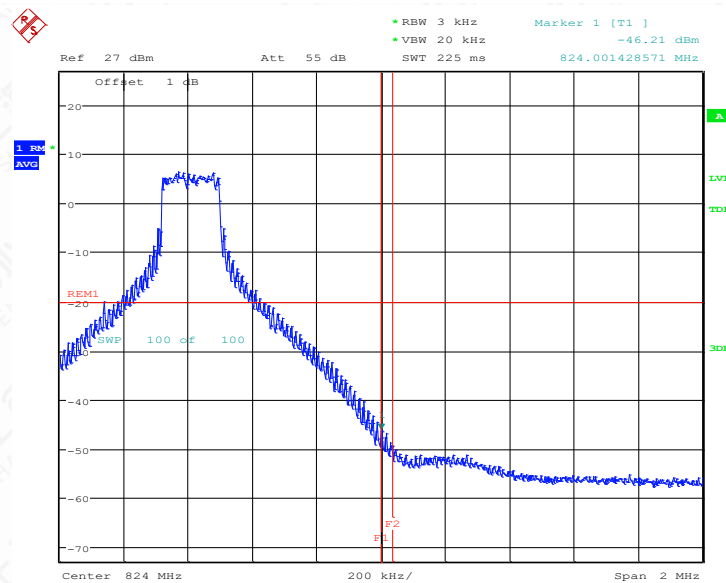
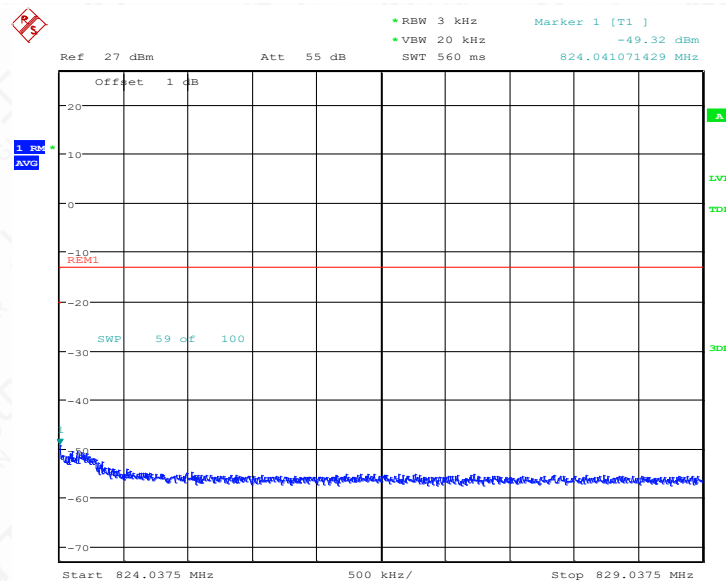




