TSG-RAN Meeting #6 *TSGRP#6(99)780*
Nice, France, 13 – 15 December 1999

Title: **Agreed CRs of category "C" (Modifications) and "F" (Corrections) to TS 25.105**

Source: **TSG-RAN WG4**

Agenda item: **5.4.3**

TSG_DOC	SPEC	CR	RE	3G_P	SUBJECT	CAT	VERS_CU	VERS_NE
R4-99695	25.105	001		R99	Corrections to 25.105 version 3.0.0	F	3.0.0	3.1.0
R4-99763	25.105	004		R99	Receiver spurious emissions for BS TDD	C	3.0.0	3.1.0
R4-99764	25.105	005		R99	Power control in UTRA TDD	C	3.0.0	3.1.0
R4-99864	25.105	002	2	R99	TDD Base station power accuracy of PCCPCH (remove [ ])	C	3.0.0	3.1.0
R4-99866	25.105	007		R99	Change of propagation conditions recommendations	C	3.0.0	3.1.0
R4-99884	25.105	008		R99	Timing Advance Requirements	F	3.0.0	3.1.0
R4-99892	25.105	011		R99	Corrections for BS TDD Blocking Characteristics	F	3.0.0	3.1.0
R4-99898	25.105	012		R99	Corrections to 25.105 v.3.0.0 (change ME to BTS)	F	3.0.0	3.1.0
R4-99944	25.105	013		R99	Synchronization Requirement	C	3.0.0	3.1.0
R4-99961	25.105	014		R99	Update of ITU Region 2 Specific Specifications and proposed universal channel numbering	C	3.0.0	3.1.0
R4-99971	25.105	015		R99	Clarification of Antenna Diversity receiver requirements	F	3.0.0	3.1.0
R4-99973	25.105	016		R99	Spurious Emission in 25.105	F	3.0.0	3.1.0
R4-99980	25.105	017		R99	ACLR	C	3.0.0	3.1.0

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Sophia Antipolis, France, 26-29 October 1999

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or for SMG, use the format P-99-xxx

CHANGE REQUEST

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25.105	CR	001	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	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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 [X] Core Network [ ]
(at least one should be marked with an X)

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

Subject: Corrections to 25.105 v.3.0.0

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: 25.105 version 3.0.0 includes some minor mistakes that need to be corrected.

Clauses affected: 6.6.3.1.1.1, 6.6.3.2.2.1, A.2.5.2

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments: Based on 3GPP WG4 Tdoc (99) 695

6.5.1 Minimum Requirement

The requirement of transmit OFF power shall be better than –33dBm measured with a filter that has a Root Raised Cosine (RRC) filter ~~responcse~~ response with a roll off α=0.22 and a bandwidth equal to the chip rate.

6.6.3.1.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.3: BS Mandatory spurious emissions limits, Category A

Band	Minimum requirement	Measurement Bandwidth	Note
9kHz – 150kHz	-13 dBm	1 kHz	Bandwidth as in ITU SM.329-7, s4.1
150kHz – 30MHz		10 kHz	Bandwidth as in ITU SM.329-7, s4.1
30MHz – 1GHz		100 kHz	Bandwidth as in ITU SM.329-7, s4.1
1GHz – 12.75 GHz		1 MHz	Upper frequency as in ITU SM.329-7, s2.6

~~P = Mean power (W) where P < 500W~~

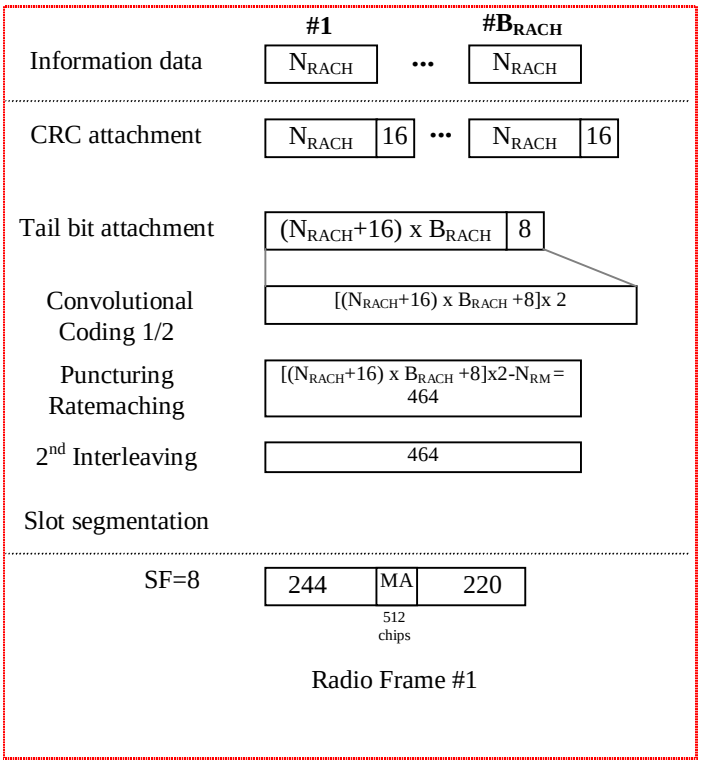
6.6.3.2.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.6: BS Spurious emissions limits for protection of the BS receiver

