TSG RAN Meeting #15   **RP-020017**

Cheju, Korea, 5 - 8 March 2002

Title: **CRs (R'99 and Rel-4 Category A) to TS 25.105**

Source: **TSG RAN WG4**

Agenda Item: **7.4.3**

RAN4 Tdoc	Spec	CR	Rev	Phase	Title	Cat	Curr Ver	New Ver
R4-020068	25.105	88		R99	UL reference measurement channel (12.2 kbps) puncturing rate correction	F	3.9.0	3.10.0
R4-020069	25.105	89		Rel-4	UL reference measurement channel (12.2 kbps) puncturing rate correction	A	4.3.0	4.4.0
R4-020249	25.105	102		R99	Single and multi carrier in spurious emissions requirements	F	3.9.0	3.10.0
R4-020250	25.105	103		Rel-4	Single and multi carrier in spurious emissions requirements	A	4.3.0	4.4.0
R4-020409	25.105	99	1	R99	Consideration of multi-carrier operation in ACLR requirements	F	3.9.0	3.10.0
R4-020410	25.105	100	1	Rel-4	Consideration of multi-carrier operation in ACLR requirements	A	4.3.0	4.4.0

CR-Form-v5

CHANGE REQUEST

| ⌘ | **25.105** CR **100** | ⌘ | ᴇv **1** | ⌘ | Current version: | **4.3.0** | ⌘ |

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

Title:	⌘	Consideration of multi-carrier operation in ACLR requirements
Source:	⌘	RAN WG4
Work item code: ⌘	TEI	***Date:*** ⌘ 1/2/2002

Category:	⌘ **A**	***Release:*** ⌘ Rel-4

Use one of the following categories:
F (correction)
A (corresponds to a correction in an earlier release)
B (addition of feature),
C (functional modification of feature)
D (editorial modification)
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Use one of the following releases:
2   (GSM Phase 2)
R96   (Release 1996)
R97   (Release 1997)
R98   (Release 1998)
R99   (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘	The interpretation of the current ACLR requirement in case of a multi-carrier Node-B is ambiguous.
Summary of change: ⌘	BS adjacent channel offsets clarified to cover single and multi-carrier Node-B.
Consequences if not approved: ⌘	The ACLR requirement can be misinterpreted. Isolated Impact Analysis: Correction of a requirement where the specification was ambiguous or not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.

Clauses affected: ⌘	6.6.2.2.1.1; 6.6.2.2.2.1; 6.6.2.2.3.1	
Other specs affected: ⌘	☐ Other core specifications ⌘ **X** Test specifications ☐ O&M Specifications	25.142
Other comments: ⌘	Cat A CR refers to Cat F CR tdoc R4-02xxxx	

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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.

6.6.2.2   Adjacent Channel Leakage power Ratio (ACLR)

Adjacent Channel Leakage power Ratio (ACLR) is the ratio of the average power centered on the assigned channel frequency to the average power centered on an adjacent channel frequency. In both cases the power is measured with filter that has a Root Raised Cosine (RRC) filter response with roll-off α=0.22 and a bandwidth equal to the chip rate. The requirements shall apply for all configurations of BS (single carrier or multi-carrier), and for all operating modes foreseen by the manufacturer's specification.

The requirement depends on the deployment scenario. Three different deployment scenarios have been defined as given below.

6.6.2.2.1   Minimum Requirement

6.6.2.2.1.1   3,84 Mcps TDD Option

The ACLR of a single carrier BS or a multi-carrier BS with contiguous carrier frequencies shall be higher than the value specified in Table 6.7.

Table 6.7: BS ACLR

BS adjacent channel offset below the first or above the last carrier frequency used	ACLR limit
±5 MHz	45 dB
±10 MHz	55 dB

If a BS provides multiple non-contiguous single carriers or multiple non-contiguous groups of contiguous single carriers, the above requirements shall be applied individually to the single carriers or group of single carriers.

