**3GPP TSG-RAN WG4 Meeting #116 R4-2511738**

**Bengaluru, India, August 25th – 29th, 2025**

**Source:** vivo

**Title:** draft TP to TS 38.191 on device unwanted emission

**Agenda Item:** 7.22.3.2

**Document for:** Approval

1. Introduction

In this contribution, we update the TS based on the agreements in the meeting.

1. Text proposal

**<<Start of Change>>**

6.4 Output RF spectrum emissions

6.4.1 Out of band emissions

6.4.1.1 General

The Out of band emissions are unwanted emissions immediately outside the assigned channel bandwidth resulting from the modulation process and non-linearity in the transmitter but excluding spurious emissions.

6.4.1.2 Spectrum emission mask

The spectrum emission mask of the device applies to frequencies (ΔfOOB) starting from the centre of the assigned D2R channel bandwidth. For frequencies offset greater than ΔfOOB as specified in Table 6.4.1.2-1 the spurious requirements in clause 6.4.2 are applicable.

The emission within ΔfOOB of any device 1 shall lower than the level specified in Table 6.4.1.2-1 compared to the D2R backscatter power under same incident CW power level. The requirement is verified with the test metric of EIRP with the incident CW power level at device is set to -5 dBm. The test direction is same as the transmitter output power as specified in clause 6.2.

Table 6.4.1.2-1 Spectrum emission mask for device 1.

|  |  |  |  |
| --- | --- | --- | --- |
| D2R channel bandwidth | ΔfOOB  (MHz) | Spectrum emission limit (dBc) | Measurement bandwidth |
| D2R CBW<1.4 MHz | ± 0.5\*D2R CBW - max(500kHz, 10\*D2R CBW) | 10 | 0.5\* Nominal D2R transmission  Bandwidth without SFO |
| D2R CBW≥1.4 MHz | ± 0.5\*D2R CBW -7.5 MHz |

Table 6.4.1.2-1 Spectrum emission mask for device 1 (Alt-2).

|  |  |  |
| --- | --- | --- |
| ΔfOOB  (MHz) | Spectrum emission limit (dBc) | Measurement bandwidth |
| ± 0.5\*D2R CBW - FOOB | 10 | 0.5\* Nominal D2R transmission  Bandwidth without SFO |
| NOTE 1: FOOB is the OOB boundary frequency specified in Table 6.4.1.2-1. | | |

6.4.2 Spurious emissions

Spurious emissions are emissions which are caused by unwanted transmitter effects but exclude out of band emissions unless otherwise stated. The spurious emission limits are specified in terms of general requirements in line with SM.329 [x].

Unless otherwise stated, the spurious emission limits apply for the frequency ranges that are more than FOOB (MHz) in Table 6.4.1.2-1 from the centre of the D2R channel bandwidth. The spurious emission limits in Table 6.4.1.2-2 apply for all D2R channel bandwidths. The requirement is verified with the test metric of EIRP under the incident CW power level at device is set to -5 dBm. The test direction is same as the transmitter output power as specified in clause 6.2.

Table 6.4.1.2-1: Boundary between out of band and spurious emission domain for device 1

|  |  |
| --- | --- |
| D2R Channel bandwidth | OOB boundary FOOB (MHz) |
| D2R CBW<1.4 MHz | max(500kHz, 10\*D2R CBW) |
| D2R CBW≥1.4 MHz | 7.5 MHz |

Table 6.4.1.2-2: Requirement for spurious emissions limits

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency Range | Maximum Level | Measurement bandwidth | NOTE |
| 30 MHz ≤ f < 1000 MHz | -36 dBm | 100 kHz |  |
| 1 GHz ≤ f < 5 GHz | -30 dBm | 1 MHz |  |
| 5 GHz ≤ f < 12.75 GHz | -30 dBm | 1 MHz | 1 |
| NOTE 1: Applies for Band for which the upper frequency edge of the UL Band is greater than 1 GHz and less than or equal to 2.55 GHz. | | | |

**<<End of Change>>**

1. Reference