Band	Maximum Level	Measurement Bandwidth	Note
~~921 – 960~~876 – 915 MHz	–[98]dBm	100 kHz	

A.2.5.2 RACH mapped to 1 code SF8



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25.105	CR	002r2	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	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		For information		non-strategic		

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: *(at least one should be marked with an X)*

USIM		ME		UTRAN / Radio	X	Core Network	

Source: InterDigital **Date:** 7.12.99

Subject: TDD Base station power accuracy of PCCPCH

Work item:

Category: *(only one category Shall be marked With an X)*

F	Correction		
A	Corresponds to a correction in an earlier release		
B	Addition of feature		
C	Functional modification of feature	X	
D	Editorial modification		

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change: Missing accuracy requirements

Clauses affected: 6.4.7

Other specs Affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

6.4.7 ~~Perch channel~~Primary CCPCH power

~~<The name and the use of the common control channel may need to be adapted , subject to WG1 definition.>~~

Primary CCPCH power is the transmission power of the common control physical channel averaged over the transmit timeslot. Primary CCPCH power is signalled over the BCH.

The error between the BCH-broadcast value of the Primary CCPCH power and the Primary CCPCH power shall not exceed the values in table 6.x

Table 6.x: Errors between Primary CCPCH power and the broadcast value

Total power in slot, dB	PCCPCH power tolerance
Pmax-3 < P ≤ Pmax	[+/- 2.5 dB]
Pmax-6 < P ≤ Pmax-3	[+/- 3.5 dB]
Pmax-13 < P ≤ Pmax-6	[+/- 5 dB]

6.5 Transmit OFF power

The transmit OFF power state is when the BS does not transmit. This parameter is defined as maximum output transmit power within the channel bandwidth when the transmitter is OFF.

6.5.1 Minimum Requirement

The requirement of transmitOFF power shall be better than –33dBm measured with a filter that has a Root Raised Cosine (RRC) filter responcse with a roll off α=0.22 and a bandwidth equal to the chip rate.

6.6 Output RF spectrum emissions

6.6.1 Occupied bandwidth

Occupied bandwidth is a measure of the bandwidth containing 99% of the total integrated power for transmitted spectrum and is centered on the assigned channel frequency. The occupied channel bandwidth is less than 5 MHz based on a chip rate of 3.84 Mcps.

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

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CHANGE REQUEST

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25.105	CR	004	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	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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 [X] Core Network [ ]
(at least one should be marked with an X)

Source: 3GPP TSG-RAN WG4 **Date:**

Subject: Power control in UTRA TDD

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	X
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change: Alignment dur to changes in 3GPP RAN WG1 specification TS 25.224 Version 2.0.1 (renaming of ‘closed’ and ‘open’ to ‘inner’ and ‘outer’ loop; removal of section ‘Total power dynamic range’ and of section ‘Power control cycles per second’)

Clauses affected: 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.4.5, 6.4.6

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments: Based on 3GPP RAN WG4 Tdoc (99) 627

6 Transmitter characteristics

6.1 General

Unless detailed the transmitter characteristic are specified at the antenna connector.

6.2 Base station output power

Output power, Pout, of the base station is the mean power of one carrier delivered to a load with resistance equal to the nominal load impedance of the transmitter during one slot.

6.2.1 Base station maximum output power

Maximum output power, Pmax, of the base station is the mean power level per carrier that the manufacturers has declared to be available at the antenna connector.

6.2.1.1 Minimum Requirement

In normal conditions, the base station maximum output power shall remain within +2 dB and –2 dB of the manufacturer's rated power.

In extreme conditions, the Base station maximum output power shall remain within +2.5 dB and –2.5 dB of the manufacturer's rated power.

6.3 Frequency stability

Frequency stability is ability of the BS to transmit at the assigned carrier frequency.

6.3.1 Minimum Requirement

The modulated carrier frequency of the BS shall be accurate to within ± 0.05 PPM for RF frequency generation.

6.4 Output power dynamics

Power control is used to limit the interference level. The transmitter uses a quality-based power control on the downlink.

6.4.1 ~~Closed~~ Inner loop power control

~~Closed~~ Inner loop power control is the ability of the BS transmitter to adjust its output power in response to the UL received signal.

For ~~closed~~ Inner loop correction on the Downlink Channel ~~(with respect to the open loop estimate)~~, the base station adjusts its mean output power level in response to each valid power control bit received from the UE on the Uplink Traffic Channel. Inner loop control is based on SIR measurements at the UE receiver and the corresponding TPC commands are generated by the UE

6.4.2 Power control steps

The power control step is the step change in the DL transmitter output power in response to a TPC message from the UE.

6.4.2.1 Minimum Requirement

Down link (DL) 1, 2, 3 dB

The tolerance of the transmitter output power and the greatest average rate of change in mean power due to the power control step shall be within the range shown in Table 6.1.

Table 6.1: power control step size tolerance

Step size	Tolerance	Range of average rate of change in mean power per 10 steps	
		minimum	maximum
1dB	+/-0.5dB	+/-8dB	+/-12dB
2dB	+/-0.75dB	+/-16dB	+/-24dB
3dB	+/-1dB	+/-24dB	+/-36dB

6.4.3 Power control dynamic range

The power control dynamic range is the difference between the maximum and the minimum transmit output power for a specified reference condition

6.4.3.1 Minimum Requirement

Down link (DL) power control dynamic range 30 dB

6.4.4 Minimum transmit power

The minimum controlled output power of the BS is when the power control setting is set to a minimum value. This is when the power control indicates a minimum transmit output power is required.

