TSG-RAN Meeting #10 ***RP-000586***
Bangkok, Thailand, 6 - 8 December 2000

Title: Agreed CRs to TS 25.102

Source: TSG RAN WG4

Agenda Item:5.4.3

Tdoc Num	TS	CR number	Title	Type	Status	Cur Ver	New Ver
R4-000788	25.102	36	Correction for 25.102 concerning UE maximum output power classes	F	agreed	3.4.0	3.5.0
R4-000789	25.102	37	Correction for 25.102 concerning the coexistence of TDD and FDD in the same band	F	agreed	3.4.0	3.5.0
R4-000830	25.102	38	Correction of Out-of-Sync criteria in 25.102	F	agreed	3.4.0	3.5.0
R4-000939	25.102	39	Clarification of the mentioned parameter alpha	F	agreed	3.4.0	3.5.0
R4-000982	25.102	40	Correction for 25.102 concerning the channel number calculation	F	agreed	3.4.0	3.5.0

3GPP TSG RAN WG4 Meeting #14 **R4-000788**

Sophia, France 13th - 17th November 2000

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CHANGE REQUEST

⌘ **25.102** **CR** 36 ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	**Correction for 25.102 concerning UE maximum output power classes**
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘
Category:	⌘	***F*** ***Release:*** ⌘ R99

Use one of the following categories:
- ***F*** *(essential 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)*

Reason for change:	⌘	Reintroduction of UE power classes for consistency between FDD and TDD specifications.
Summary of change:	⌘	Reintroduction of UE power classes for TDD
Consequences if not approved:	⌘	No consistency for specifications within RAN4.

Clauses affected:	⌘	4.2, 6.2.1, 6.6.2.1.1
Other specs affected:	⌘	☐ Other core specifications ⌘ ☒ Test specifications ☐ O&M Specifications
Other comments:	⌘	

4 General

4.1 Measurement uncertainty

The requirements given in the present document make no allowance for measurement uncertainty. Where the measurement uncertainty can be determined, the test limit shall be relaxed from the value given in the present document. See Annex F of 34.121. Where the measurement uncertainty cannot reasonably be determined, the "Shared Risk" principle is applied, i.e. the test limit is not relaxed.

The Shared Risk principle is defined in ETR 028.

4.2 Power Classes

For UE power classes 1 and 4, a number of RF parameter are not specified. It is intended that these are part of a later release.

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. The error of the maximum average power is below the prescribed value even at the multi-code transmission mode.
3. Power class 4 is envisaged for licensed exempt operation.
4. For UE using directive antennas for transmission, a class dependent limit will be placed on the maximum EIRP (Equivalent Isotropic Radiated Power).

6.6.2.1 Spectrum emission mask

The spectrum emission mask of the UE applies to frequencies, which are between 2.5 and 12.5MHz from a carrier frequency. The out of channel emission is specified relative to the UE output power in measured in a 3.84 MHz bandwidth.

6.6.2.1.1 Minimum Requirement

~~The power of the 21 dBm power class 3 UE emission shall not exceed the levels specified in table 6.5.~~

The power of any UE emission shall not exceed the levels specified in table 6.5.

Table 6.5 : Spectrum Emission Mask Requirement

Frequency offset from carrier Δf	Minimum requirement	Measurement bandwidth
2.5 - 3.5 MHz	-35 -15*(Δf – 2.5) dBc	30 kHz *
3.5 - 7.5 MHz	-35- 1*(Δf-3.5) dBc	1 MHz *
7.5 - 8.5 MHz	-39 - 10*(Δf – 7.5) dBc	1 MHz *
8.5 - 12.5 MHz	-49 dBc	1 MHz *

3GPP TSG RAN WG4 Meeting #14 **R4-000789**

Sophia, France 13th - 17th November 2000

CR-Form-v3

CHANGE REQUEST

⌘ **25.102** **CR** 37 ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	**Correction for 25.102 concerning the coexistence of TDD and FDD in the same band**
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘
Category:	⌘	***F*** ***Release:*** ⌘ R99