6.6.2.2.1.2   1,28 Mcps TDD Option

For the 1.28Mcps chip rate option, the ACLR shall be better than the value specified in Table 6.7A

Table 6.7A: BS ACLR (1.28Mcps chip rate)

BS adjacent channel offset	ACLR limit
± 1.6 MHz	40 dB
± 3.2 MHz	50 dB

NOTE: This requirement is valid for co-existence with frame and switching point synchronised systems, or for non-synchronised systems if the path loss between the BSs is greater than 107dB.

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

6.6.2.2.2.1   3,84 Mcps TDD Option

In case the equipment is operated in proximity to another TDD BS or FDD BS operating on the first or second adjacent frequency, the ACLR of a single carrier BS or a multi-carrier BS with contiguous carrier frequencies shall be higher than the value specified in Table 6.8.

Table 6.8: BS ACLR in case of operation in proximity

BS adjacent channel offset below the first or above the last carrier frequency used	ACLR limit
±5 MHz	70 dB
±10 MHz	70 dB

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

If a BS provides multiple non-contiguous single carriers or multiple non-contiguous groups of contiguous single carriers, the above requirements shall be applied to those adjacent channels of the single carriers or group of single channels which are used by the TDD BS or FDD BS in proximity.

6.6.2.2.2   1,28 Mcps TDD Option

In case the equipment is operated in proximity to another TDD BS or FDD BS and both BSs operating on an adjacent frequency band , the requirement is specified in terms of power level of the transmitting BS. This requirement is valid for co-existence with non-frame and non-switching point synchronised systems operating on the closest used carrier. The interference power level shall not exceed the limit in Table 6.8A.

Table 6.8A: BS ACLR in case of operation in proximity

Center Frequency for Measurement	Maximum Level of the interference power (in case of multiple antennas the interference powers shall be summed at all antenna connectors)	Measurement Bandwidth
Closest used carrier of the victim receiver: Either FDD carrier Or 3.84 Mcps TDD carrier Or 1.28 Mcps TDD carrier	-36 dBm	chip rate of the victim receiver: In case of FDD: 3.84 MHz In case of 3.84 Mcps TDD: 3.84 MHz In case of 1.28 Mcps TDD: 1.28 MHz

The closest used carrier with respect to the regarded carrier of one system is defined by

a minimum difference in centre frequency between the regarded carrier and the carriers used in the other system and the chip rate of the other system.

If the actual allowed interference level $P_{int, allowed, actual}$ at the victim receiver is higher than –106dBm, this requirement may be relaxed by the amount $P_{int, allowed, actual} - (-106dBm)$.

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

6.6.2.2.3.1   3,84 Mcps TDD Option

In case the equipment is co-sited to another TDD BS or FDD BS operating on the first or second adjacent frequency, the requirement is specified in terms of the adjacent channel power level of the BS measured in the adjacent channel. The adjacent channel power of a single carrier BS or a multi-carrier BS with contiguous carrier frequencies shall not exceed the limit in Table 6.9.

Table 6.9: BS ACLR in case of co-siting

BS adjacent channel offset below the first or above the last carrier frequency used	Maximum Level	Measurement Bandwidth
±5 MHz	-80 dBm	3.84 MHz
±10 MHz	-80 dBm	3.84 MHz

If a BS provides multiple non-contiguous single carriers or multiple non-contiguous groups of contiguous single carriers, the above requirements shall be applied to those adjacent channels of the single carriers or group of single channels which are used by the co-sited TDD BS or FDD BS.

6.6.2.2.3.2   1,28 Mcps TDD Option

In case the equipment is co-sited to another TDD BS or FDD BS and both BSs operating on an adjacent frequency band, the requirement is specified in terms of power level of the transmitting BS. This requirement is valid for co-existence with a non-frame and non-switching point synchronised systems operating on closest used carrier. The interference power level shall not exceed the limit in Table 6.9A.

Table 6.9A: BS ACLR in case of co-siting

Center Frequency for Measurement	Maximum Level of the interference power (in case of multiple antennas the interference powers shall be summed at all antenna connectors)	Measurement Bandwidth
Closest used carrier of the victim receiver: Either FDD carrier Or 3.84 Mcps TDD carrier Or 1.28 Mcps TDD carrier	-76 dBm	chip rate of the victim receiver: In case of FDD: 3.84 MHz In case of 3.84 Mcps TDD: 3.84 MHz In case of 1.28 Mcps TDD: 1.28 MHz

The closest used carrier with respect to the regarded carrier of one system is defined by

> a minimum difference in centre frequency between the regarded carrier and the carriers used in the other system and the chip rate of the other system.