6.4.4.1 Minimum Requirement

Down link (DL) minimum transmit power is set to: Maximum output power – 30dB

~~6.4.5 Total power dynamic range~~

~~The power control dynamic range is difference between the maximum and the minimum transmit output power for a specified reference condition~~

~~6.4.5.1 Minimum Requirement~~

~~Down link (DL) total dynamic range 30 dB~~

~~<This requirement is redundant, since 6.4.4 defines the same dynamic range by a minimum transmit power.>~~

~~6.4.6 Power control cycles per second~~

~~The rate of change for DL transmitter power control step.~~

~~6.4.6.1 Minimum Requirement~~

~~The rate of change for the DL transmitter power control step is a s follows: 100 – 800 Hz.~~

~~The minimum rate of [100] Hz is to ensure that every frame is power controlled. The maximum rate may differ for open and closed loop power control due to frame configuration.~~

6.4.7 Perch channel power

<The name and the use of the common control channel may need to be adapted , subject to WG1 definition.>

3GPPTSG-RAN WG4 Meeting #8
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25.105	CR	005	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 *list expected approval meeting # here ↑*

for approval	X	strategic		*(for SMG use only)*
for information		non-strategic		

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: *(at least one should be marked with an X)* (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]

Source: 3GPP TSG-RAN WG4 **Date:**

Subject: Power control in UTRA TDD

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature	X		Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Alignment dur to changes in 3GPP RAN WG1 specification TS 25.224 Version 2.0.1 (renaming of ‘closed’ and ‘open’ to ‘inner’ and ‘outer’ loop; removal of section ‘Total power dynamic range’ and of section ‘Power control cycles per second’)

Clauses affected: 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.4.5, 6.4.6

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments: Based on 3GPP RAN WG4 Tdoc (99) 627

6 Transmitter characteristics

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Unless detailed the transmitter characteristic are specified at the antenna connector.

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Output power, Pout, of the base station is the mean power of one carrier delivered to a load with resistance equal to the nominal load impedance of the transmitter during one slot.

6.2.1 Base station maximum output power

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6.2.1.1 Minimum Requirement

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6.3 Frequency stability

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6.3.1 Minimum Requirement

The modulated carrier frequency of the BS shall be accurate to within ± 0.05 PPM for RF frequency generation.

6.4 Output power dynamics

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~~Closed~~ Inner loop power control is the ability of the BS transmitter to adjust its output power in response to the UL received signal.

For ~~closed~~ Inner loop correction on the Downlink Channel ~~(with respect to the open loop estimate)~~, the base station adjusts its mean output power level in response to each valid power control bit received from the UE on the Uplink Traffic Channel. Inner loop control is based on SIR measurements at the UE receiver and the corresponding TPC commands are generated by the UE

6.4.2 Power control steps

The power control step is the step change in the DL transmitter output power in response to a TPC message from the UE.

6.4.2.1 Minimum Requirement

Down link (DL) 1, 2, 3 dB

The tolerance of the transmitter output power and the greatest average rate of change in mean power due to the power control step shall be within the range shown in Table 6.1.

Table 6.1: power control step size tolerance

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2dB	+/-0.75dB	+/-16dB	+/-24dB
3dB	+/-1dB	+/-24dB	+/-36dB

6.4.3 Power control dynamic range

The power control dynamic range is the difference between the maximum and the minimum transmit output power for a specified reference condition

6.4.3.1 Minimum Requirement

Down link (DL) power control dynamic range 30 dB

6.4.4 Minimum transmit power

The minimum controlled output power of the BS is when the power control setting is set to a minimum value. This is when the power control indicates a minimum transmit output power is required.

6.4.4.1 Minimum Requirement

Down link (DL) minimum transmit power is set to: Maximum output power – 30dB

~~6.4.5 Total power dynamic range~~

~~The power control dynamic range is difference between the maximum and the minimum transmit output power for a specified reference condition~~

~~6.4.5.1 Minimum Requirement~~

~~Down link (DL) total dynamic range 30 dB~~

~~<This requirement is redundant, since 6.4.4 defines the same dynamic range by a minimum transmit power.>~~

~~6.4.6 Power control cycles per second~~

~~The rate of change for DL transmitter power control step.~~

~~6.4.6.1 Minimum Requirement~~

~~The rate of change for the DL transmitter power control step is a s follows: 100 – 800 Hz.~~

~~The minimum rate of [100] Hz is to ensure that every frame is power controlled. The maximum rate may differ for open and closed loop power control due to frame configuration.~~

6.4.7 Perch channel power

<The name and the use of the common control channel may need to be adapted , subject to WG1 definition.>

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Bath, UK, 7-10 December 1999

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25.105	CR	007	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	for approval	X	Strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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: *(at least one should be marked with an X)* (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]

Source: InterDigital **Date:** 7.12.99

Subject: Change of propagation conditions

Work item:

Category: *(only one category Shall be marked With an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature	X		Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Adapt test requirements to better match ITU recommendations

Clauses affected: Annex B

Other specs Affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments: Based on 3GPP WG4 Tdoc R4-99675 as modified by WG4.