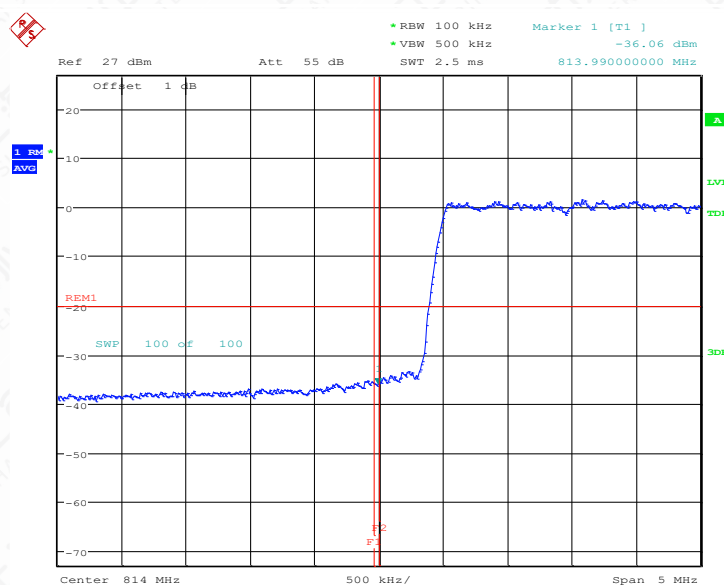
Date: 7.FEB.2023 15:30:08

## HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



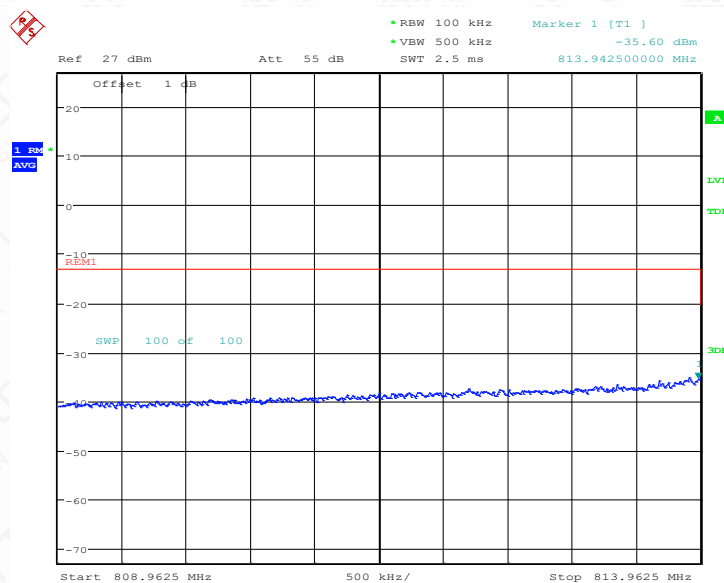
Date: 7.FEB.2023 15:31:56

LOW BAND EDGE BLOCK-10M-100%RB



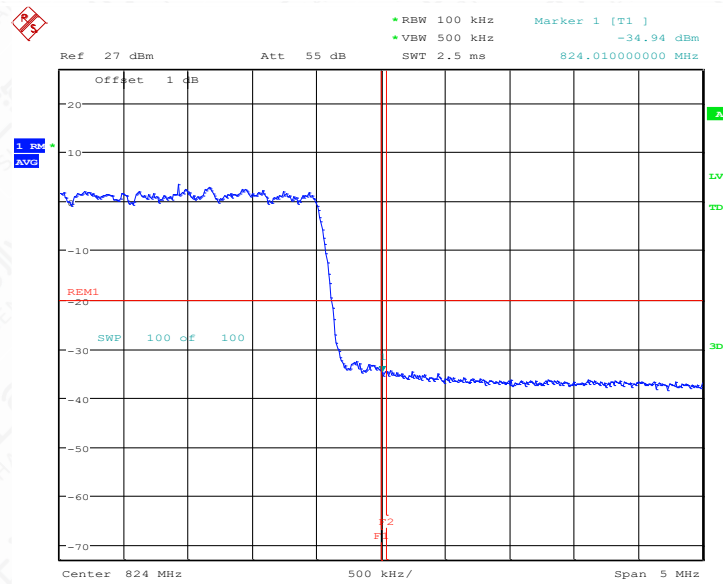
Date: 7.FEB.2023 15:27:56

LOW BAND EDGE BLOCK-10M-100%RB



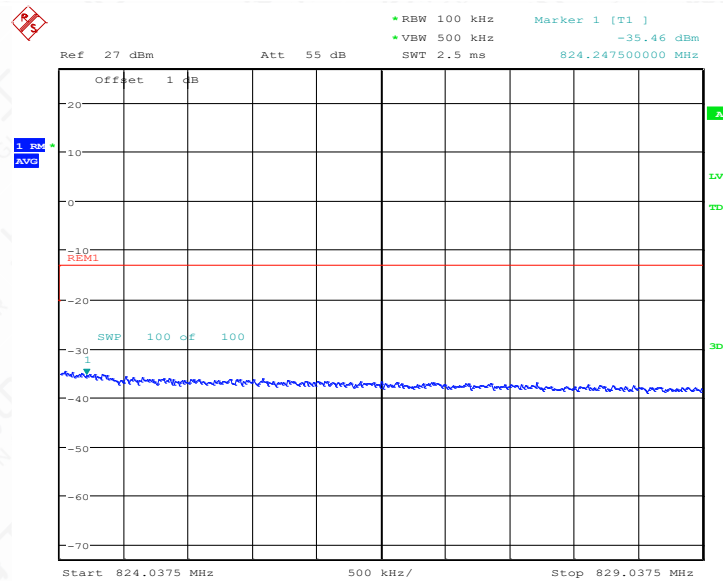
Date: 7.FEB.2023 15:28:39

## HIGH BAND EDGE BLOCK-10M-100%RB



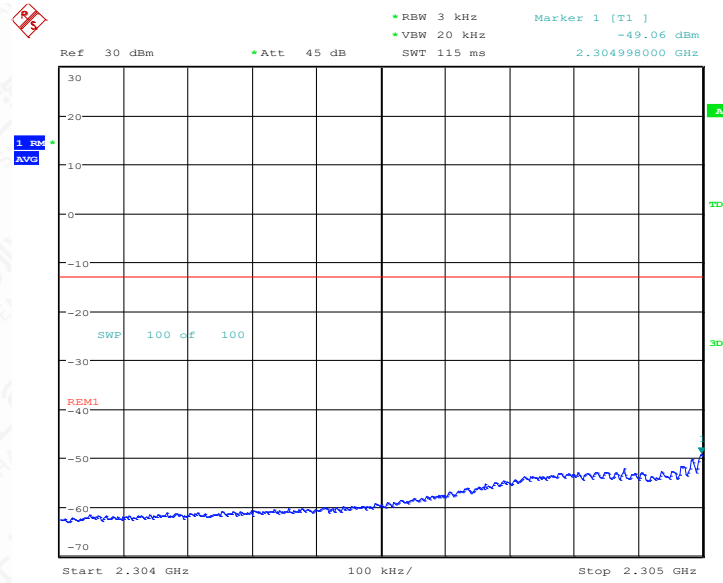
Date: 7.FEB.2023 15:32:40

### HIGH BAND EDGE BLOCK-10M-100%RB



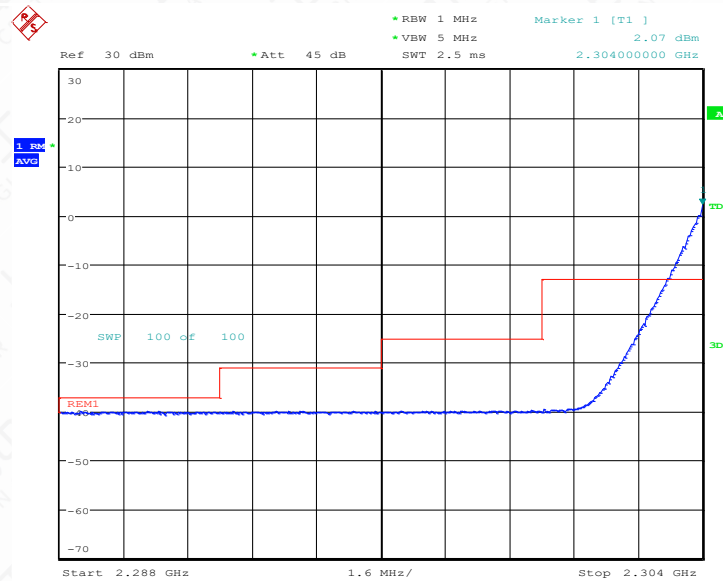
Date: 7.FEB.2023 15:33:23

### Band 30 LOW BAND EDGE BLOCK-1RB-LOW\_offset



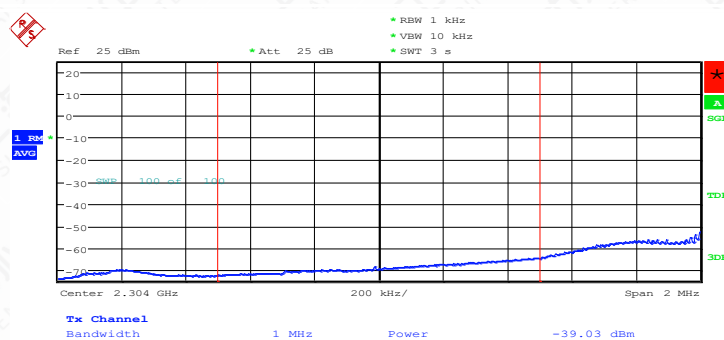
Date: 20.FEB.2023 09:14:01

