TSG-RAN Meeting #11   *RP-010086*
Palm Springs, CA, USA, 13 - 16 March 2001

Title: **Agreed CRs (Release '99) to TS 25.102**

Source: **TSG-RAN WG4**

Agenda item: **5.4.3**

Doc-1st-Level	Spec	CR	Subject	Cat	Status-2nd-Level	Version-Current	Version-New
RP-010086	25.102	41	Relationship between Minimum Requirements and Test Tolerances.	F	agreed	3.5.0	3.6.0
RP-010086	25.102	42	Requirements for out-of-synchronisation handling of output power during DTX	F	agreed	3.5.0	3.6.0
RP-010086	25.102	43	UE Power Control Accuracy	F	agreed	3.5.0	3.6.0
RP-010086	25.102	44	Correction of version number of the ITU-R Recommendation SM.329	F	agreed	3.5.0	3.6.0

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CHANGE REQUEST

| ⌘ | **25.102** CR **41** | ⌘ rev | **-** | ⌘ | Current version: | **3.5.0** | ⌘ |

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

Title: ⌘	Relationship between Minimum Requirements and Test Tolerances.	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 23-26 Jan2001
Category: ⌘ **F**		***Release:*** ⌘ R99

Use <u>one</u> 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 <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)*

Reason for change: ⌘	Clarification between Minimum and Test Requirements must be complete and precise.
Summary of change: ⌘	
Consequences if not approved: ⌘	Unprecise requirements leading to misinterpretation.

Clauses affected: ⌘	4.1
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	

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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.

4 General

4.1 ~~Measurement Uncertainty~~ <u>Relationship between Minimum Requirements and Test Requirements</u>

The <u>Minimum R</u>r~~e~~quirements given in th<u>is</u>~~e~~ <u>specification</u>~~present document~~ make no allowance for measurement uncertainty. The test specification 34.122 Annex F defines <u>T</u>t~~t~~est <u>T</u>t~~t~~olerances. These <u>T</u>t~~t~~est <u>T</u>t~~t~~olerances are individually calculated for each test. The <u>T</u>t~~t~~est <u>T</u>t~~t~~olerances are <u>used</u> ~~then added~~ to <u>relax</u> the ~~limits~~ <u>Minimum Requirements</u> in this specification to create <u>T</u>t~~t~~est <u>Requirements</u>~~limits~~.
The measurement results <u>returned by the Test System</u> are compared <u>–without any modifications-</u>against the <u>T</u>t~~t~~est ~~limits~~<u>Requirements</u> as defined by the shared risk principle.
The Shared Risk principle is defined in ETR 273 Part 1 sub-part 2 section 6.5.

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CHANGE REQUEST

⌘ **25.102** CR **42** ⌘ rev **x** ⌘ Current version: **3.5.0** ⌘

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

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

Title:	⌘	Requirements for out-of-synchronisation handling of output power during DTX
Source:	⌘	RAN WG4
Work item code: ⌘		**Date:** ⌘ 23-26 Jan 2001
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:	⌘	WG1 Specification, TS25.224, has specified procedures for use of Special Bursts during DTX and has clarified the processing of these bursts to support Out-of-Sync Handling of output power. In prior version the test conditions used when testing the UE transmit power requirements did not include DTX.
Summary of change:	⌘	Include DTX in the test conditions used when testing UE transmit power requirements.
Consequences if not approved:	⌘	Test conditions are incomplete.