If the actual MCL_{actual} is higher than 30dB, this requirement may be relaxed by the amount $MCL_{actual} - 30dB$.

If the actual allowed interference level $P_{int, allowed, actual}$ at the victim receiver is higher than $-106dBm$, this requirement may be relaxed by the amount $P_{int, allowed, actual} - (-106dBm)$.

CR-Form-v5

CHANGE REQUEST

| ⌘ | **25.105** CR **99** | ⌘ | ev **1** | ⌘ | Current version: | **3.9.0** | ⌘ |

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

Title: ⌘	Consideration of multi-carrier operation in ACLR requirements	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 1/2/2002

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

Reason for change: ⌘	The interpretation of the current ACLR requirement in case of a multi-carrier Node-B is ambiguous.
Summary of change: ⌘	BS adjacent channel offsets clarified to cover single and multi-carrier Node-B.
Consequences if not approved: ⌘	The ACLR requirement can be misinterpreted. Isolated Impact Analysis: Correction of a requirement where the specification was ambiguous or not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.

Clauses affected: ⌘	6.6.2.2.1; 6.6.2.2.2; 6.6.2.2.3

Other specs affected: ⌘	☐ Other core specifications ⌘		
	X Test specifications	25.142	
	☐ O&M Specifications		

Other comments: ⌘	

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6.6.2.2 Adjacent Channel Leakage power Ratio (ACLR)

Adjacent Channel Leakage power Ratio (ACLR) is the ratio of the average power centered on the assigned channel frequency to the average power centered on an adjacent channel frequency. In both cases the power is measured with a filter that has a Root Raised Cosine (RRC) filter response with roll-off α=0.22 and a bandwidth equal to the chip rate. The requirements shall apply for all configurations of BS (single carrier or multi-carrier), and for all operating modes foreseen by the manufacturer's specification.

6.6.2.2.1 Minimum Requirement

The ACLR of a single carrier BS or a multi-carrier BS with contiguous carrier frequencies shall be higher than the value specified in Table 6.7.

Table 6.7: BS ACLR

BS adjacent channel offset below the first or above the last carrier frequency used	ACLR limit
±5 MHz	45 dB
±10 MHz	55 dB

If a BS provides multiple non-contiguous single carriers or multiple non-contiguous groups of contiguous single carriers, the above requirements shall be applied individually to the single carriers or group of single carriers.

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 operating on the first or second adjacent frequency, the ACLR of a single carrier BS or a multi-carrier BS with contiguous carrier frequencies shall be higher than the value specified in Table 6.8.

Table 6.8: BS ACLR in case of operation in proximity

BS adjacent channel offset below the first or above the last carrier frequency used	ACLR limit
±5 MHz	70 dB
±10 MHz	70 dB

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

If a BS provides multiple non-contiguous single carriers or multiple non-contiguous groups of contiguous single carriers, the above requirements shall be applied to those adjacent channels of the single carriers or group of single channels which are used by the TDD BS or FDD BS in proximity.

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 operating on the first or second adjacent frequency, the requirement is specified in terms of the adjacent channel power level of the BS measured in the adjacent channel. The adjacent channel power of a single carrier BS or a multi-carrier BS with contiguous carrier frequencies shall not exceed the limit in Table 6.9.

Table 6.9: BS ACLR in case of co-sitting

BS adjacent channel offset below the first or above the last carrier frequency used	Maximum Level	Measurement Bandwidth
±5 MHz	-80 dBm	3.84 MHz
±10 MHz	-80 dBm	3.84 MHz

If a BS provides multiple non-contiguous single carriers or multiple non-contiguous groups of contiguous single carriers, the above requirements shall be applied to those adjacent channels of the single carriers or group of single channels which are used by the co-sited TDD BS or FDD BS.