Use one of the following categories:
F *(essential 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)

Reason for change:	⌘	TDD and FDD in the same band is not supported in release 99.
Summary of change:	⌘	Deletion of the final sentence in 5.2.
Consequences if not approved:	⌘	Specification is self-inconsistent

Clauses affected:	⌘	5.2
Other specs affected:	⌘	☐ Other core specifications ⌘ ☒ Test specifications ☐ O&M Specifications
Other comments:	⌘	

5.2 Frequency bands

UTRA/TDD is designed to operate in the following bands;

a) 1900 – 1920 MHz: Uplink and downlink transmission
2010 – 2025 MHz Uplink and downlink transmission

b)* 1850 – 1910 MHz: Uplink and downlink transmission
1930 – 1990 MHz: Uplink and downlink transmission

c)* 1910 – 1930 MHz: Uplink and downlink transmission

* Used in ITU Region 2

Additional allocations in ITU region 2 are FFS.

Deployment in existing or other frequency bands is not precluded.

~~The co-existence of TDD and FDD in the same bands is still under study in WG4.~~

3GPP TSG RAN WG4 Meeting #14 **R4-000830**

Sophia, France 13th - 17th November 2000

CR-Form-v3

CHANGE REQUEST

⌘ **25.102 CR 38** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	**Correction of Out-of-Sync criteria in 25.102**
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘
Category:	⌘	***F*** ***Release:*** ⌘ R99

Use one of the following categories:
F *(essential 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)*

Reason for change:	⌘	As decided in RAN4#11 for FDD, the UE "shall" turn its power on after time instant F, i.e. "may" is changed to "shall". Also the related Figure is corrected and the brackets around the timing parameters have been removed.
Summary of change:	⌘	
Consequences if not approved:	⌘	Incorrect behaviour of the UE.

Clauses affected:	⌘	6.4.3		
Other specs affected:	⌘	☐ Other core specifications **X** Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

6.4.3 Out-of-synchronisation handling of output power

The UE shall monitor the DPCH quality in order to detect a loss of the signal on Layer 1, as specified in TS 25.224. The thresholds Q_{out} and Q_{in} specify at what DPCH quality levels the UE shall shut its power off and when it ~~may~~ shall turn its ~~transmitter~~ power on, respectively. The thresholds are not defined explicitly, but are defined by the conditions under which the UE shall shut its transmitter off and turn it on, as stated in this clause.