### LOW BAND EDGE BLOCK-1RB-LOW\_offset



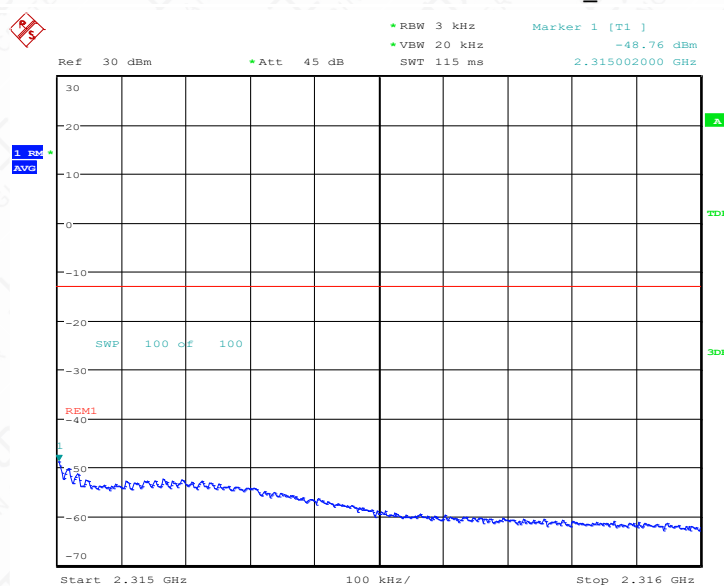
Date: 20.FEB.2023 09:14:45

Channel power



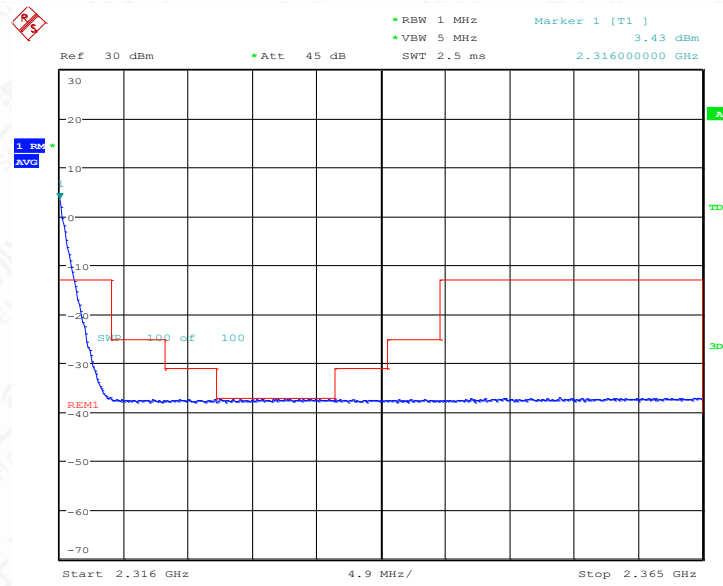
Date: 20.FEB.2023 09:19:51

## HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



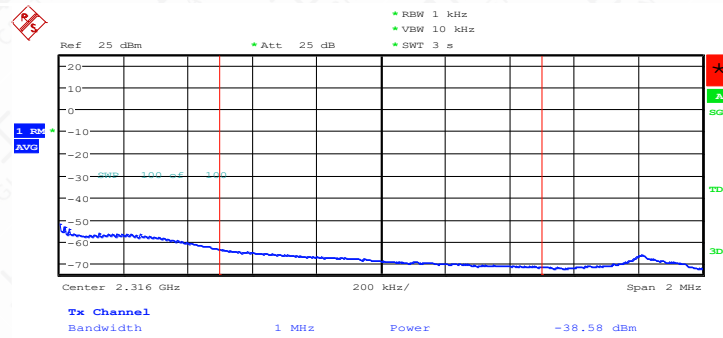
Date: 20.FEB.2023 09:30:10

## HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



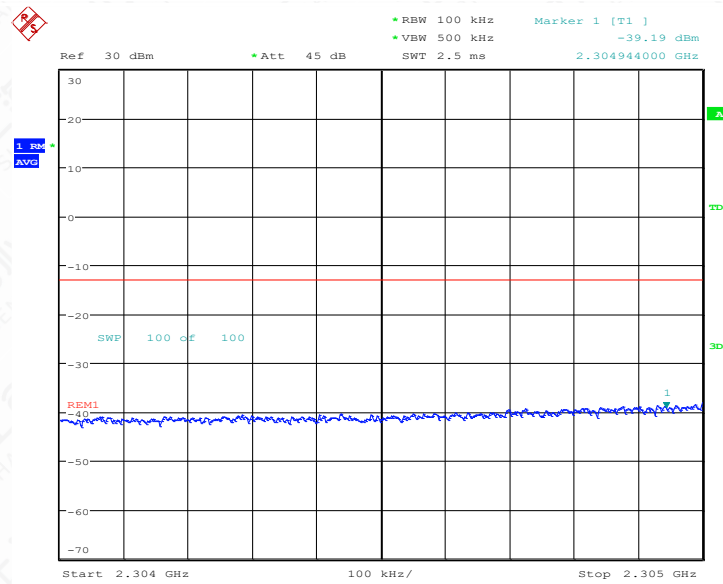
Date: 20.FEB.2023 09:30:55

### Channel power



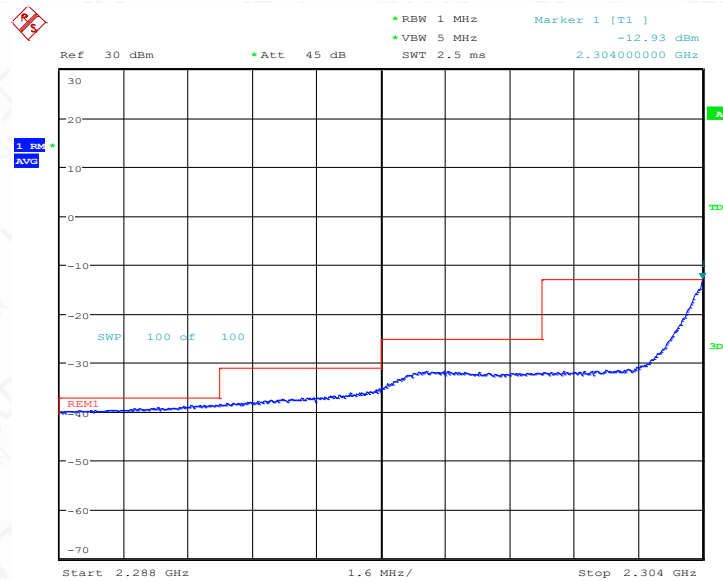
Date: 20.FEB.2023 09:36:03

### LOW BAND EDGE BLOCK-10M-100%RB



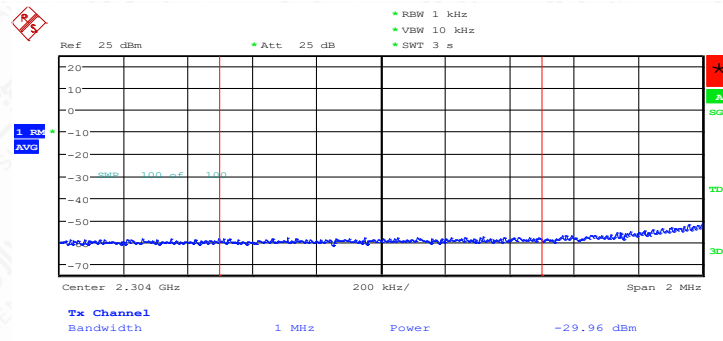
Date: 20.FEB.2023 09:21:51

### LOW BAND EDGE BLOCK-10M-100%RB



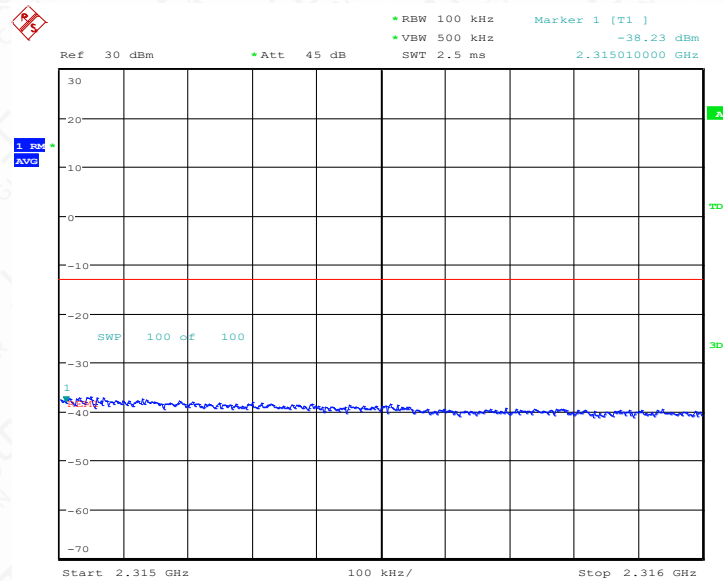
Date: 20.FEB.2023 09:22:36

Channel power



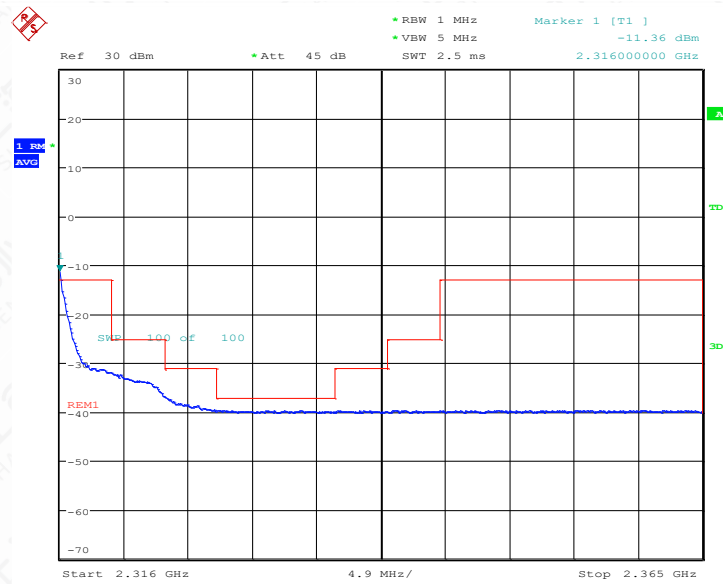