CR-Form-v6.1

CHANGE REQUEST

⌘	**25.105 CR 89**	⌘**rev**	**-**	⌘	Current version:	**4.3.0**	⌘

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

Title: ⌘	UL reference measurement channel (12.2 kbps) puncturing rate correction	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI	***Date:*** ⌘ 1/2/2002

Category: ⌘ **A**	***Release:*** ⌘ Rel-4

Use one of the following categories:
F (correction)
A (corresponds to a correction in an earlier release)
B (addition of feature),
C (functional modification of feature)
D (editorial modification)
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Use one of the following releases:
2   (GSM Phase 2)
R96   (Release 1996)
R97   (Release 1997)
R98   (Release 1998)
R99   (Release 1999)
REL-4   (Release 4)
REL-5   (Release 5)

Reason for change: ⌘	The reference measurement channel puncturing rate as stated in Table A.1 is not in agreement with the time slot format defined in 25.221 Table 5b as they should be.
Summary of change: ⌘	Correct the values in Table A.1 to be in agreement with the current time slot format requiement.
Consequences if not approved: ⌘	The Table A.1 will contain outdated and incorrect information which is in direct conflict with the requirements in 25.221. Isolated Impact Analysis: Correction to a function where the specification was: • Containing some contradictions relative to another previously updated specification (25.221). Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected: ⌘	A.2.1
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	

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A.2.1   UL reference measurement channel (12.2 kbps)

A.2.1.1   3,84 Mcps TDD Option

Table A.1

Parameter	Value
Information data rate	12.2 kbps
RU´s allocated	2 RU
Midamble	512 chips
Interleaving	20 ms
Power control	2 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate 1/3 : DCH / DCCH	~~5~~10% / 0%

CR-Form-v6.1

CHANGE REQUEST

| ⌘ | **25.105** CR **88** | ⌘**rev** | **-** | ⌘ | Current version: | **3.9.0** | ⌘ |

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

Title: ⌘	UL reference measurement channel (12.2 kbps) puncturing rate correction
Source: ⌘	RAN WG4
Work item code: ⌘	**Date:** ⌘ 1/2/2002
Category: ⌘ **F**	**Release:** ⌘ R99

Use <u>one</u> of the following categories:
F (correction)
A (corresponds to a correction in an earlier release)
B (addition of feature),
C (functional modification of feature)
D (editorial modification)
Detailed explanations of the above categories can
be found in 3GPP <u>TR 21.900</u>.

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 reference measurement channel puncturing rate as stated in Table A.1 is not in agreement with the time slot format defined in 25.221 Table 5b as they should be.
Summary of change: ⌘	Correct the values in Table A.1 to be in agreement with the current time slot format requiement.
Consequences if not approved: ⌘	The Table A.1 will contain outdated and incorrect information which is in direct conflict with the requirements in 25.221. Isolated Impact Analysis: Correction to a function where the specification was: • Containing some contradictions relative to another previously updated specification (25.221). Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected: ⌘	A.2.1
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	

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A.2.1 UL reference measurement channel (12.2 kbps)

Table A.1

Parameter	Value
Information data rate	12.2 kbps
RU´s allocated	2 RU
Midamble	512 chips
Interleaving	20 ms
Power control	2 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate 1/3 : DCH / DCCH	~~5~~10% / 0%

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.105** CR **103** | ⌘ | ev | **-** | ⌘ | Current version: | **4.3.0** | ⌘ |

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

Title: ⌘	Single and multi carrier in spurious emissions requirements	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI	***Date:*** ⌘ 1/2/2002

Category: ⌘ **A**	***Release:*** ⌘ Rel-4
Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP <u>TR 21.900</u>.	*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: ⌘	The current spurious emissions requirement covers single and multicarrier BS for Category A and B requirements, but not for the co-existence and co-location requirements. This is in conflict with the ITU-R M.[IMT.UNWANT-BS], where all spurious emission requirements are for both single and multicarrier. The application of the limits, as stated in ITU-R SM.329-8 and ITU-R M.[IMT.UNWANT-BS] for the additional requirements is missing.
Summary of change: ⌘	The provisions for single and multicarrier and for application of limits are moved to section 6.6.3, which is the general section for spurious emissions.
Consequences if not approved: ⌘	There would be a conflict between the spurious emission requirements in the core specification and the one in ITU-R M.[IMT.UNWANT-BS]. <u>Isolated Impact Analysis:</u> Correction of a requirement where the specification was ambiguous or not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.