Clauses affected:	⌘	6.4.3
Other specs Affected:	⌘	☐ Other core specifications ⌘ ☐ 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}, Q_{sbout} and Q_{sbin} specify at what DPCH quality levels the UE shall shut its power off and when it shall turn its 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 for continuous transmission

The parameters in Table 6.4-a 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-a: DCH parameters for test of Out-of-synch handling – continuous transmission

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

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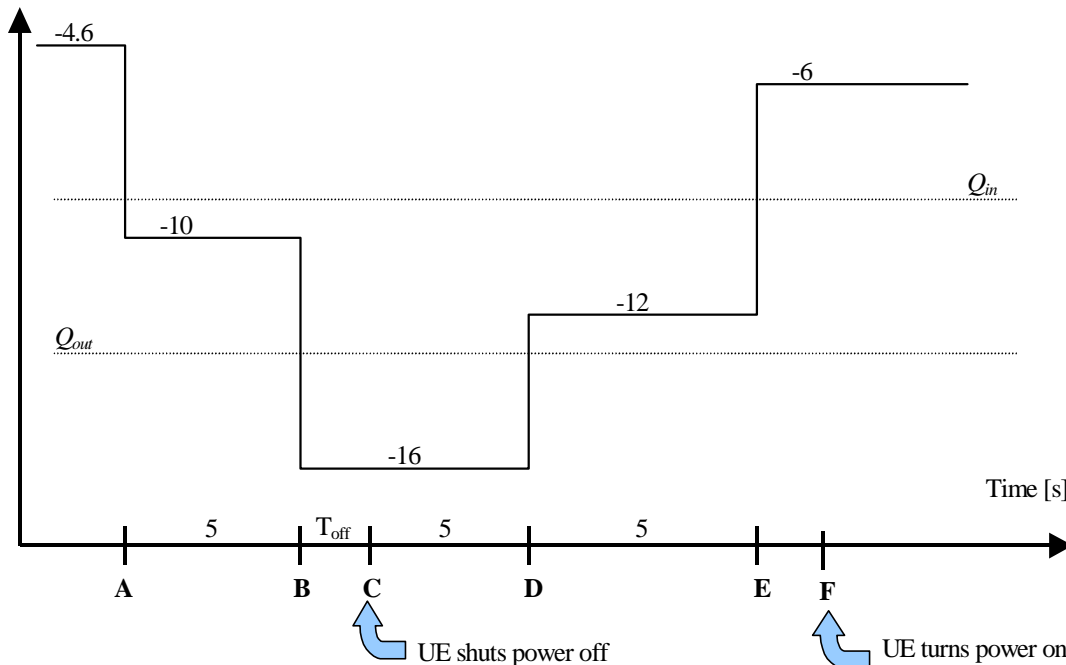

Figure 6.1-a. Conditions for out-of-synch handling in the UE. The indicated thresholds Q_{out} and Q_{in} are only informative – continuous transmission.

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 $T_{off} = 200$ ms after point B
3. The UE shall not turn its transmitter on between points C and E.
4. The UE shall turn its transmitter on before point F, which is $T_{on} = 200$ ms after Point E.

6.4.3.2   Requirement for discontinuous transmission

During DTX, there are periods when the UE will receive no data from the UTRAN. As specified in TS 25.224, in order to keep synchronization, Special Bursts shall be transmitted by the UTRAN during these periods of no data.

This test shall be done during a period of no data transmission. During this period, the conditions for when the UE shall shut its transmitter on or off are defined by the power level of the received Special Bursts, as defined in Figure 6.1-b.

The conditions for the performance requirement are as follows:

The handover triggering level shall be set very high to ensure that the beacon channel power never exceeds the value of 10dB above it. Therefore the averaging time for signal quality will always be 160 milliseconds.

The UTRAN transmits Special Bursts as specified in TS 25.224. The Special Burst Scheduling Parameter, SBSP = 4, which means that UTRAN sends a Special Burst at every fourth frame with no data. Therefore, the UTRAN sends a Special Burst in the first frame without data transmission, followed by 3 frames with no transmission; followed by a Special Burst, etc.

The DCH parameters are shown in Table 6.4-b. While the normal data is transmitted using two channelization codes, the Special Burst is transmitted with only one channelization code. Therefore the total energy per chip during Special Bursts is 3 dB lower than for continuous data transmission. The Special Bursts are represented by "SBs" in the figure.