Annex B (normative): Propagation conditions

B.1 Static propagation condition

The propagation for the static performance measurement is an Additive White Gaussian Noise (AWGN) environment. No fading and multi-paths exist for this propagation model.

B.2 Multi-path fading propagation conditions

Table B1 shows propagation conditions that are used for the performance measurements in multi-path fading environment. All taps have classical Doppler spectrum.

Table B1: Propagation Conditions for Multi path Fading Environments

Case 1, speed 3km/h		**Case 2, speed 3 km/h**		**Case 3, 120 km/h**	
Relative Delay [ns]	**Average Power [dB]**	**Relative Delay [ns]**	**Average Power [dB]**	**Relative Delay [ns]**	**Average Power [dB]**
0	0	0	0	0	0
976	-10	976	0	260	-3
		12000~~20000~~	0	521	-6
				781	-9

3GPP TSG-WG4 meeting #9
Bath, UK, 7-10 December 1999

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25.105 **CR** **008** 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 *list expected approval meeting # here ↑*

for approval [X] for information [ ]

strategic [ ] non-strategic [ ] *(for SMG use only)*

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: *(at least one should be marked with an X)* (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]

Source: Siemens AG **Date:** 07.12.1999

Subject: Timing Advance Requirements

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change: Timing advance requirements are now covered by 25.123 and 25.225 specifications and can be removed from the specification 25.105.

Clauses affected: Chapter 7.8

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments: Draft CR proposed in WG4 Tdoc 884/99

7.7 Spurious emissions

The spurious emissions power is the power of emissions generated or amplified in a receiver that appear at the BS receiver antenna connector.

7.7.1 Minimum Requirement

The spurious emission shall be:

(a) Less than [-78] dBm/3.84 MHz at the BS receiver antenna connector, for frequencies within the BS receive band.

(b) Less than [-57] dBm/100 kHz at the BS receiver antenna connector, for frequencies bands from 9kHz to 1GHz.

(c) Less than [-47] dBm/100 kHz at the BS receiver antenna connector, for frequencies bands from 1GHz to 12.75GHz.

~~7.8 Timing Advance (TA) Requirements~~

~~The conditions under the requirements which must be met shall be 3dB below reference sensitivity level in section 7.2.~~

~~• On request the BS shall measure the delay of the received signal relative to the expected signal from an UE at zero distance under static channel conditions (see Annex B). This delay, called the timing advance, shall be rounded to the nearest value corresponding to 4 chips period. The delay shall be assessed in such a way that the measurement error (due to noise and interference) is less than 2 chips periods for stationary UE.~~

3GPP TSG-RAN WG4 #9
Bath, UK, 7-10 December 1999

Document
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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25.105	CR	011	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	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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: *(at least one should be marked with an X)*

(U)SIM		ME		UTRAN / Radio	X	Core Network	

Source: Siemens AG **Date:** 2/12/99

Subject: Corrections for BS TDD Blocking Characteristics

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change: Definition of the same frequency step size and a general lower and upper limit of the frequency region for blocking measurements as for UE.

Clauses affected: 7.5

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

Fuw (Modulated)	5	MHz

7.5 Blocking characteristics

The blocking characteristics is a measure of the receiver ability to receive a wanted signal at is assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the spurious response or the adjacent channels. The blocking performance shall apply at all frequencies as specified in the table below, using a 1MHz step size.

The static reference performance as specified in clause 7.2.1 should be met with a wanted and an interfering signal coupled to BS antenna input using the following parameters.

Table 7.3 : Blocking requirements

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	10 MHz	WCDMA signal with one code
1880 – 1900 MHz, 1990 – 2010 MHz, 2025 – 2045 MHz	-40 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
1920 – 1980 MHz	-40 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
1 < 1880 MHz, 1980 – 1990 MHz, ~~>~~2045 ~~MHz~~ < 12750 MHz	-15 dBm	<REFSENS> + 6 dB	—	CW carrier

7.6 Intermodulation characteristics

Third and higher order mixing of the two interfering RF signals can produce an interfering signal in the band of the desired channel. Intermodulation response rejection is a measure of the capability of the receiver to receiver a wanted signal on its assigned channel frequency in the presence of two or more interfering signals which have a specific frequency relationship to the wanted signal.

The static reference performance as specified in clause 7.2.1 should be met when the following signals are coupled to BS antenna input.

- A wanted signal at the assigned channel frequency, 6 dB above the static reference level.
- Two interfering signals with the following parameters.

Table 12 : Intermodulation requirement

Interfering Signal Level	Offset	Type of Interfering Signal
- 48 dBm	10 MHz	CW signal
- 48 dBm	20 MHz	WCDMA signal with one code

3GPP TSG RAN WG4 Meeting #9
Bath, UK, 7 - 10 December 1999

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25.105	CR	012	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	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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 [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG RAN WG4 **Date:**

Subject: Corrections to 25.105 v.3.0.0

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change: 25.105 version 3.0.0 includes some empty sections / test cases that are covered by given test cases in this test specification. It is proposed to delete those redundant sections.

