TSG-RAN Working Group 4 (Radio) meeting #3   **TSGW4#3(99)117**
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Agenda Item:

Source: Nokia

Title: BS transmit spectrum requirements

Document for: Approval

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1. Introduction

This document proposes requirements and definitions for BS ACPR, spurious emissions, transmit intermodulation and intra-BS intermodulation.
In this proposal only GSM bands existing requirements has been taken into account; we welcome proposals on how other systems, e.g. PDC, should be included in these requirements.

Most signal levels are presented within 4.1 MHz measurement bandwidth in order to allow an easy comparison. In some cases it might be beneficial to change the measurement bandwidth to other than 4.1 MHz but the required levels should be comparable to the values presented here.

Chapter and table numbers in following text proposals refer to S4.01B version 0.0.3.

2. Text proposal for 'ACPR 6.6.2.2'

6.6.2.2.1 Minimum requirement

BS channel	Offset	Relative level, w.r.t. Pout	absolute level, shall not be exceeded	absolute level, need not be less
adjacent channel (ACP1)	5 MHz	- 45 dBc	-2 dBm	-14 dBm
alternate channel (ACP2)	10 MHz	- 55 dBc	-12 dBm	-19 dBm
transition channel (ACP3)	15 MHz	- 60dBc	-17 dBm	-24 dBm

Table 4, BS ACPR

Note: ACP3 in accordance with CEPT/ERC/REC 74-01 E spurious emissions limit.

3. Text proposal for 'Spurious emissions 6.6.3'

6.6.3.1 Minimum requirement

Limits for spurious emissions don't apply with offset of ± 17.5 MHz from the carrier (in accordance with CEPT/ERC/REC 74-01 E spurious emissions limit). ACP1, ACP2 and ACP3 are applicable instead, as defined in *6.6.2.2*.

Band	Maximum Level	Measurement Bandwidth	(Informative, to be removed) Level in 4.096 MHz	Note
9kHz – 1 GHz	-36dBm	1 MHz	-30 dBm	As in ITU
1GHz – 12.75 GHz	- 30 dBm	1 MHz	-24 dBm	As in ITU
880 MHz – 915 MHz	-98 dBm	100 kHz	-82 dBm	GSM900 uplink
925 MHz – 960 MHz	-47 dBm	100 kHz	-31 dBm	GSM900 downlink
1710 MHz – 1785 MHz	-98 dBm	100 kHz	-82 dBm	GSM1800 uplink
1805 MHz – 1880 MHz	-57 dBm	100 kHz	-41 dBm	GSM1800 downlink
1920 MHz – 1980 MHz	-78 dBm	4.096 MHz	-78 dBm	WCDMA uplink

Table n, BS spurious emissions

4. Text proposal for 'Transmit intermodulation 6.7'

6.7   Transmit intermodulation
6.7.1   Minimum requirement
The transmit intermodulation shall be defined by the ratio of the output power of subject transmitted signal to the output power of any intermodulation product when an interference signal is injected into the antenna connector at a level of 30dB lower than that of the subject signal. The frequency of the interference signal shall be ±5MHz, ±10MHz and ±15MHz off the subject signal.

Within the WCDMA transmit band, spurious emissions requirement is used, except in the range of ± 17.5MHz of the subject signal, ACPR requirement is used.

5. Proposal for new chapter 'Intra-BS intermodulation 6.n'

6.n   Intra-BS intermodulation
6.n.1   Minimum requirement
The intra-BS intermodulation attenuation is defined as level of the intermodulation products when BS is transmitting on all carriers with maximum output power.

The spurious emissions requirement is used, except in the range of ±17.5MHz of the subject signal, adjacent channel leakage power requirement is used.

6. Conclusion

Requirements and definitions for BS ACPR, spurious emissions, transmit intermodulation and intra-BS intermodulation have been proposed to be used in S4.01B.