Date: 20.FEB.2023 09:27:41

### HIGH BAND EDGE BLOCK-10M-100%RB



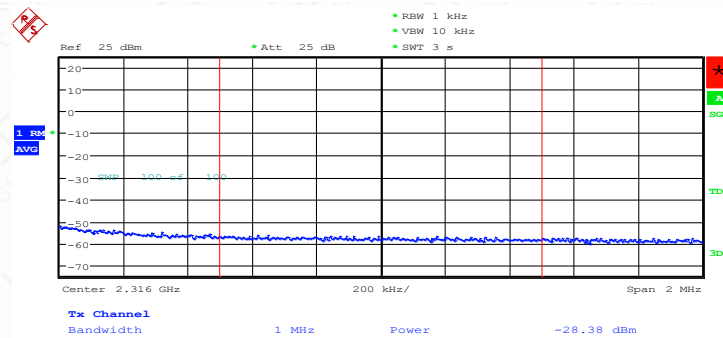
Date: 20.FEB.2023 09:37:12

### HIGH BAND EDGE BLOCK-10M-100%RB



Date: 20.FEB.2023 09:37:57

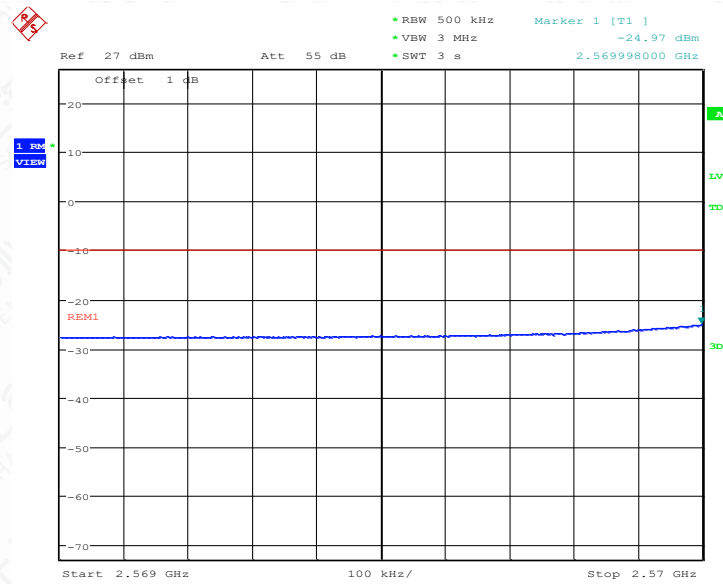
### Channel power



Date: 20.FEB.2023 09:43:05

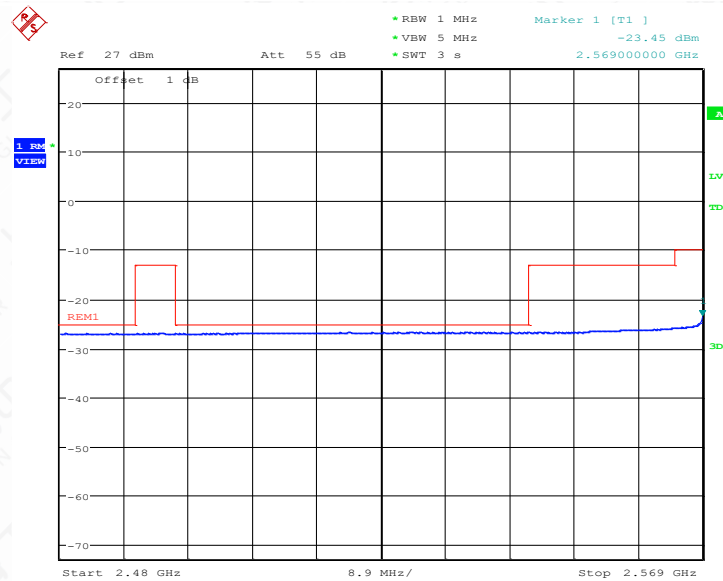
### LTE band 38

### LOW BAND EDGE BLOCK-20M-100%RB



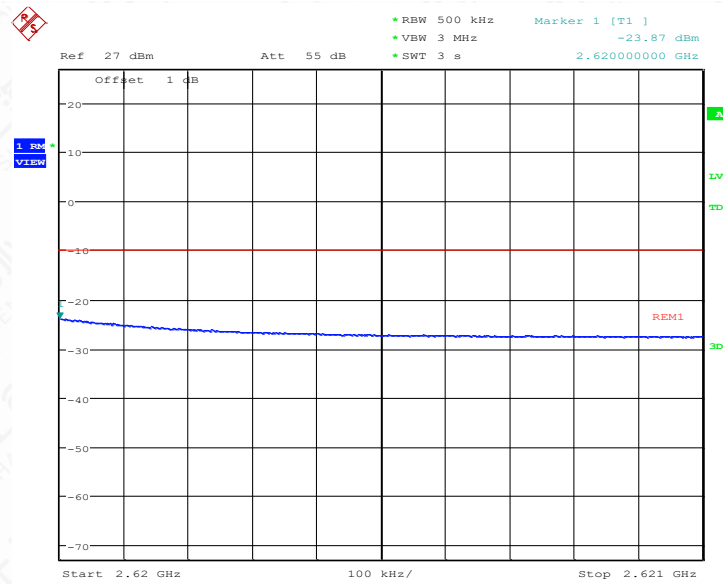
Date: 21.FEB.2023 16:20:49

### LOW BAND EDGE BLOCK-20M-100%RB



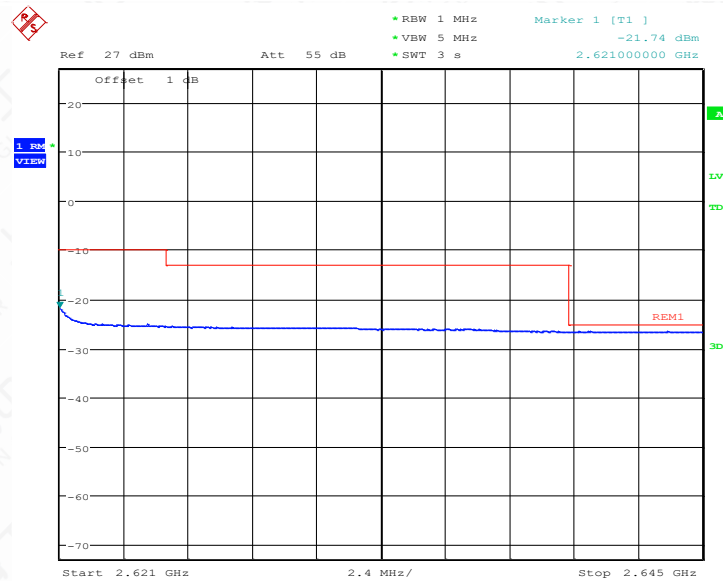
Date: 21.FEB.2023 16:21:31

### HIGH BAND EDGE BLOCK-20M-100%RB



Date: 21.FEB.2023 16:22:20

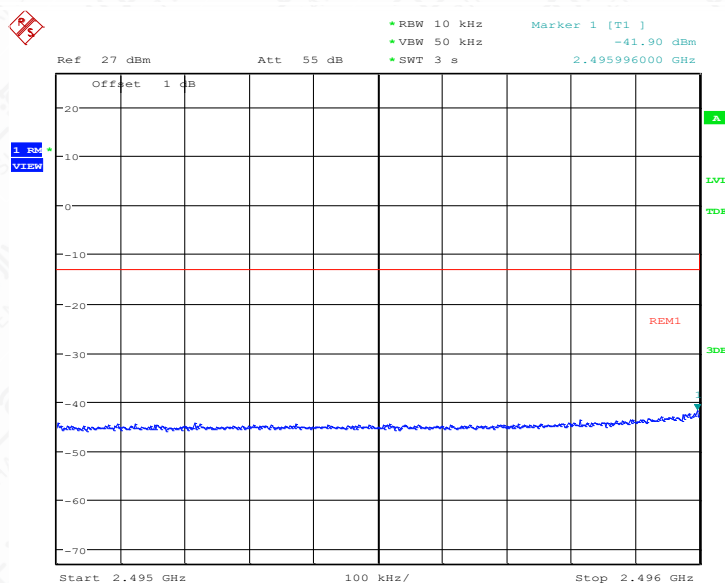
### HIGH BAND EDGE BLOCK-20M-100%RB



Date: 21.FEB.2023 16:23:02

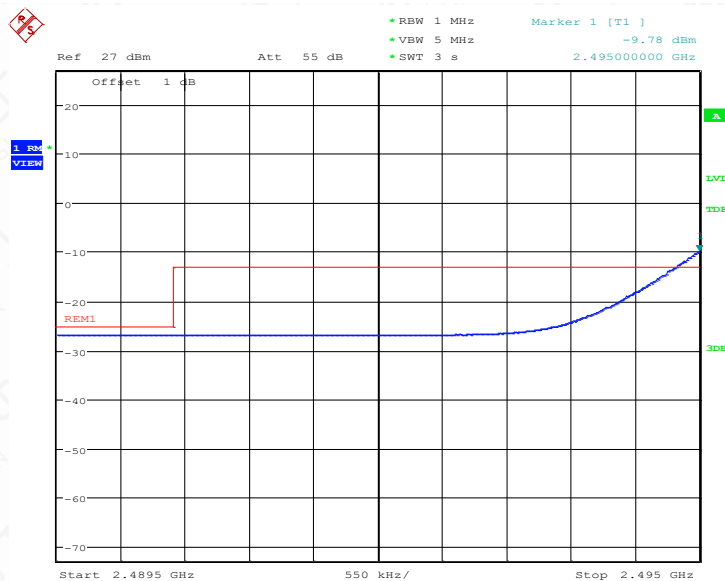