Clauses affected: 8.2.2, 8.4

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments: Based on 3GPP WG4 Tdoc (99)

8 Performance requirement

8.1 General

Performance requirements for the BS are specified for the measurement channels defined in Annex A and the propagation conditions in Annex B. The requirements only apply to those measurement channels that are supported by the base station.

The requirements only apply to a base station with dual receiver antenna diversity. The required E_b/N_0 shall be applied separately at each antenna port.

Table 8.1: Summary of Base Station performance targets

Physical channel	**Measurement channel**	**Static**	**Multi-path Case 1**	**Multi-path Case 2**	**Multi-path Case 3**
		Performance metric			
DCH	12.2 kbps				
	64 kbps				
	144 kbps				
	384 kbps				
	2048 kbps				-
RACH					

8.2 Demodulation in static propagation conditions

8.2.1 Demodulation of DCH

The performance requirement of DCH in static propagation conditions is determined by the maximum Block Error Rate (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.2.1.1 Minimum requirement

The BLER should not exceed the limit for the E_b/N_0 specified in Table 8.2.

Table 8.2: Performance requirements in AWGN channel.

Measurement channel	Required E_b/N_0	Required E_b/N_0
12.2 kbps		
64 kbps		
144 kbps		
384 kbps		
2048 kbps		

~~8.2.2 Demodulation of RACH~~

~~8.2.2.1 Minimum requirement~~

8.3 Demodulation of DCH in multipath fading conditions

8.3.1 Multipath fading Case 1

The performance requirement of DCH in multipath fading Case 1 is determined by the maximum Block Error Rate (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.1.1 Minimum requirement

The BLER should not exceed the limit for the E_b/N_0 specified in Table 8.3.

Table 8.3: Performance requirements in multipath Case 1 channel.

Measurement channel	Required E_b/N_0	Required E_b/N_0
12.2 kbps		
64 kbps		
144 kbps		
384 kbps		
2048 kbps		

8.3.2 Multipath fading Case 2

The performance requirement of DCH in multipath fading Case 2 is determined by the maximum Block Error Rate (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.2.1 Minimum requirement

The BLER should not exceed the limit for the E_b/N_0 specified in Table 8.4.

Table 8.4: Performance requirements in multipath Case 2 channel.

Measurement channel	Required E_b/N_0 BLER < 10^{-1}	Required E_b/N_0 BLER < 10^{-2}
12.2 kbps	n.a.	
64 kbps		
144 kbps		
384 kbps		

8.3.3 Multipath fading Case 3

The performance requirement of DCH in multipath fading Case 3 is determined by the maximum Block Error Rate (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.3.1 Minimum requirement

The BLER should not exceed the limit for the E_b/N_0 specified in Table 8.5.

Table 8.5: Performance requirements in multipath Case 3 channel.

Measurement channel	Required E_b/N_0	Required E_b/N_0	Required E_b/N_0
12.2 kbps	n.a.		
64 kbps			
144 kbps			
384 kbps			

~~8.4 Demodulation of RACH in multipath fading conditions~~

~~8.4.1 Multipath fading Case 1~~

~~8.4.1.1 Minimum requirement~~

8.5 BS synchronisation performance

8.5.1 Minimum Requirement

The timing error of BSs synchronised to each other shall be less than [5µs].

3GPP TSG-WG4 meeting #9
Bath, UK, 7-10 December 1999

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25.105 **CR** **013** 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 *list expected approval meeting # here ↑*

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strategic [ ] non-strategic [ ] *(for SMG use only)*

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: *(at least one should be marked with an X)* (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]

Source: Siemens AG **Date:** 08.12.1999

Subject: Synchronisation Requirement

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	[ ]	**Release:** Phase 2	[ ]
A	Corresponds to a correction in an earlier release	[ ]	Release 96	[ ]
B	Addition of feature	[ ]	Release 97	[ ]
C	Functional modification of feature	[X]	Release 98	[ ]
D	Editorial modification	[ ]	Release 99	[X]
			Release 00	[ ]

Reason for change: TDD synchronisation via the air interface is not specified in WG1, therefore the requirement can not be tested and is deleted from 25.105

Clauses affected: Chapter 8.5

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments: WG4 Tdoc 944/99

~~8.5 BS synchronisation performance~~

~~8.5.1 Minimum Requirement~~

~~The timing error of BSs synchronised to each other shall be less than [5μs].~~

3GPP TSG RAN WG4 Meeting #10
Bath, Avon, UK, Dec 7 – Dec 10, 1999

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25.105	CR	014	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:	TSG-RAN#6	for approval	X	strategic		(for SMG use only)
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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: *(at least one should be marked with an X)* (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]

Source: BellSouth Cellular Corp **Date:** 1999-12-08

Subject: Update of ITU Region 2 Specific Specifications and proposed universal channel numbering.

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	X
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change: Updates region 2 specific specifications and proposed universal channel numbering.

Clauses affected: 5.2, 5.4.3, 7.5

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications	X	→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

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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

~~Note: Appropriate adjustment is required for the parameters in the specified band~~

c)* 1910 – 1930 MHz: Uplink and downlink transmission
~~Note: Appropriate adjustment is required for the parameters in the specified band~~

* Used in ITU Region 2

Additional allocations in ITU region 2 are FFS.

Deployment in existing and other frequency bands is not precluded.

