

**TSG-RAN Meeting #12
Stockholm, Sweden, 12 - 15 June 2001**

RP-010361

Title: Agreed CRs (Release 4) to TS 25.105

Source: TSG-RAN WG4

Agenda item: 8.4.4

WG4 doc	Status WG4	Spec	CR	Phase	Title	Cat	V old	V new
R4-010240	agreed	25.105	53	Rel-4	Differential accuracy of P-CCPCH power	B	4.0.0	4.1.0
R4-010551	agreed	25.105	60	Rel-4	Clarification of transmit intermodulation requirements	F	4.0.0	4.1.0
R4-010683	agreed	25.105	61	Rel-4	BS EVM definition correction	F	4.0.0	4.1.0
R4-010799	agreed	25.105	64	Rel-4	Application of blocking requirement for 1.28 Mcps TDD	F	4.0.0	4.1.0
R4-010794	agreed	25.105	65	Rel-4	Correction to upper frequency of transmitter spurious emission limits for 1.28 Mcps TDD	F	4.0.0	4.1.0

Gothenburg, Sweden 21st - 25th May 2001

CR-Form-v3

CHANGE REQUEST⌘ **25.105 CR 53** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘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:	⌘ Differential accuracy of P-CCPCH power		
Source:	⌘ RAN WG4		
Work item code:	⌘ TEI4	Date:	⌘ 23.02.2001
Category:	⌘ B	Release:	⌘ REL-4
	Use <u>one</u> of the following categories:		Use <u>one</u> 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 be found in 3GPP TR 21.900.		REL-4 (Release 4)
			REL-5 (Release 5)

Reason for change:	⌘ To assure the system performance of TDD there is need to define differential accuracy for PCCPCH transmission power.
Summary of change:	⌘ Differential accuracy of PCCPCH power is defined.
Consequences if not approved:	⌘ The performance of TDD system will be decreased if this definition is not made.

Clauses affected:	⌘ New chapters: 6.4.6 and 6.4.6.1	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘ 25.142
	<input checked="" type="checkbox"/> Test specifications	
	<input type="checkbox"/> O&M Specifications	
Other comments:	⌘	

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- 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.

CHANGE REQUEST

⌘ **25.105** **CR 60** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

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 transmit intermodulation requirements		
Source:	⌘ RAN WG4		
Work item code:	⌘ TEI4	Date:	⌘ 18. Apr. 2001
Category:	⌘ F	Release:	⌘ REL-4
	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:	⌘ Contradictory statements to transmit intermodulation for 1.28 Mcps TDD option
Summary of change:	⌘ The frequencys of the interference signals are defined for 3.84 Mcps TDD option and 1.28 Mcps TDD option seperatly(see TDOCs R4-010291 and RP-010097)
Consequences if not approved:	⌘ Contradictory statements to transmit intermodulation for 1.28 Mcps TDD option

Clauses affected:	⌘ 6.7.												
Other specs affected:	<table border="0"> <tr> <td>⌘ <input type="checkbox"/></td> <td>Other core specifications</td> <td>⌘</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Test specifications</td> <td></td> <td>25.142</td> </tr> <tr> <td><input type="checkbox"/></td> <td>O&M Specifications</td> <td></td> <td></td> </tr> </table>	⌘ <input type="checkbox"/>	Other core specifications	⌘		<input checked="" type="checkbox"/>	Test specifications		25.142	<input type="checkbox"/>	O&M Specifications		
⌘ <input type="checkbox"/>	Other core specifications	⌘											
<input checked="" type="checkbox"/>	Test specifications		25.142										
<input type="checkbox"/>	O&M Specifications												
Other comments:	⌘												

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- 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.

6.7 Transmit intermodulation

The transmit intermodulation performance is a measure of the capability of the transmitter to inhibit the generation of signals in its non linear elements caused by presence of the wanted signal and an interfering signal reaching the transmitter via the antenna.