### LTE band 41

### LOW BAND EDGE BLOCK-1RB-LOW\_offset



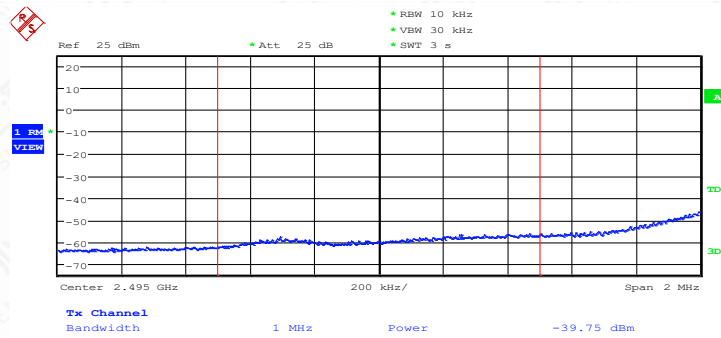
Date: 7.FEB.2023 12:36:56

### LOW BAND EDGE BLOCK-1RB-LOW\_offset



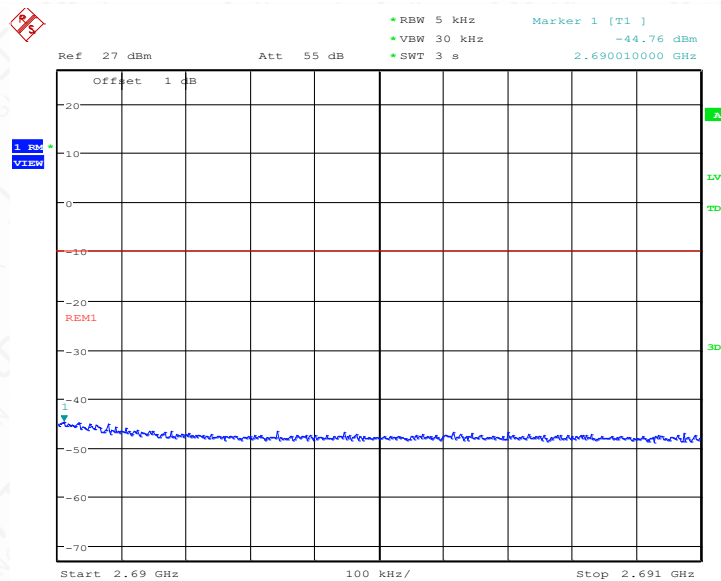
Date: 7.FEB.2023 12:37:38

Channel power



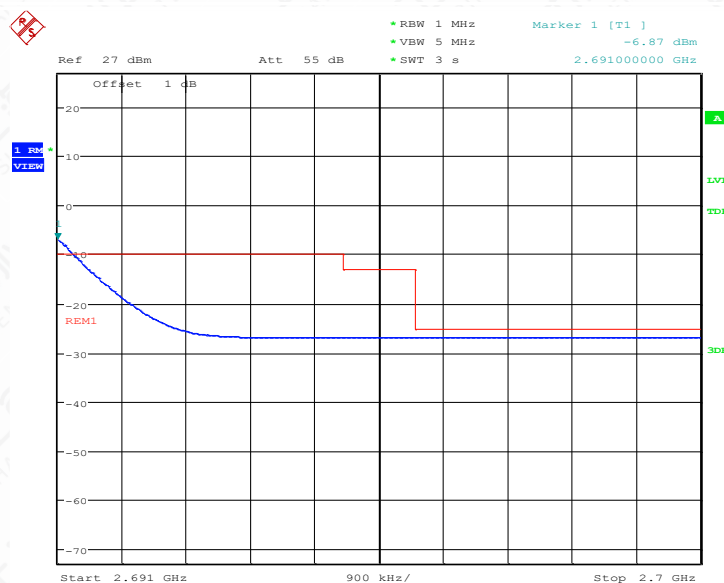
Date: 7.FEB.2023 12:38:03

### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



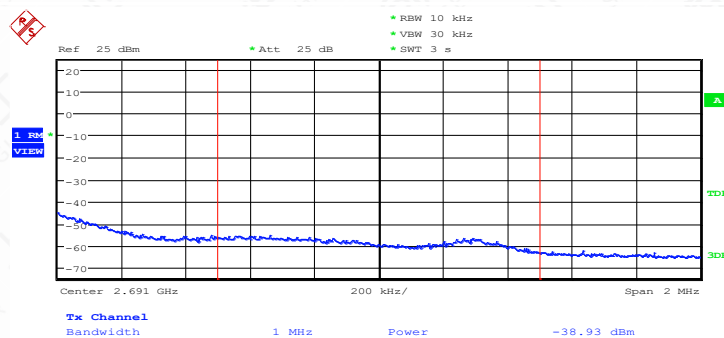
Date: 7.FEB.2023 12:40:39

### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



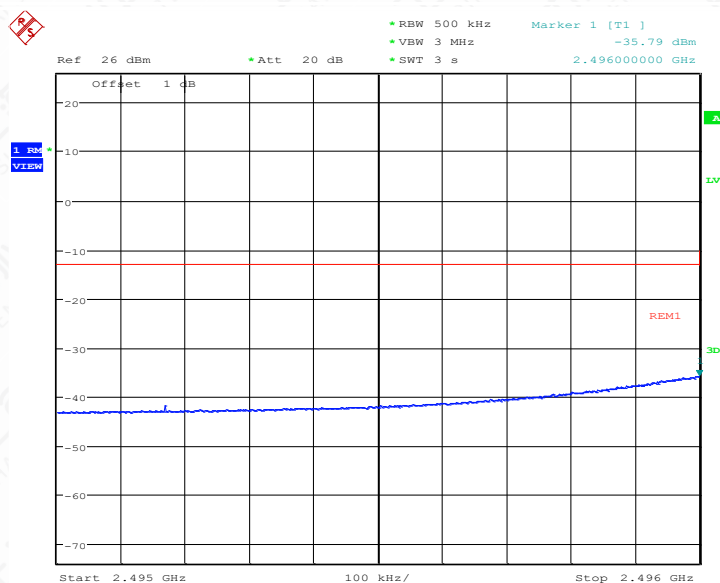
Date: 7.FEB.2023 12:41:23

Channel power



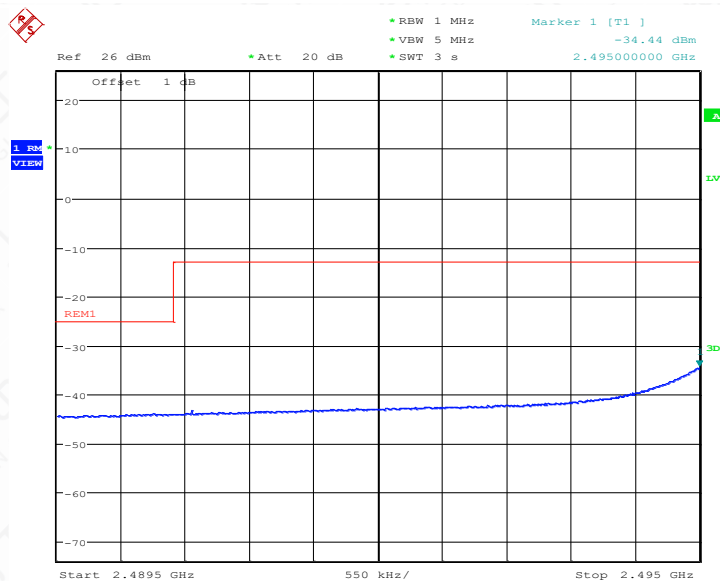
Date: 7.FEB.2023 12:41:49

LOW BAND EDGE BLOCK-20M-100%RB



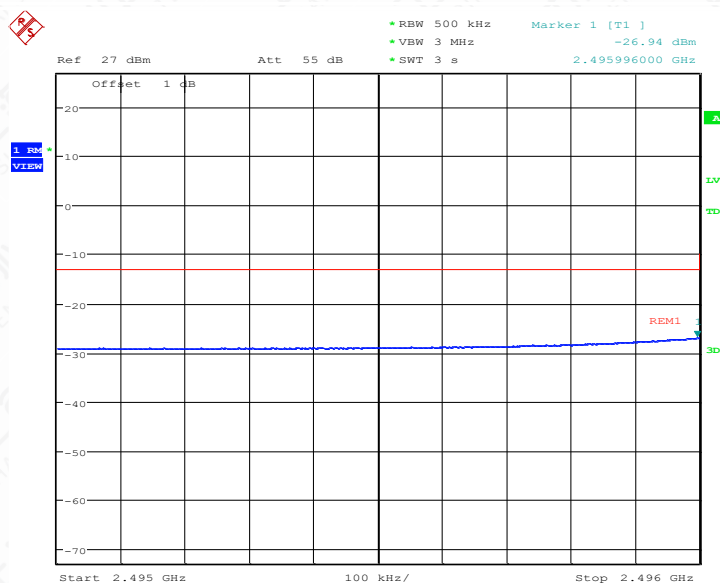
Date: 5.NOV.2022 00:45:39