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

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:

~~Lower IMT 2000 band:~~

$N_t = 5 * (F$ MHz ~~– 1885.2~~) ~~1885.2~~ 0.0 ≤ F ≤ 3276.6 MHz ~~2024.8~~ where F is the carrier frequency in MHz

7.5 Blocking characteristics

The blocking characteristics is a measure of the receiver ability to receive a wanted signal at is assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the spurious response or the adjacent channels. The blocking performance shall apply at all frequencies as specified in the table below.

The static reference performance as specified in clause 7.2.1 should be met with a wanted and an interfering signal coupled to BS antenna input using the following parameters.

Table 7.3(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	10 MHz	WCDMA signal with one code
1880 – 1900 MHz, 1990 – 2010 MHz, 2025 – 2045 MHz	-40 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
1920 – 1980 MHz	-40 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
<1880, 1980 – 1990 MHz, > 2045 MHz	-15 dBm	<REFSENS> + 6 dB	—	CW carrier

Table 7.3(b) : Blocking requirements for operating bands defined in 5.2(b,c)

Center Frequency of Interfering Signal	Interfering Signal Level	Wanted Signal Level	Minimum Offset of Interfering Signal	Type of Interfering Signal
1850 – 1990 MHz	-40 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
1830 – 1850 MHz 1990 – 2010 MHz	-40 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
1920 – 1980 MHz	-40 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
<1830, 1930 – 2000 MHz, > 2045 MHz	-15 dBm	<REFSENS> + 6 dB	—	CW carrier

3GPP TSG-WG4 meeting #9
Bath, UK, 7-10 December 1999

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25.105	CR	015	Current Version:	3.0.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

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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 [X] Core Network [ ]
(at least one should be marked with an X)

Source: Siemens AG **Date:** 09.12.1999

Subject: Clarification of Antenna Diversity receiver requirements

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Version 3.0.0 of 25.105 does not clearly express how the requirements in chapter 7 apply to antenna diversity receiver. The requirement in 7.2 is also incorrect in that it is derived without antenna diversity but is stated to be with diversity.

Clauses affected: 7.1, 7.2

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

7 Receiver characteristics

7.1 General

~~Unless detailed the receiver characteristic are specified at each antenna connector of the BS.~~ The requirements in ~~this sub-clause~~section 7 assume that the receiver is not equipped with diversity. For receivers with diversity, the requirements apply to each antenna connector separately, with the other one(s) terminated or disabled .The requirements are otherwise unchanged.

7.2 Reference sensitivity level

The reference sensitivity is the minimum receiver input power measured at the antenna connector at which the FER/BER does not exceed the specific value indicated in section 7.2.1. ~~The signal power is equally applied to each antenna connector for diversity.~~

7.2.1 Minimum Requirement

For the measurement channel specified in Annex A, the reference sensitivity level and performance of the BS shall be as specified in table 7.1 below.

Table 7.1: BS reference sensitivity levels

Data rate	BS reference sensitivity level (dBm)	FER/BER
12.2 kbps	-110 dBm	BER shall not exceed 0.001

3GPP TSG-RAN WG4 meeting #9
Bath, UK, 7-10 December 1999

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3G CHANGE REQUEST

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25.105 **CR** **016** Current Version: 3.0.0

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG RAN #6 *list TSG meeting no. here ↑*

for approval [X]
for information [ ]

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Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

Proposed change affects: *(at least one should be marked with an X)*

USIM [ ] ME [ ] UTRAN [X] Core Network [ ]

Source: Allgon **Date:** 1999-12-09

Subject: CR on Spurious Emission in 25.105

3G Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X
A	Corresponds to a correction in a 2G specification	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Reason for change: Based on the support among the WG4 delegates for a minimum coupling loss value of 30 dB, the proposal is to remove the brackets from the minimum requirements on BS spurious emission limits for the protection of GSM 900 and DCS 1800 receivers in chapter 6 of TS 25.105 v3.0.0.

Clauses affected: 6.6.3.2.2 and 6.6.3.3.2

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:	
Other 2G core specifications	[ ]	→ List of CRs:	
MS test specifications	[ ]	→ List of CRs:	
BSS test specifications	[X]	→ List of CRs:	TS 25.142
O&M specifications	[ ]	→ List of CRs:	

Other comments:

6.6.3.2 Co-existence with GSM 900

6.6.3.2.1 Operation in the same geographic area

This requirement may be applied for the protection of GSM 900 MS in geographic areas in which both GSM 900 and UTRA are deployed.

[This requirement assumes the scenario described in 25.942.] For different scenarios, the manufacturer may declare a different requirement.

6.6.3.2.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.5: BS Spurious emissions limits for BS in geographic coverage area of GSM 900

Band	Maximum Level	Measurement Bandwidth	Note
921 – 960MHz	-47 dBm	100 kHz	

6.6.3.2.2 Co-located base stations

This requirement may be applied for the protection of GSM 900 BTS receivers when GSM 900 BTS and UTRA BS are co-located.

~~[This requirement assumes the scenario described in 25.942.] For different scenarios, the manufacturer may declare a different requirement.~~

6.6.3.2.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.6: BS Spurious emissions limits for protection of the BS receiver

Band	Maximum Level	Measurement Bandwidth	Note
921 – 960MHz	~~[98]dBm~~ -98 dBm	100 kHz	

6.6.3.3 Co-existence with DCS 1800

6.6.3.3.1 Operation in the same geographic area

This requirement may be applied for the protection of DCS 1800 MS in geographic areas in which both DCS 1800 and UTRA are deployed.