The transmit intermodulation level is the power of the intermodulation products when a CDMA modulated interference signal is injected into the antenna connector at a level of 30 dB lower than that of the subject signal. ~~The frequency of the interference signal shall be ± 5 MHz, ± 10 MHz and ± 15 MHz offset from the subject signal.~~

6.7.1 Minimum Requirement

6.7.1.1 3,84 Mcps TDD Option

The frequency of the interference signal shall be ± 5 MHz, ± 10 MHz and ± 15 MHz offset from the subject signal. The Transmit intermodulation level shall not exceed the out of band or the spurious emission requirements of section 6.6.2 and 6.6.3.

6.7.1.2 1,28 Mcps TDD Option:

The frequency of the interference signal shall be ± 1.6 MHz, ± 3.2 MHz and ± 4.8 MHz offset from the subject signal. The Transmit intermodulation level shall not exceed the out of band or the spurious emission requirements of section 6.6.2 and 6.6.3.

Gothenburg, Sweden 21st - 25th May 2001

CR-Form-v4

CHANGE REQUEST⌘ **25.105 CR 61** ⌘ ev **-** ⌘ Current version: **4.0.0** ⌘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:	⌘ BS EVM definition correction		
Source:	⌘ RAN WG4		
Work item code:	⌘ TEI4	Date:	⌘ 22.05.2001
Category:	⌘ F	Release:	⌘ REL-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (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 be found in 3GPP TR_21_900.		REL-4 (Release 4)
			REL-5 (Release 5)

Reason for change: ⌘ Current definition of EVM does not take into account 1.28 Mcps TDD option.**Summary of change:** ⌘ The definition is corrected to take into account both modes.**Consequences if not approved:** ⌘ Ambiguity and errors in the EVM definition may lead to non-consistent measurement results.**Clauses affected:** ⌘ 6.8.2

Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘	
	<input checked="" type="checkbox"/> Test specifications		TS 25.142
	<input type="checkbox"/> 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:

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- 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 requests.

6.8.2 Modulation Accuracy

The Error Vector Magnitude is a measure of the difference between the reference waveform and the measured waveform. This difference is called the error vector. Both waveforms pass through a matched Root Raised Cosine filter with bandwidth ~~3,84 MHz~~ corresponding to the considered chip rate and roll-off $\alpha = 0,22$. Both waveforms are then further modified by selecting the frequency, absolute phase, absolute amplitude and chip clock timing so as to minimise the error vector. The EVM result is defined as the square root of the ratio of the mean error vector power to the mean reference power expressed as a %. The measurement interval is one timeslot. See Annex B of TS 34.122 for further details.

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CHANGE REQUEST

⌘ **25.105 CR 64** ⌘ ev **-** ⌘ Current version: **4.0.0** ⌘

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:	⌘ Application of blocking requirement for 1.28 Mcps TDD		
Source:	⌘ RAN WG4		
Work item code:	⌘ LCRTDD-RF	Date:	⌘ 21.05.2001
Category:	⌘ F	Release:	⌘ REL-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (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 be found in 3GPP TR 21.900 .		REL-4 (Release 4)
			REL-5 (Release 5)

Reason for change:	⌘ Missing additional blocking requirement for 1.28 Mcps TDD option in case of co-siting with GSM900 and DCS1800.
Summary of change:	⌘ 1- Correction of blocking requirement in band b) and c) for 1.28Mcps option. 2-Tightening of receiver blocking requirement for co-existence with GSM/DCS and co-located base stations. The co-location band with GSM900 is also modified to include R-GSM band.
Consequences if not approved:	⌘ 1- Wrong implementation of the specifications. 2- Blocking of GSM/DCS system due to interference from 1.28 Mcps TDD option.

Clauses affected:	⌘ 7.5.0.2, 7.5.1.2		
Other specs Affected:	⌘ <input type="checkbox"/> Other core specifications	⌘	
	<input checked="" type="checkbox"/> Test specifications		25.142
	<input type="checkbox"/> O&M Specifications		
Other comments:	⌘		

7.5.0.2 1,28 Mcps TDD Option

Table 7.4A(a): Blocking requirements for operating bands defined in 5.2(a)