#### LOW BAND EDGE BLOCK-20M-100%RB



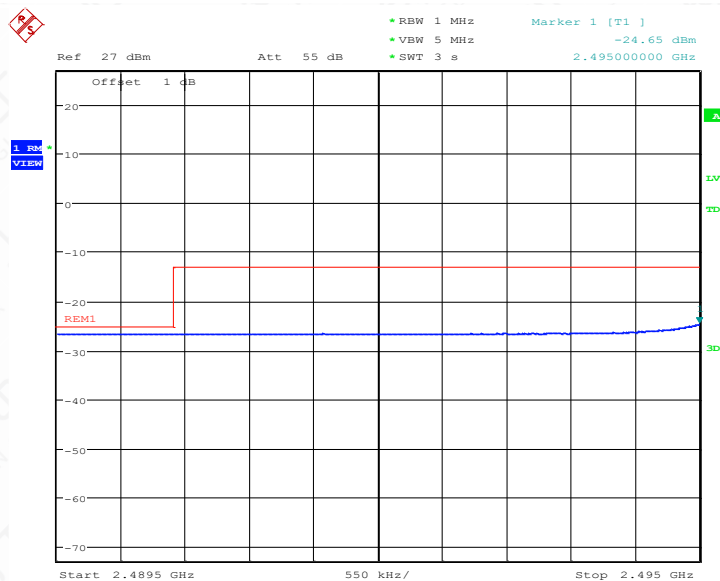
Date: 5.NOV.2022 00:46:22

#### LOW BAND EDGE BLOCK-20M-100%RB



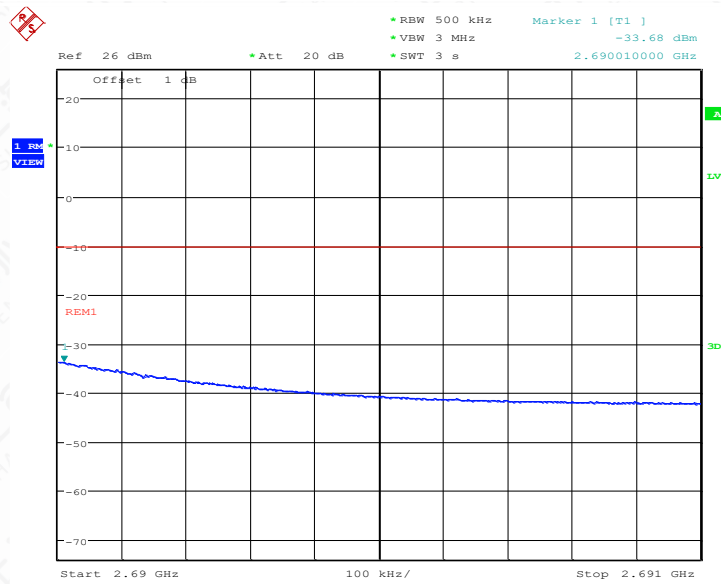
Date: 7.FEB.2023 12:38:47

### LOW BAND EDGE BLOCK-20M-100%RB



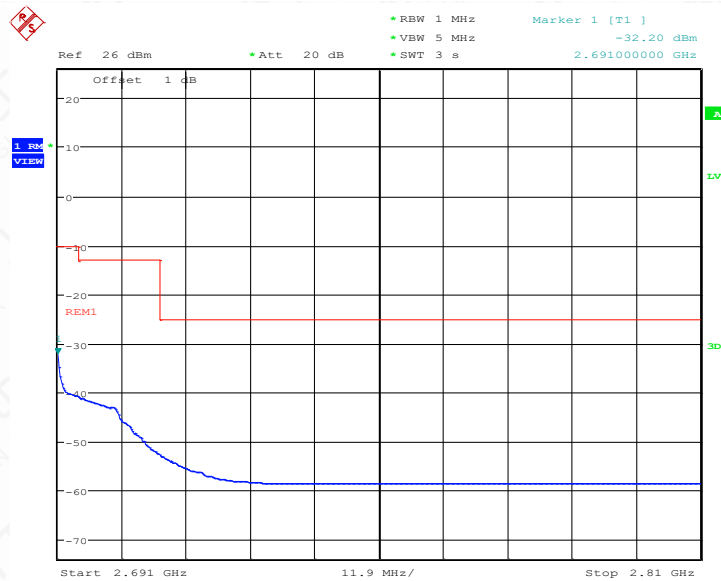
Date: 7.FEB.2023 12:39:31

### HIGH BAND EDGE BLOCK-20M-100%RB



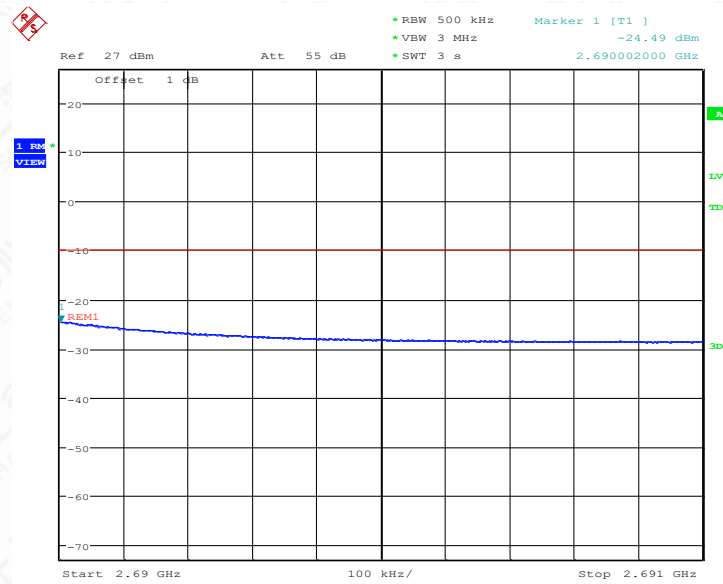
Date: 5.NOV.2022 00:47:12

### HIGH BAND EDGE BLOCK-20M-100%RB



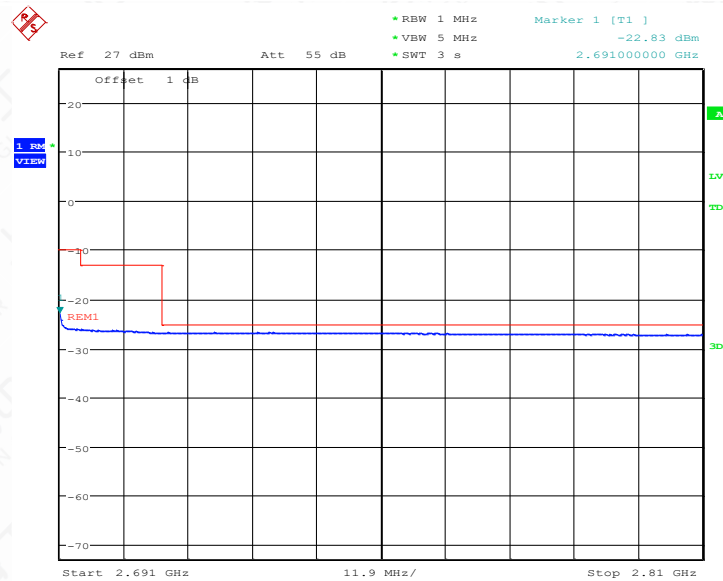
Date: 5.NOV.2022 00:47:54

### HIGH BAND EDGE BLOCK-20M-100%RB



Date: 7.FEB.2023 12:42:33

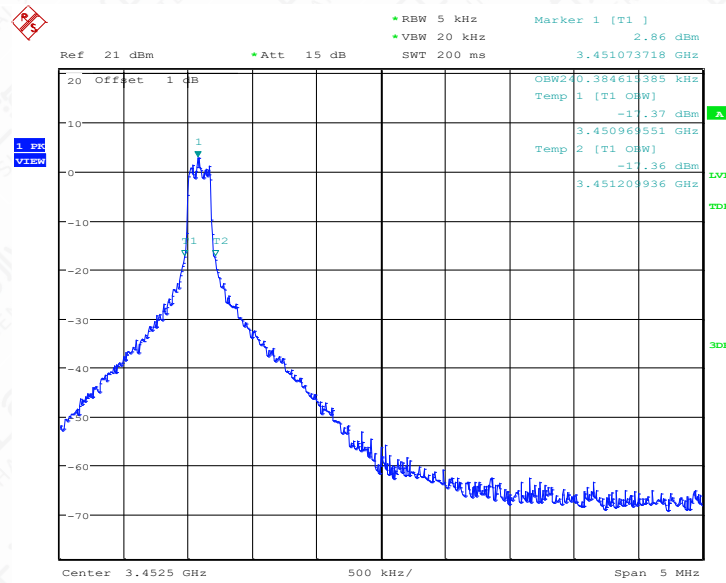
### HIGH BAND EDGE BLOCK-20M-100%RB



Date: 7.FEB.2023 12:43:16

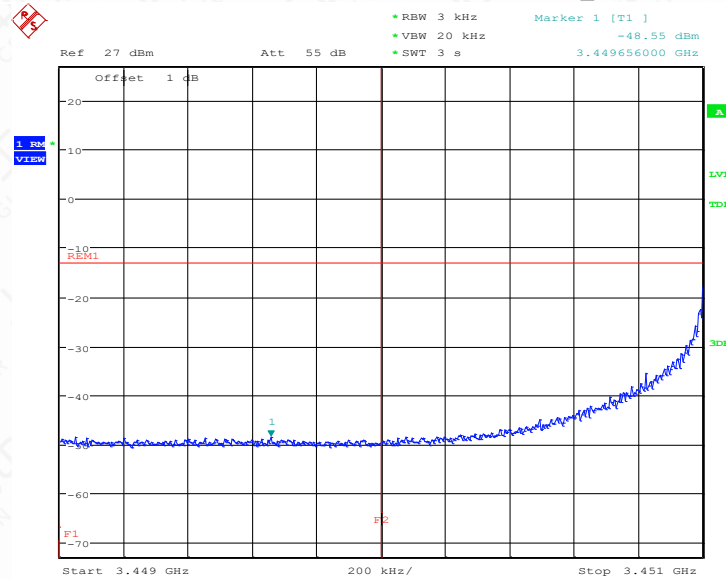
LTE band 42(part 27)