[This requirement assumes the scenario described in 25.942.] For different scenarios, the manufacturer may declare a different requirement.

6.6.3.3.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.7: BS Spurious emissions limits for BS in geographic coverage area of DCS 1800

Band	Maximum Level	Measurement Bandwidth	Note

1805 – 1880MHz	-57 dBm	100 kHz	

6.6.3.3.2 Co-located basestations

This requirement may be applied for the protection of DCS 1800 BTS receivers when DCS 1800 BTS and UTRA BS are co-located.

~~[This requirement assumes the scenario described in 25.942.] For different scenarios, the manufacturer may declare a different requirement.~~

6.6.3.3.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.8: BS Spurious emissions limits for BS co-located with DCS 1800 BTS

Band	Maximum Level	Measurement Bandwidth	Note
1710 – 1785 MHz	~~[98]dBm~~ -98 dBm	100 kHz	

3GPP TSG RAN WG4 Meeting #9
Bath, UK, 7 - 10 December 1999

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25.105	CR	017	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	for approval	X	strategic		(for SMG use only)
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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 [X] Core Network [ ]
(at least one should be marked with an X)

Source: Algon **Date:** 10/12/99

Subject: ACLR

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	X
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change: ACLR requirements + spectrum mask are added, ACS requirement is corrected accordingly.

Clauses affected:

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs: 25.942
O&M specifications		→ List of CRs:

Other comments: Based on 3GPP WG4 Tdoc (99) 883

6.5 Transmit OFF power

The transmit OFF power state is when the BS does not transmit. This parameter is defined as maximum output transmit power within the channel bandwidth when the transmitter is OFF.

6.5.1 Minimum Requirement

The requirement of transmitOFF power shall be better than –33dBm measured with a filter that has a Root Raised Cosine (RRC) filter responcse with a roll off α=0.22 and a bandwidth equal to the chip rate.

6.6 Output RF spectrum emissions

6.6.1 Occupied bandwidth

Occupied bandwidth is a measure of the bandwidth containing 99% of the total integrated power for transmitted spectrum and is centered on the assigned channel frequency. The occupied channel bandwidth is less than 5 MHz based on a chip rate of 3.84 Mcps.

6.6.2 Out of band emission

Out of band emissions are unwanted emissions immediately outside the [channel] bandwidth resulting from the modulation process and non-linearity in the transmitter but excluding spurious emissions. This out of band emission limit is specified in terms of a spectrum emission mask and adjacent channel power ratio for the transmitter.

6.6.2.1 —Spectrum emission mask

The mask defined in Table 6.3 to 6.6 below may be mandatory in certain regions. In other regions this mask may not be applied.

For regions where this clause applies, the requirement shall be met by a base station transmitting on a single RF carrier configured in accordance with the manufacturer's specification. Emissions shall not exceed the maximum level specified by the mask in the frequency range with offset Δf from 2.5 MHz to Δf_{max} from the carrier frequency. The maximum offset Δf_{max} is 12.5 MHz.

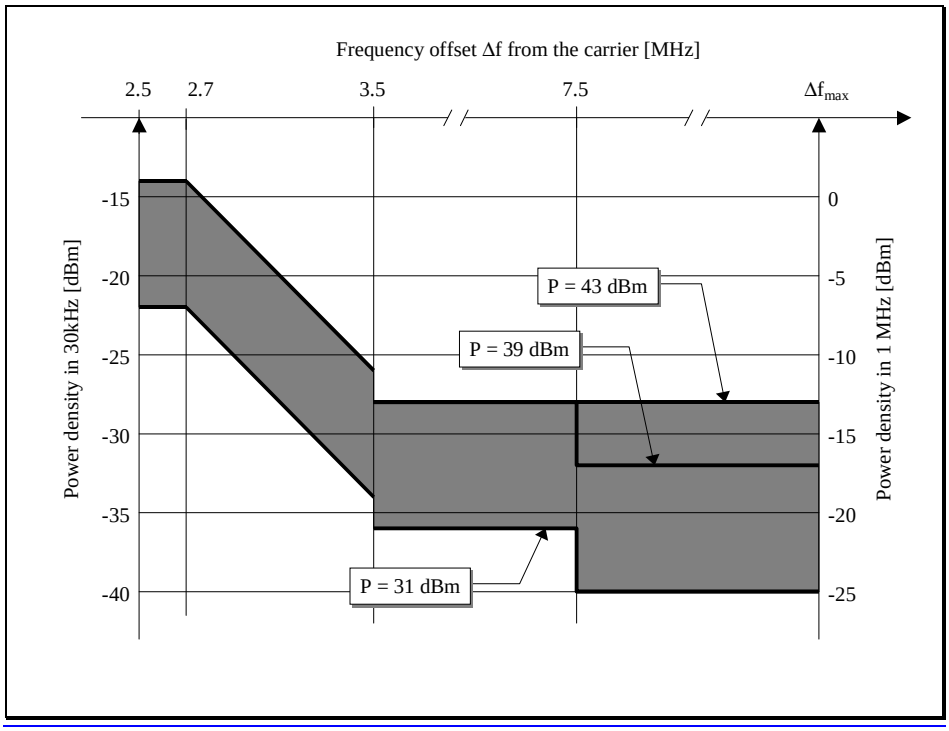

Table 6.3: Spectrum emission mask values, BS maximum output power P ≥ 43 dBm

Frequency offset Δf	Maximum level	Measurement bandwidth
2.5 ≤ Δf < 2.7 MHz	-14 dBm	30 kHz [1]
2.7 ≤ Δf < 3.5 MHz	- 14 - 15·(Δf - 2.7) dBm	30 kHz [1]
3.5 ≤ Δf ≤ Δf_{max} MHz	-13 dBm	1 MHz [2]

