH

The Maximum Power Reduction (MPR) for the nominal maximum output power defined in 6.2.1 is specified in table 6.1b for the values of β_c, β_d, β_{hs}, β_{ec} and β_{ed} defined in [8] fully or partially transmitted during a DPCCH timeslot

Table 6.1a: UE maximum output power with HS-DPCCH and E-DCH

UE transmit channel configuration	CM (dB)	MPR (dB)
For all combinations of; DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH	$0 \le CM \le 3.0$	MAX (CM-1, 0)
Note 1: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference. Note 2: The impact of 1dB power control granularity is FFS.		

Where Cubic Metric (CM) is based on the UE transmit channel configuration and is given by

$CM = [20 * \log10 ((v\_norm^3)_{rms}) – 20 * \log10 ((v\_norm\_ref^3)_{rms})] / 1.85$

Where

- v_norm is the normalized voltage waveform of the input signal
- v_norm_ref is the normalized voltage waveform of the reference signal (12.2 kbps AMR Speech)

6.3 Frequency Error