Table 6.4-b: DCH parameters for test of Out-of-synch handling – discontinuous transmission

Parameter	Unit	Value
$\hat{I}_{or}/I_{oc}$	dB	-1
I_{oc}	dBm/3.84 MHz	-60
$\dfrac{\Sigma DPCH\_E_c}{I_{or}}$	dB	See figure 6.1-b
Bits/burst (including TFCI bits)	bits	244
TFCI	-	On

During the period of 3 frames with no data, the UE will receive a very low power, which is not shown in the figure. The power shown in the figure is the power of the Special Burst (which is 3dB lower than power for normal data, which is shown in Figure 6.1-a).
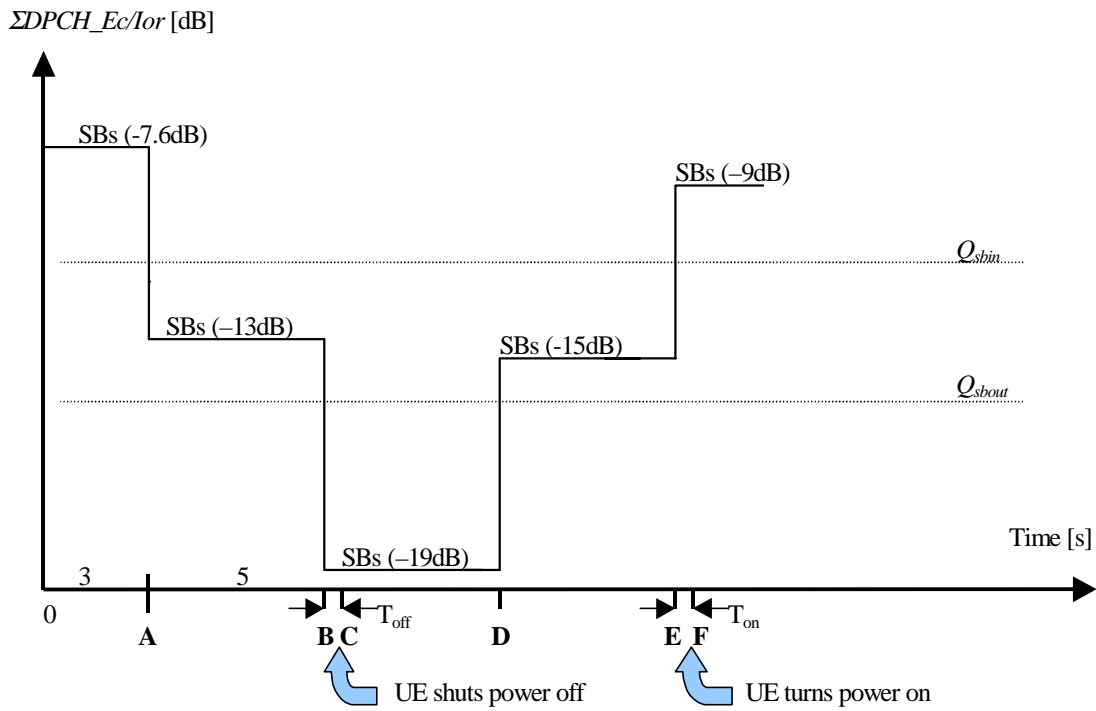
Figure 6.1-b. Conditions for out-of-synch handling in the UE - discontinuous transmission. The indicated thresholds Q_{sbout} and Q_{sbin} are only informative.

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

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CHANGE REQUEST

| ⌘ | **25.102** CR **43** | ⌘ rev **-** ⌘ | Current version: | **3.5.0** | ⌘ |

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

Title:	⌘	UE Power Control Accuracy

Source:	⌘	RAN WG4

Work item code: ⌘		*Date:* ⌘	23 Jan, 2001

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:* ⌘ | 6.4.1.2: The existing accuracy requirement for controlled input does not include all variables in the open loop power equation.

6.4.1.3: Test notes not appropriate in core specification. |
|---|---|

| *Summary of change:* ⌘ | 6.4.1.2: Power control error due to change in I_{BTS} and DPCH Constant value is added to SIR_{TARGET} error.