Table 6.4: Spectrum emission mask values, BS maximum output power 39 ≤ P < 43 dBm

Frequency offset Δf	Maximum level	Measurement bandwidth
2.5 ≤ Δf < 2.7 MHz	-14 dBm	30 kHz [1]
2.7 ≤ Δf < 3.5 MHz	-14 - 15·(Δf - 2.7) dBm	30 kHz [1]
3.5 ≤ Δf < 7.5 MHz	-13 dBm	1 MHz [2]
7.5 ≤ Δf ≤ Δf_{max} MHz	P - 56 dBm	1 MHz [2]

Table 6.5: Spectrum emission mask values, BS maximum output power 31 ≤ P < 39 dBm

Frequency offset Δf	Maximum level	Measurement bandwidth
2.5 ≤ Δf < 2.7 MHz	P - 53 dBm	30 kHz [1]
2.7 ≤ Δf < 3.5 MHz	P - 53 - 15·(Δf - 2.7) dBm	30 kHz [1]
3.5 ≤ Δf < 7.5 MHz	P - 52 dBm	1 MHz [2]
7.5 ≤ Δf ≤ Δf_{max} MHz	P - 56 dBm	1 MHz [2]

Table 6.6: Spectrum emission mask values, BS maximum output power P < 31 dBm

Frequency offset Δf	Maximum level	Measurement bandwidth
2.5 ≤ Δf < 2.7 MHz	-22 dBm	30 kHz [1]
2.7 ≤ Δf < 3.5 MHz	-22 - 15·(Δf - 2.7) dBm	30 kHz [1]
3.5 ≤ Δf < 7.5 MHz	-21 dBm	1 MHz [2]
7.5 ≤ Δf ≤ Δf_{max} MHz	-25 dBm	1 MHz [2]

Notes:

1. The first and last measurement positions with a 30 kHz filter are 2.515 MHz and 3.485 MHz
2. The first and last measurement positions with a 1 MHz filter are 4 MHz and (Δf_{max} – 500 kHz)

6.6.2.2 Adjacent Channel Leakage power Ratio (ACLR)

Adjacent Channel Leakage power Ratio (ACLR) is the ratio of the transmitted power to the power measured after a receive filter in the adjacent channel(s). Both the transmitted and the received power are measured through a matched filter (Root Raised Cosine and roll-off 0.22) with a noise power bandwidth equal to the chip rate.

6.6.2.2.1 Minimum Requirement

The ACLR shall be better than the value specified in Table 6.6.

Table 6.6: BS ACLR

BS adjacent channel offset	ACLR limit
± 5 MHz	~~[~~45~~]~~ dB
± 10 MHz	~~[~~55~~]~~ dB

6.6.2.2.2 Requirement in case of operation in proximity to TDD BS or FDD BS operating on an adjacent frequency

In case the equipment is operated in proximity to another TDD BS or FDD BS on an adjacent frequency, the ACLR shall be better than the value specified in Table 6.7.

Table 6.7: BS ACLR in case of operation in proximity

BS adjacent channel offset	ACLR limit
± 5 MHz	70 dB
± 10 MHz	70 dB

The requirement is based on the assumption that the coupling loss between the base stations is at least 84dB.

6.6.2.2.3 Requirement in case of co-siting with TDD BS or FDD BS operating on an adjacent frequency

In case the equipment is co-sited to another TDD BS or FDD BS on an andjacent frequency, the ACLR is specified in terms of the absolute transmit power level of the BS. The maximum power level shall not exceed the limit in Table 6.8.

Table 6.8: BS ACLR in case of co-siting

BS adjacent channel offset	Maximum Level	Measurement Bandwidth
± 5 MHz	-80 dBm	3.84 MHz
± 10 MHz	80 dB	3.84 MHz

7.4 Adjacent Channel Selectivity (ACS)

Adjacent channel selectivity (ACS) is a measure of the receiver ability to receive a wanted signal at is assigned channel frequency in the presence of an adjacent channel signal at a given frequency offset from the center frequency of the assigned channel. ACS is the ratio of the receiver filter attenuation on the assigned channel frequency to the receive filter attenuation on the adjacent channel(s).

7.4.1 Minimum Requirement

The BER shall not exceed 0.001 for the parameters specified in table 7.2.

Table 7.2 : Adjacent channel selectivity

Parameter	**Level**	**Unit**
Data rate	12.2	kbps
Wanted signal	~~[ ]~~Reference sensitivity level + 6dB	dBm
Interfering signal	~~[ ]~~ -52	dBm
Fuw (Modulated)	5	MHz