OBW: 1RB-LOW\_offset



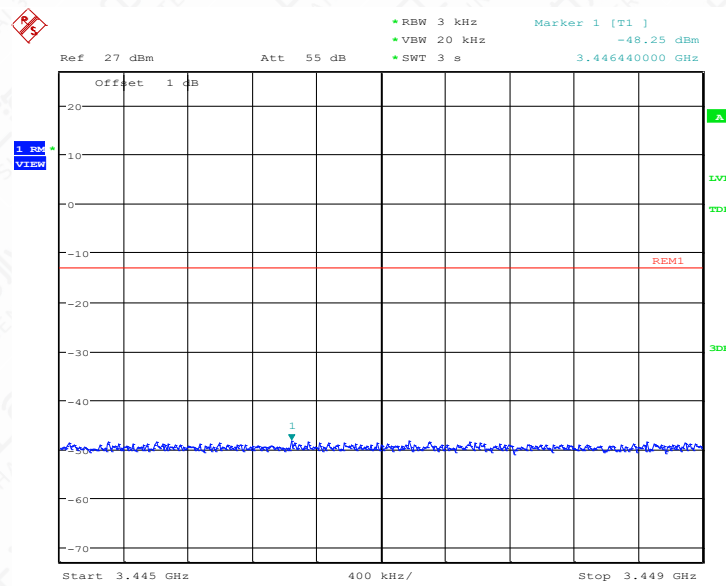
Date: 6.FEB.2023 17:13:06

### LOW BAND EDGE BLOCK-1RB-LOW\_offset

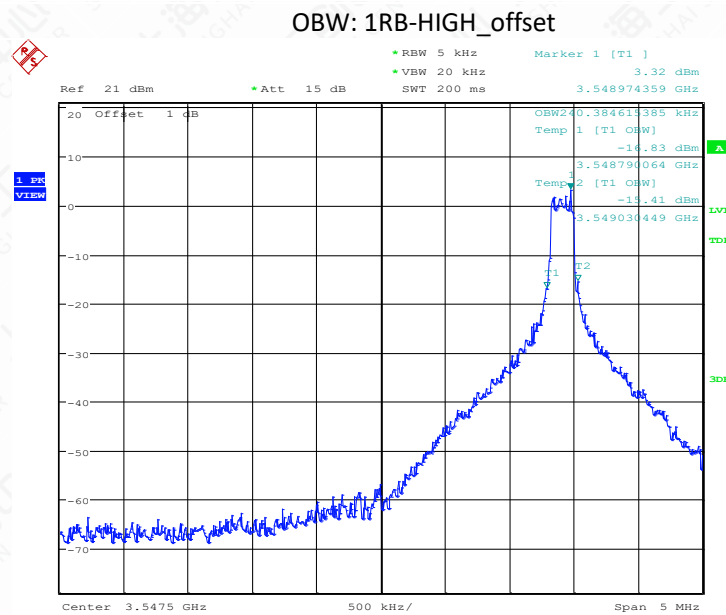


Date: 6.FEB.2023 17:13:51

### LOW BAND EDGE BLOCK-1RB-LOW\_offset

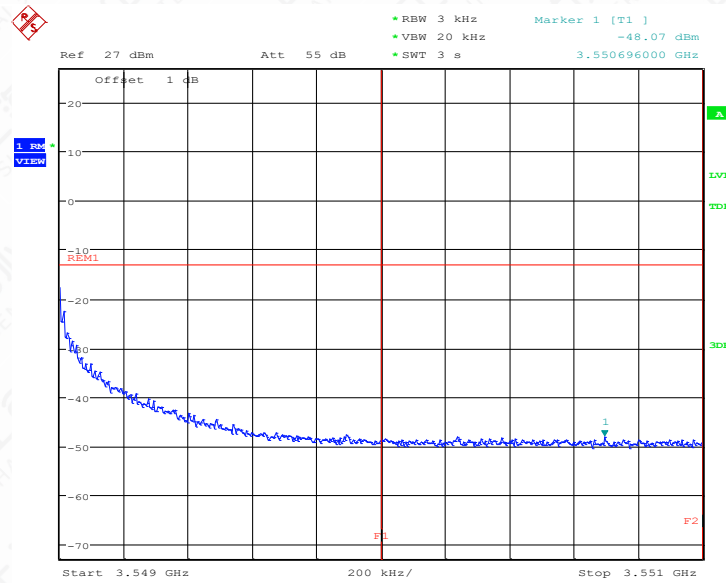


Date: 6.FEB.2023 17:14:34



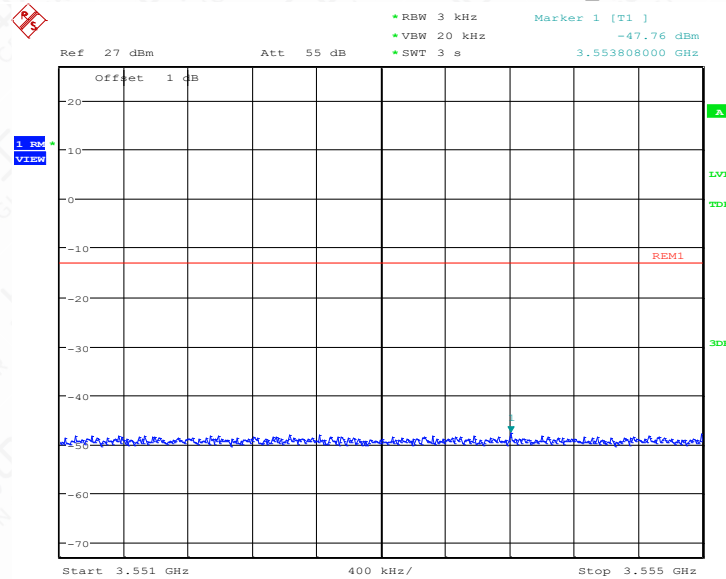
Date: 6.FEB.2023 17:16:30

### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



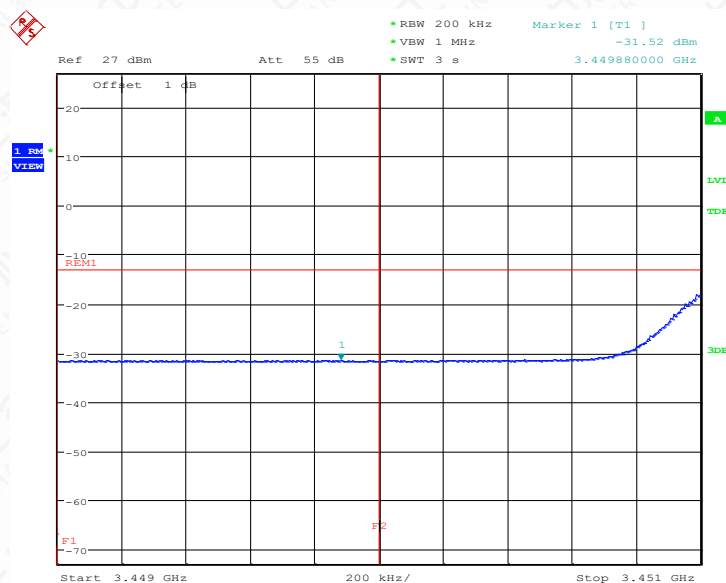
Date: 6.FEB.2023 17:17:14

### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



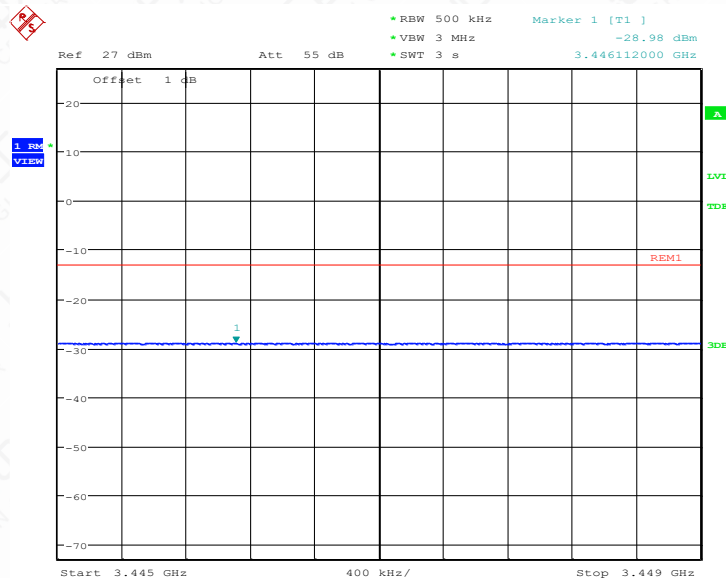
Date: 6.FEB.2023 17:17:58

### LOW BAND EDGE BLOCK-20M-100%RB



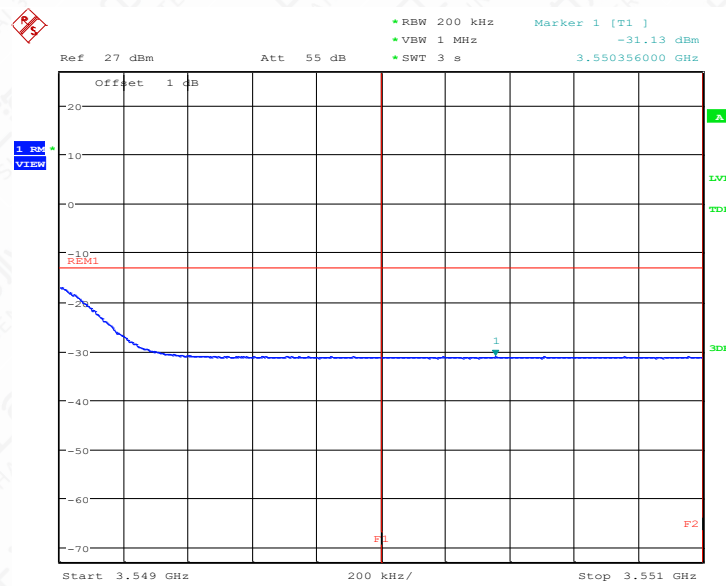