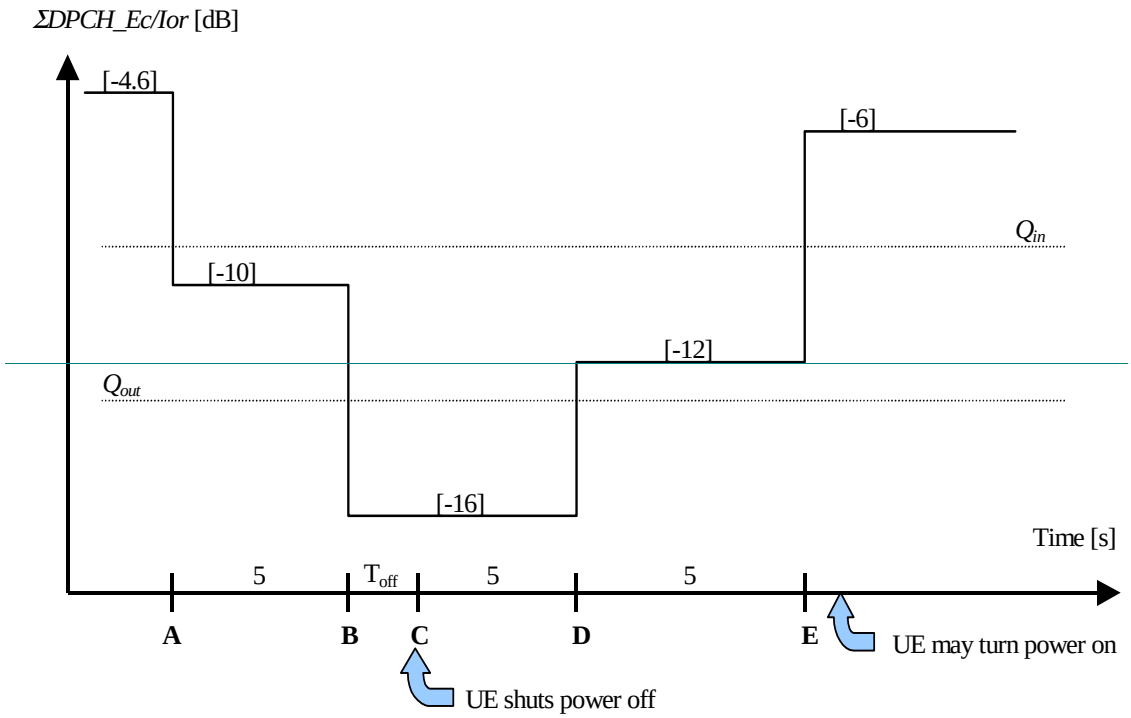
6.4.3.1 Requirement

The parameters in Table 6.4 are defined using the DL reference measurement channel (12.2) kbps specified in Annex A.2.2, where the CRC bits are replaced by data bits, and with static propagation conditions.

Table 6.4: DCH parameters for test of Out-of-synch handling

Parameter	Unit	Value
$\hat{I}_{or}/I_{oc}$	dB	-1
I_{oc}	dBm/3.84 MHz	-60
$\frac{\Sigma DPCH\_E_c}{I_{or}}$	dB	See figure 6.1
Information Data Rate	kbps	13
TFCI	-	On

The conditions for when the UE shall shut its transmitter on and when it ~~may~~ shall turn it on are defined by the parameters in Table 6.4 together with the DPCH power level as defined in Figure 6.1.



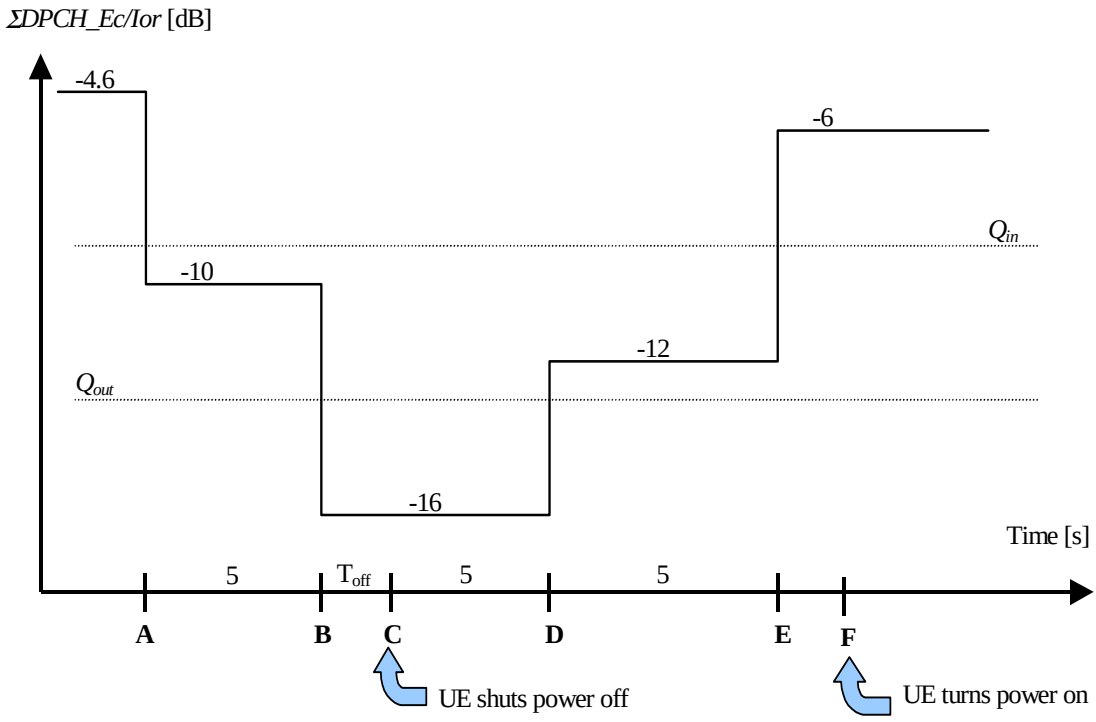


Figure 6.1. Conditions for out-of-synch handling in the UE. The indicated thresholds Q_{out} andQ_{in} are only informative.