Clauses affected: ⌘	6.6.3, 6.6.3.1, 6.6.3.1.1.1.1, 6.6.3.1.2.1.1

Other specs affected: ⌘	☐	Other core specifications ⌘	
	X	Test specifications	25.142
	☐	O&M Specifications	

Other comments: ⌘	<u>Cat A CR refers to Cat F CR tdoc R4-02xxxx</u>

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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.

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

For 3.84 Mcps TDD option, either requirement applies at frequencies within the specified frequency ranges which are more than 12.5 MHz under the first carrier frequency used or more than 12.5 MHz above the last carrier frequency used.

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		1 kHz	Bandwidth as in ITU SM.329-8, s4.1
150kHz – 30MHz	-13 dBm	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		1 kHz	Bandwidth as in ITU SM.329-8, s4.1
150kHz – 30MHz	-13 dBm	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

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

6.6.3.1.2   Spurious emissions (Category B)

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

6.6.3.1.2.1   Minimum Requirement

6.6.3.1.2.1.1   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 6.11: BS Mandatory spurious emissions limits, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz – 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU SM.329-8, s4.1
150kHz – 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU SM.329-8, s4.1
30MHz – 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU SM.329-8, s4.1
1GHz ↔ Fc1-60 MHz or Fl -10 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU SM.329-8, s4.1
Fc1 - 60 MHz or Fl -10 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or Fl -10 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-8, s4.3 and Annex 7
Fc1 - 50 MHz or Fl -10 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or Fu +10 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-8, s4.3 and Annex 7
Fc2 + 50 MHz or Fu + 10 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or Fu + 10 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-8, s4.3 and Annex 7
Fc2 + 60 MHz or Fu + 10 MHz *whichever is the lower* ↔ 12,75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-8, s4.3 and Annex 7. Upper frequency as in ITU-R SM.329-8, s2.5 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

CR-Form-v5

CHANGE REQUEST

⌘   **25.105** CR **102**   ⌘ ev **-** ⌘   Current version: **3.9.0** ⌘

*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: ⌘	Single and multi carrier in spurious emissions requirements	
Source: ⌘	RAN WG4	
Work item code: ⌘		*Date:* ⌘ 1/2/2002
Category: ⌘ **F**		*Release:* ⌘ R99

Use <u>one</u> of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP <u>TR 21.900</u>.

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 current spurious emissions requirement covers single and multicarrier BS for Category A and B requirements, but not for the co-existence and co-location requirements. This is in conflict with the ITU-R M.[IMT.UNWANT-BS], where all spurious emission requirements are for both single and multicarrier. The application of the limits, as stated in ITU-R SM.329-8 and ITU-R M.[IMT.UNWANT-BS] for the additional requirements is missing.
Summary of change: ⌘	The provisions for single and multicarrier and for application of limits are moved to section 6.6.3, which is the general section for spurious emissions.
Consequences if not approved: ⌘	There would be a conflict between the spurious emission requirements in the core specification and the one in ITU-R M.[IMT.UNWANT-BS]. <u>Isolated Impact Analysis:</u> Correction of a requirement where the specification was ambiguous or not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.

Clauses affected: ⌘	6.6.3, 6.6.3.1	
Other specs **affected:** ⌘	☐ Other core specifications ⌘ **X** Test specifications ☐ O&M Specifications	 25.142
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://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.6.3   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.

The requirements shall apply whatever the type of transmitter considered (single carrier or multiple carrier). It applies for all transmission modes foreseen by the manufacturer's specification.

Either requirement applies at frequencies within the specified frequency ranges which are more than 12.5 MHz under the first carrier frequency used or more than 12.5 MHz above the last carrier frequency used.

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.

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.