**3GPP TSG-RAN WG4 Meeting # 102-e R4-220xxxx**

**Electronic Meeting, February 21 – March 3, 2022**

Source: CMCC

Title: WF on FR1 OOB gain and ACRR

Agenda Item: 10.5.2

Document for: Approval

# Introduction

During RAN4#102 e-meeting, ACRR and OOB gain have been discussed in RAN4.

For OOB gain, it seems there is no other controversial issues. So this WF merge the agreement of GTW and the tentative agreement based on 1st round discussion.

For ACRR, although we make some progress in the GTW. There are still controversial issues. Hope we could move forward.

# OOB gain

## WA / MR repeater class for both DL and UL

* + 1. For below 2496MHz frequencies

Follow same OOB gain as E-UTRA:

**Table 1: out of band gain limits 1**

|  |  |
| --- | --- |
| **Frequency offset, f\_offset\_CW** | **Maximum gain** |
| 0,2 ≤ f\_offset\_CW < 1,0 MHz | 60 dB |
| 1,0 ≤ f\_offset\_CW < 5,0 MHz | 45 dB |
| 5,0 ≤ f\_offset\_CW < 10,0 MHz | 45 dB |
| 10,0 MHz ≤ f\_offset\_CW | 35 dB |

For 10,0 MHz ≤ f\_offset\_CW the out of band gain shall not exceed the maximum gain of table 1 or the maximum gain stated in table 2 whichever is lower.

**Table 2: Out of band gain limits 2**

|  |  |
| --- | --- |
| **Frequency offset, f\_offset\_CW** | **Maximum gain** |
| 10 MHz ≤ f\_offset\_CW | Out of band gain ≤ minimum donor coupling loss |

* + 1. For above 2496MHz frequencies

Follow following limits:

|  |  |
| --- | --- |
| Frequency offset, f\_offset\_CW | Maximum gain |
| 0,2< f\_offset\_CW < 4,0 MHz | 60 dB |
| 4,0< f\_offset\_CW < 15,0 MHz | 45 dB |
| 15,0 MHz <f\_offset\_CW | 35 dB |

## LA repeater class for both DL and UL

Two sets of requirements. Repeater declare which limit is supported based on the real deployment case.

* The first one: in which the operator owns the whole band or collaborates with operators in the whole band and so the repeater passband covers the whole 3GPP band
  + No OOB gain requirement

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* The second one: in which there are other un-coordinated operators in the band and so the repeater passband covers a portion of the 3GPP band.
  + Same OOB gain requirement as WA in this case

# ACRR

ACRR is differentiated between UL and DL. For ACRR, consider the co-existence scenario with NR, LTE and UTRAN system.

## UL

* For WA, 33dBc ACRR.
* For LA,
  + Whole passband: no ACRR
  + Part of band:
    - <2496MHz : 33dBc
    - >2496MHz:
      * ~~Option 1: 33dBc~~
      * Option 2: 20dBc in 10MHz BW, 33dBc with minimum {100 MHz, passband BW} (2 tests)
      * ~~Option 3: 20dBc~~

Please further check whether we could accept option 2.

## DL

* For below 2496MHz:
  + WA/MR class: [45]dBc
  + LA: NA for whole band case and [33]dBc for part of band case
* For above 2496MHz:
  + WA/MR class: [33]dBc
  + LA: NA for whole band case and [33]dBc for part of band case
* Note: RAN4 can further discuss the above tentative values and revisit the values if needed.

Please further check whether we could approve above agreements.