The requirements for the UE are that

1. The UE shall not shut its transmitter off before point B.
2. The UE shall shut its transmitter off before point C, which is ~~Toff~~ T_{off} = ~~[~~200~~]~~ ms after point B
3. The UE shall not turn its transmitter on between points C and E.
4. The UE ~~may~~ shall turn its transmitter on ~~after~~ before point ~~E~~ F, which is T_{on} = 200 ms after Point E.

3GPP TSG RAN WG4 Meeting #14 **R4-000939**

Sophia, France 13th - 17th November 2000

CR-Form-v3

CHANGE REQUEST

⌘ **25.102** **CR** **39** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network ☐

Title:	⌘	Clarification of the mentioned parameter α
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ -
Category:	⌘	**F** ***Release:*** ⌘ R99

Use one of the following categories:
- ***F*** *(essential 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)*

Reason for change:	⌘	Clarification of the definition of parameter α
Summary of change:	⌘	Avoidance of irritation with roll off α
Consequences if not approved:	⌘	Could lead to problems in implementation

Clauses affected:	⌘	6.4.1; 6.4.1.2		
Other specs affected:	⌘	☐ 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/3G_Specs/CRs.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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

6.4.1 Uplink power control

Uplink power control is the ability of the UE transmitter to sets its output power in accordance with measured downlink path loss, values determined by higher layer signaling and path loss weighting parameter α as defined in TS 25.224. The output power is defined as the average power of the transmit timeslot, and is measured with a filter that has a Root-Raised Cosine (RRC) filter response with a roll off $\alpha = 0.22$ and a bandwidth equal to the chip rate.

6.4.1.1 Initial Accuracy

The UE power control initial accuracy error shall be less than +/-9dB under normal conditions and +/- 12dB under extreme conditions.

6.4.1.2 Differential accuracy, controlled input

The power control differential accuracy, controlled input, is defined as the error in the UE transmitter power step as a result of a step in SIR_{TARGET} when the path loss weighting parameter $\alpha=0$. The step in SIR_{TARGET} shall be rounded to the closest integer dB value. The error shall not exceed the values in table 6.3.

3GPP TSG RAN WG4 Meeting #14 **R4-000982**

Sophia, France 13th - 17th November 2000

CR-Form-v3

CHANGE REQUEST

⌘ **25.102** **CR** 40 ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction for 25.102 concerning the channel number calculation
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 14.11.2000
Category:	⌘	**F** ***Release:*** ⌘ R99

Use one of the following categories:
- ***F*** *(essential 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)*

Reason for change:	⌘	Obvious error in the calculation formula for the channel number
Summary of change:	⌘	Deletion of the unit MHz
Consequences if not approved:	⌘	Incorrect channel number

Clauses affected:	⌘	5.4.3
Other specs Affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

5.4 Channel arrangement

5.4.1 Channel spacing

The nominal channel spacing is 5 MHz, but this can be adjusted to optimise performance in a particular deployment scenario.

5.4.2 Channel raster

The channel raster is 200 kHz, which means that the carrier frequency must be a multiple of 200 kHz.

5.4.3 Channel number

The carrier frequency is designated by the UTRA absolute radio frequency channel number (UARFCN). The value of the UARFCN in the IMT2000 band is defined as follows:

~~N_t = 5*(F - MHz)~~ ~~0.0 MHz ≤ F ≤ 3276.6 MHz~~ ~~where F is the carrier frequency in MHz~~

N_t = 5*F 0.0 MHz ≤ F≤ 3276.6 MHz where F is the carrier frequency in MHz