**3GPP TSG-RAN WG4 Meeting # 106-bis-e R4-230**

**Electronic Meeting, 17 April –26 April, 2023**

**Agenda item:** 5.15.3

**Source:** Nokia

**Title:** WF on UE RF requirements

**Document for:** Approval

# 1 Introduction

This contribution is a WF for remaining UE RF issues for NR\_FR1\_lessthan\_5MHz\_BW work item excluding A-MPR which will be discussed in next RAN4 meeting. Earlier agreements are used as a baseline [1] apart from MPR where a need for minor change was requested.

# 2 Issues

**2.1 MPR:** Increase edge RB allocation MPR for pi/2 BPSK from 0.5 dB to 1 dB for 3 MHz channel bandwidth.

**2.2 Minimum output power:** -40 dBm is adopted also for 3 MHz BW

**2.3 Spectrum emission mask**: Adopt SEM for 3 MHz channel bandwidth as shown in Table 1, i.e. aligned with LTE

**Table 1: SEM for 3 MHz channel bandwidth**

|  |  |  |
| --- | --- | --- |
| **Spectrum emission limit (dBm)/ Channel bandwidth** | | |
| **ΔfOOB**  **(MHz)** | **3.0**  **MHz** | **Measurement bandwidth** |
| ± 0-1 | -13 | 30 kHz |
| ± 1 – 5 | -10 | 1 MHz |
| ± 5 – 6 | -25 | 1 MHz |

**2.4 UE coexistence:** No need to modify notes in Ue to Ue co-ex table Table 6.5.3.2-1. This may change once Japanese regulation is clear.

**2.5 REFSENS:** 3 MHz channel bandwidth is defined as below

n26 = -99.7 dBm

n28 = -100.2 dBm

n85 = -99.2 dBm

n100 = -102.2 dBm

**2.6 ACS:** Define ACS are in tables below.

Table 7.5-1: ACS for NR bands with FDL\_high < 2700 MHz and FUL\_high < 2700 MHz

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RX parameter | Units | Channel bandwidth (MHz) | | |
| 3, 5, 10 | 15 | 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 |
| ACS | dB | 33 | 30 | 27 – 10log10(BWChannel /20) |
| NOTE1: ACS value is rounded to the next higher 0.5dB value | | | | |

Table 7.5-3: Test parameters for NR bands with FDL\_high < 2700 MHz and FUL\_high < 2700 MHz, case 1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| RX parameter | Units | Channel bandwidth (MHz) | | | |
|  |  | 3 | 5, 10 | 15 | 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 |
| Power in transmission bandwidth configuration | dBm | REFSENS + 14 dB | | | |
| Pinterferer4 | dBm | REFSENS + 45.5 dB | REFSENS + 45.5 dB | REFSENS + 42.5 dB | REFSENS + 39.5 – 10log10(BWChannel /20) |
| BWinterferer | MHz | 3 | 5 | | |
| Finterferer (offset) | MHz | -3 / 3 | BWChannel /2 + 2.5  /  -(BWChannel /2 + 2.5) | | |
| NOTE 1: The transmitter shall be set to 4 dB below PCMAX\_L,f,c at the minimum UL configuration specified in Table 7.3.2-3 with PCMAX\_L,f,c defined in clause 6.2.4.  NOTE 2: The absolute value of the interferer offset Finterferer (offset) shall be further adjusted to MHz with SCS the sub-carrier spacing of the wanted signal in MHz. The interferer is an NR signal with 15 kHz SCS.  NOTE 3: The interferer consists of the NR interferer RMC specified in Annexes A.3.2.2 and A.3.3.2 with one sided dynamic OCNG Pattern OP.1 FDD/TDD for the DL-signal as described in Annex A.5.1.1/A.5.2.1.  NOTE 4: 10log10(x) is rounded to the next higher 0.5dB value. | | | | | |

**2.7 FRC:** Add FRCs from R4-2304575 as a baseline.

# 3 References

[1] R4-2303655, WF for UE RF requirements for 3 MHz, RAN4#106