Center Frequency of Interfering Signal	Interfering Signal Level	Wanted Signal Level	Minimum Offset of Interfering Signal	Type of Interfering Signal
1900 – 1920 MHz, 2010 – 2025 MHz	-40 dBm	<REFSENS> + 6 dB	3.2MHz	Narrow band CDMA signal with one code
1880 – 1900 MHz, 1990 – 2010 MHz, 2025 – 2045 MHz	-40dBm	<REFSENS> + 6 dB	3.2MHz	Narrow band CDMA signal with one code
1920 – 1980 MHz	-40dBm	<REFSENS> + 6 dB	3.2MHz	Narrow band CDMA signal with one code
1 – 1880 MHz, 1980 – 1990 MHz, 2045 – 12750 MHz	-15dBm	<REFSENS> + 6 dB	—	CW carrier

Table 7.4A(b): Blocking requirements for operating bands defined in 5.2(b)

Center Frequency of Interfering Signal	Interfering Signal Level	Wanted Signal Level	Minimum Offset of Interfering Signal	Type of Interfering Signal
1850 – 1990 MHz	-40dBm	<REFSENS> + 6 dB	3.2MHz	Narrow band CDMA signal with one code
1830 – 1850 MHz, 1990 – 2010 MHz	-40 dBm	<REFSENS> + 6 dB	3.2MHz	Narrow band CDMA signal with one code
1 – 1830 MHz, 2010 – 12750 MHz	-15-40 dBm	<REFSENS> + 6 dB	—	CW carrier

Table 7.4A(c): Blocking requirements for operating bands defined in 5.2(c)

Center Frequency of Interfering Signal	Interfering Signal Level	Wanted Signal Level	Minimum Offset of Interfering Signal	Type of Interfering Signal
1910 – 1930 MHz	-40dBm	<REFSENS> + 6 dB	3.2MHz	Narrow band CDMA signal with one code
1890 – 1910 MHz, 1930 – 1950 MHz	-40dBm	<REFSENS> + 6 dB	3.2 MHz	Narrow band CDMA signal with one code
1 – 1890 MHz, 1950 – 12750 MHz	-15-40 dBm	<REFSENS> + 6 dB	—	CW carrier

NEXT CHANGED SECTION

7.5.1.2 1,28 Mcps TDD Option

(void)

Table 7.4 (f): Additional blocking requirements for operating bands defined in 5.2(a) when co-located with GSM900

<u>Centre Frequency of Interfering Signal</u>	<u>Interfering Signal Level</u>	<u>Wanted Signal Level</u>	<u>Minimum Offset of Interfering Signal</u>	<u>Type of Interfering Signal</u>
921 – 960 MHz	+16 dBm	<REFSENS> + 6 dB	=	CW carrier

Table 7.4 (g): Additional blocking requirements for operating bands defined in 5.2(a) when co-located with DCS1800

<u>Center Frequency of Interfering Signal</u>	<u>Interfering Signal Level</u>	<u>Wanted Signal Level</u>	<u>Minimum Offset of Interfering Signal</u>	<u>Type of Interfering Signal</u>
1805 – 1880	+16 dBm	<REFSENS> + 6 dB	=	CW carrier

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CHANGE REQUEST
 ⌘ **25.105** **CR 65** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

 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 of reference to SM.329-8		
Source:	⌘ RAN WG4		
Work item code:	⌘ LCRTDD-RF	Date:	⌘ 31. May. 2001
Category:	⌘ F	Release:	⌘ REL-4
	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:	⌘ The transmitter spurious emission limits incorporated in the specification for 1.28 Mcps TDD option 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 are corrected to point at the relevant parts of SM329-8. An obvious error (upper frequency should be 12.75 GHz instead of 12.5 GHz) in last row of table 6.11A is also corrected
Consequences if not approved:	⌘ Difficulties with regional radio equipment regulation procedures.

Clauses affected:	⌘ 6.6.3.1.1.1.2 ; 6.6.3.1.2.1.2		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input checked="" type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	25.142
Other comments:	⌘ Re-draft of Tdoc R4-010550 which reflects only the R4 Cat F changes of Tdoc R4-010550.		

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- 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.

6.6.3 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. This is measured at the base station RF output port.

Unless otherwise stated, all requirements are measured as mean power.