6.4.1.3: Note referring to testing is deleted. |
|---|---|

| *Consequences if not approved:* ⌘ | 6.4.1.2: Power control accuracy would not be correct.

6.4.1.3: Conformance test group responsible for determining test needs . |
|---|---|

Clauses affected:	⌘	6.4.1.2, 6.4.1.3

Other specs affected:	⌘ ☐	Other core specifications	⌘	
	☐	Test specifications		
	☐	O&M Specifications		

| *Other comments:* | ⌘ | 6.4.1.2: WG4 recommends not to test power control error due to changes in I_{BTS} or DPCH Constant Value as testing against SIR_{TARGET} is sufficient.

6.4.1.3: WG4 recommends not to test this requirement explicitly. This requirement is tested as part of step accuracy error in section 6.4.1.2 and the PCCPCH RSCP measurement error in 25.123. |
|---|---|---|

How to create CRs using this form:

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 signalling 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. The power control error resulting from a change in I_{BTS} or DPCH Constant Value shall not exceed the values defined in Table 6.3.

Table 6.3: Transmitter power step tolerance as a result of control power step

$\Delta SIR_{TARGET \, [dB]}$	Transmitter power step tolerance [dB]
$\Delta SIR_{TARGET} \leq 1$	± 0.5
$1 < \Delta SIR_{TARGET} \leq 2$	± 1
$2 < \Delta SIR_{TARGET} \leq 3$	± 1.5
$3 < \Delta SIR_{TARGET} \leq 10$	± 2
$10 < \Delta SIR_{TARGET} \leq 20$	± 4
$20 < \Delta SIR_{TARGET} \leq 30$	± 6
$30 < \Delta SIR_{TARGET}$	± 9 [(1)]

(1) Value is given for normal conditions. For extreme conditions value is ± 12

6.4.1.3   Differential accuracy, measured input

The power control differential accuracy, measured input, is defined as the error in UE transmitter power step change as a result of a step change in path loss $L_{PCCPCH.}$

The error shall not exceed the sum of the following two errors:

-       The power control error, resulting from a change in the path loss (ΔL_{PCCPCH}), the same tolerances as defined in table 6.3 shall apply,

-       and the errors in the PCCPCH RSCP measurement as defined in TS 25.123.

<div style="text-align:right">*CR-Form-v3*</div>

CHANGE REQUEST

| ⌘ | **25.102 CR 44** | ⌘ rev | **-** | ⌘ | Current version: | **3.5.0** | ⌘ |

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

Title: ⌘	Correction of version number of the ITU-R Recommendation SM.329	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 2001-01-24
Category: ⌘ **F**		***Release:*** ⌘ R99

Use one of the following categories:	*Use one of the following releases:*
F *(essential correction)*	*2 (GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	*R96 (Release 1996)*
B *(Addition of feature),*	*R97 (Release 1997)*
C *(Functional modification of feature)*	*R98 (Release 1998)*
D *(Editorial modification)*	*R99 (Release 1999)*
Detailed explanations of the above categories can	*REL-4 (Release 4)*
be found in 3GPP TR 21.900.	*REL-5 (Release 5)*

Reason for change: ⌘	The spurious emission limits incorporated in the specification were taken from a draft version of SM.329-8 but this version could not be used as a reference until it was published. This version 8 has now been published.
Summary of change: ⌘	References to SM.329-7 changed to SM.329-8.
Consequences if not approved: ⌘	Difficulties with regional radio equipment regulation procedures

Clauses affected: ⌘	6.6.3	
Other specs affected: ⌘	☐ Other core specifications ⌘	
	☐ Test specifications	
	☐ O&M Specifications	
Other comments: ⌘		

6.6.3 Spurious emissions

Spurious emissions are emissions which are caused by unwanted transmitter effects such as harmonics emission, parasitic emission, intermodulation products and frequency conversion products, but exclude out of band emissions.

The frequency boundary and the detailed transitions of the limits between the requirement for out band emissions and spectrum emissions are based on ITU-R Recommendation SM.329-87 .