**3GPP TSG-RAN WG4 Meeting#98-e R4-2103397**

**E-meeting,25th Jan – 5th Feb, 2021, 2021**

**Agenda item: 10.1.1**

**Source: ZTE, Qualcomm,Huawei,CATT,Nokia, Nokia Shanghai Bell**

**Title: TP to TR 38.921 UE transmitter requirements**

**Document for:** **Approval**

1. Introduction

This paper provides a TP for TR 38.921 to capture the agreements [1] and proposals to resolve the remaining open issues.

1. References
2. R4-2016905, WF on BS and UE parameters for 6.425-7.125 and 10.0-10.5 GHz, Nokia, approved.

# TP to TR 38.921

#### < START OF CHANGE>

7.1 Transmitter characteristics

7.1.1 Power dynamic range

The minimum controlled output power of the UE is defined as the power in the channel bandwidth for all transmit bandwidth configurations (resource blocks), when the power is set to a minimum value. For existing FR1 bands, the minimum output power is -33 dBm for 100 MHz channel bandwidth. The minimum output power can be reused for both frequency ranges, 6.425-7.125GHz and 10.0-10.5GHz, i.e. power dynamic range is 56 dB for 100 MHz channel bandwidth.

7.1.2 Spectral mask

The spectral mask for 6.425-7.125GHz and 10.0-10.5GHz is defined in below table which is relaxed general NR FR1 spectrum at the FOOB edge ± 0-5MHz by 3dB.

Table 7.1.2-1: Spectrum emission mask for 6.425-7.125GHz and 10.0-10.5GHz

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Spectrum emission limit (dBm) / Channel bandwidth | | | | | | | | | | |
| ΔfOOB  (MHz) | 20  MHz | 25  MHz | 30  MHz | 40  MHz | 50  MHz | 60  MHz | 70  MHz | 80  MHz | 90  MHz | 100  MHz | Measurement bandwidth |
| ± 0-1 | -10 | -10 | -10 | -10 |  |  |  |  |  |  | 1 % channel bandwidth |
| ± 0-1 |  |  |  |  | -21 | -21 | -21 | -21 | -21 | -21 | 30 kHz |
| ± 1-5 | -7 | -7 | -7 | -7 | -7 | -7 | -7 | -7 | -7 | -7 | 1 MHz |
| ± 5-6 | -13 | -13 | -13 | -13 | -13 | -13 | -13 | -13 | -13 | -13 |  |
| ± 6-10 |  |  |  |  |  |  |  |  |  |  |  |
| ± 10-15 |  |  |  |  |  |  |  |  |  |  |  |
| ± 15-20 |  |  |  |  |  |  |  |  |  |  |  |
| ± 20-25 | -25 |  |  |  |  |  |  |  |  |  |  |
| ± 25-30 |  | -25 |  |  |  |  |  |  |  |  |  |
| ± 30-35 |  |  | -25 |  |  |  |  |  |  |  |  |
| ± 35-40 |  |  |  |  |  |  |  |  |  |  |  |
| ± 40-45 |  |  |  | -25 |  |  |  |  |  |  |  |
| ± 45-50 |  |  |  |  |  |  |  |  |  |  |  |
| ± 50-55 |  |  |  |  | -25 |  |  |  |  |  |  |
| ± 55-60 |  |  |  |  |  |  |  |  |  |  |  |
| ± 60-65 |  |  |  |  |  | -25 |  |  |  |  |  |
| ± 65-70 |  |  |  |  |  |  |  |  |  |  |  |
| ± 70-75 |  |  |  |  |  |  | -25 |  |  |  |  |
| ± 75-80 |  |  |  |  |  |  |  |  |  |  |  |
| ± 80-85 |  |  |  |  |  |  |  | -25 |  |  |  |
| ± 85-90 |  |  |  |  |  |  |  |  |  |  |  |
| ± 90-95 |  |  |  |  |  |  |  |  | -25 |  |  |
| ± 95-100 |  |  |  |  |  |  |  |  |  |  |  |
| ± 100-105 |  |  |  |  |  |  |  |  |  | -25 |  |

For the last 5MHz of UE SEM, it is agreed that we might revisit the value pending MRP definition in WI phase.

7.1.3 ACLR

According to the simulation results in clause 4.3, it is agreed to specify 26 dB ACLR for 6.425-7.125GHz and 24 dB ACLR for 10.0-10.5GHz.

7.1.4 Spurious emissions

The general spurious emissions defined in TS 38.101-1 clause 6.5.3.1 can apply to both frequency ranges, 6.425-7.125GHz and 10.0-10.5GHz.

* 30MHz ≤ f ≤ 1 GHz: -36dBm/100kHz
* 1 GHz ≤ f ≤ 26 GHz: -30dBm/1MHz

7.1.5 Maximum output power

TR 38.820 indicates that 23dBm is feasible at 10-10.5GHz and this is an assumption for co-existence analysis. Hence the UE maximum output power for the considered frequency ranges could be 23dBm. Other UE power classes are not precluded for both frequency ranges, 6.425-7.125GHz and 10.0-10.5GHz.

7.1.6 Average output power

It was agreed the average output power won’t be mentioned in the reply LS to WP5D.

7.2 Receiver characteristics

7.2.1 Noise figure

The noise figure of 9dB is the baseline assumption and 13dB is the optional assumption for co-existence study for 6425-7125MHz and 10-10.5GHz.

The noise figure value of [XXX] are finally agreed for reporting to ITU WP5D sharing studies. Note that the noise figure value of [XXX] shall be used only for WP5D response. The actual noise figure to be used to define RF requirements shall be further studied in the WI phase.

7.2.2. Sensitivity

The sensitivity is not a critical parameter for sharing and compatibility studies. It was agreed to not mention any value for this parameter.

7.2.3 Blocking response

The blocking characteristic specified in clause 7.6 of TS 38.101-1 for frequency larger than 3300 MHz could be applied for 6425-7125MHz and 10-10.5GHz.

7.2.4 ACS

According to the simulation results in clause 4.3, Adjacent channel selectivity (ACS) is agreed as 32dBc for 6425-7125MHz and 31dBc for 10-10.5GHz.

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