6.6.3.1 Mandatory Requirements

The requirements of either subclause 6.6.3.1.1 or subclause 6.6.3.1.2 shall apply whatever the type of transmitter considered (single carrier or multi-carrier). It applies for all transmission modes foreseen by the manufacturer's.

6.6.3.1.1 Spurious emissions (Category A)

The following requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329-8 [1], are applied.

6.6.3.1.1.1 Minimum Requirement

6.6.3.1.1.1.1 3,84 Mcps TDD Option

Either requirement applies at frequencies within the specified frequency ranges which are more than 12.5MHz under the first carrier frequency used or more than 12.5 MHz above the last carrier frequency used. The power of any spurious emission shall not exceed:

Table 6.10: BS Mandatory spurious emissions limits, Category A

Band	Minimum requirement	Measurement Bandwidth	Note
9kHz – 150kHz	-13 dBm	1 kHz	Bandwidth as in ITU SM.329-8, s4.1
150kHz – 30MHz		10 kHz	Bandwidth as in ITU SM.329-8, s4.1
30MHz – 1GHz		100 kHz	Bandwidth as in ITU SM.329-8, s4.1
1GHz – 12.75 GHz		1 MHz	Upper frequency as in ITU SM.329-8, s2.5 table 1

6.6.3.1.1.1.2 1,28 Mcps TDD Option

Either requirement applies at frequencies within the specified frequency ranges which are more than 4MHz under the first carrier frequency used or more than 4 MHz above the last carrier frequency used. The power of any spurious emission shall not exceed:

Table 6.10A: BS Mandatory spurious emissions limits, Category A

Band	Minimum requirement	Measurement Bandwidth	Note
9kHz – 150kHz	-13 dBm	1 kHz	Bandwidth as in ITU SM.329-78, s4.1
150kHz – 30MHz		10 kHz	Bandwidth as in ITU SM.329-78, s4.1
30MHz – 1GHz		100 kHz	Bandwidth as in ITU SM.329-78, s4.1
1GHz – 12.75 GHz		1 MHz	Upper frequency as in ITU SM.329-78, s2.65 table 1

NOTE: only the measurement bands are different according to the occupied bandwidth.

6.6.3.1.2 Spurious emissions (Category B)

----- end of changed section-----

----- next section changed-----

6.6.3.1.2.1.2 1,28 Mcps TDD Option:

either requirement applies at frequencies within the specified frequency ranges which are more than 4MHz under the first carrier frequency used or more than 4 MHz above the last carrier frequency used. The power of any spurious emission shall not exceed:

Table 6.11A: BS Mandatory spurious emissions limits, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz – 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU SM.329-78, s4.1
150kHz – 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU SM.329-78, s4.1
30MHz – 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU SM.329-78, s4.1
1GHz ↔ Fc1-19.2 MHz or Fl -3.2 MHz <i>whichever is the higher</i>	-30 dBm	1 MHz	Bandwidth as in ITU SM.329-78, s4.1
Fc1 – 19.2 MHz or Fl -3.2MHz <i>whichever is the higher</i> ↔ Fc1 - 16 MHz or Fl -3.2 MHz <i>whichever is the higher</i>	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-78, s4.1
Fc1 - 16 MHz or Fl -3.2 MHz <i>whichever is the higher</i> ↔ Fc2 + 16 MHz or Fu +3.2 MHz <i>whichever is the lower</i>	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-78, s4.1
Fc2 + 16 MHz or Fu + 3.2MHz <i>whichever is the lower</i> ↔ Fc2 +19.2 MHz or Fu + 3.2MHz <i>whichever is the lower</i>	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-78, s4.1
Fc2 + 19.2 MHz or Fu +3.2 MHz <i>whichever is the lower</i> ↔ 12,75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-78, s4.1. Upper frequency as in ITU-R SM.329-78, s2.65 table 1

Fc1: Center frequency of emission of the first carrier transmitted by the BS

Fc2: Center frequency of emission of the last carrier transmitted by the BS

Fl : Lower frequency of the band in which TDD operates

Fu : Upper frequency of the band in which TDD operates

----- END of CHANGES-----