Date: 6.FEB.2023 17:15:20

### LOW BAND EDGE BLOCK-20M-100%RB

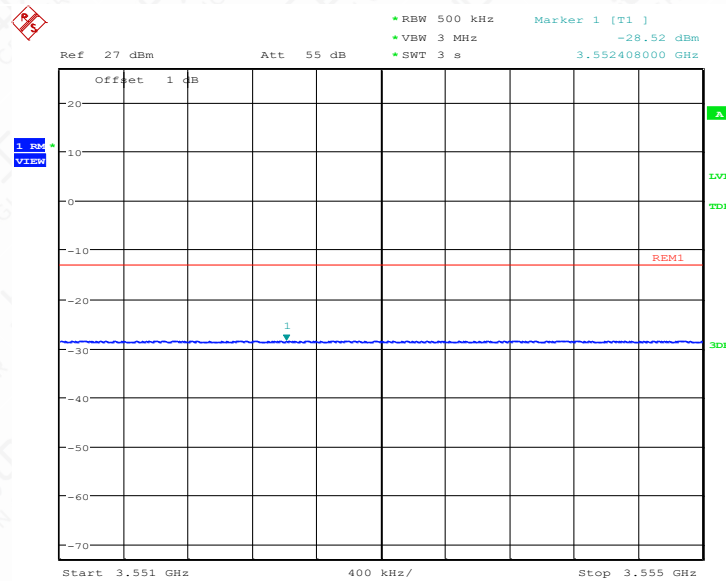


Date: 6.FEB.2023 17:16:04

### HIGH BAND EDGE BLOCK-20M-100%RB



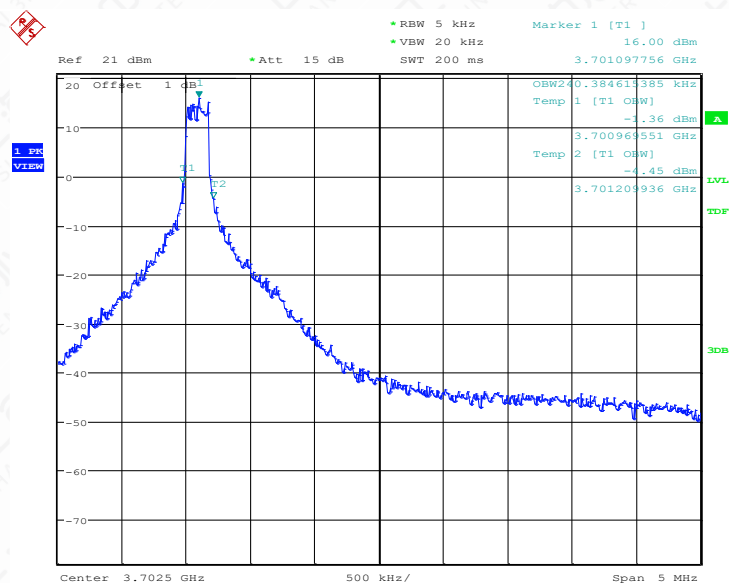
Date: 6.FEB.2023 17:18:44



Date: 6.FEB.2023 17:19:27

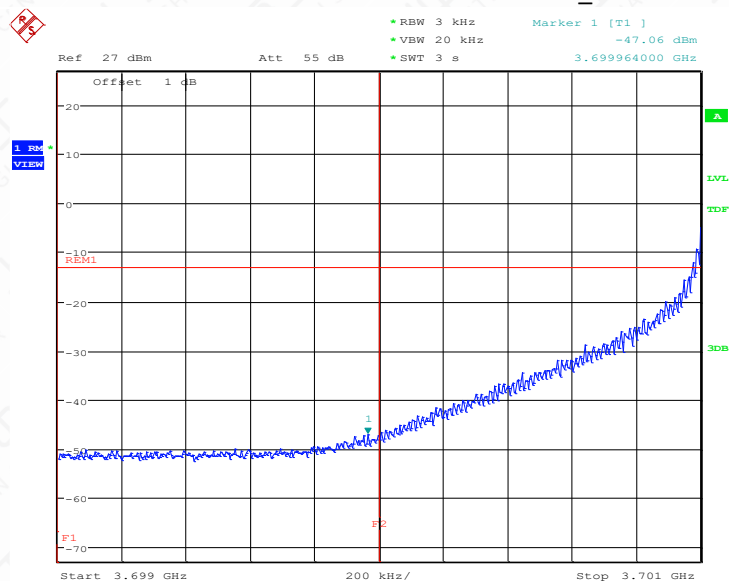
LTE band 43(part 27)

OBW: 1RB-LOW\_offset



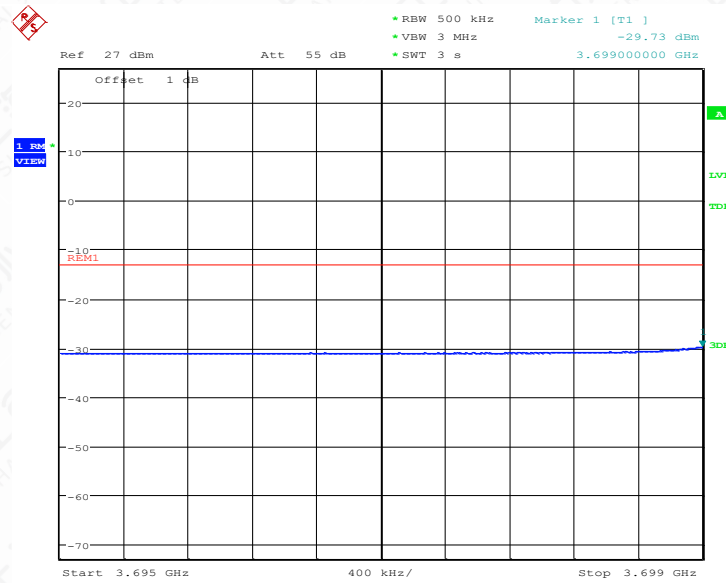
Date: 6.FEB.2023 17:35:50

### LOW BAND EDGE BLOCK-1RB-LOW\_offset

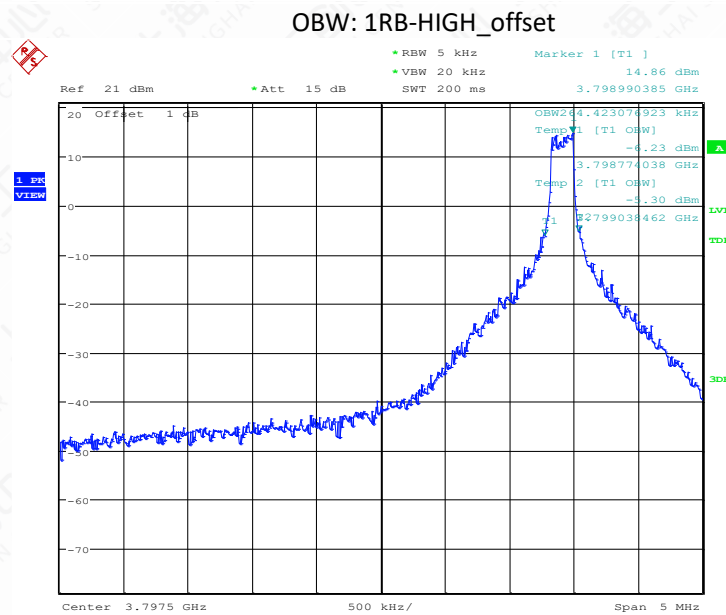


Date: 6.FEB.2023 17:36:34

### LOW BAND EDGE BLOCK-1RB-LOW\_offset

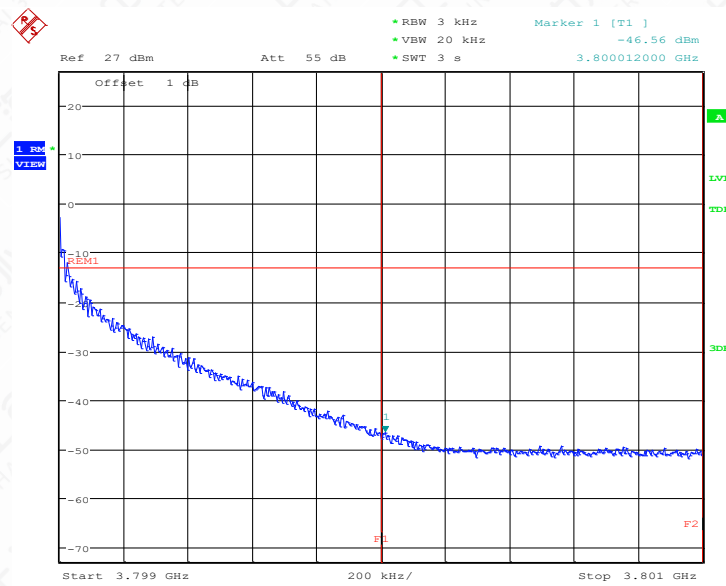


Date: 6.FEB.2023 17:37:18

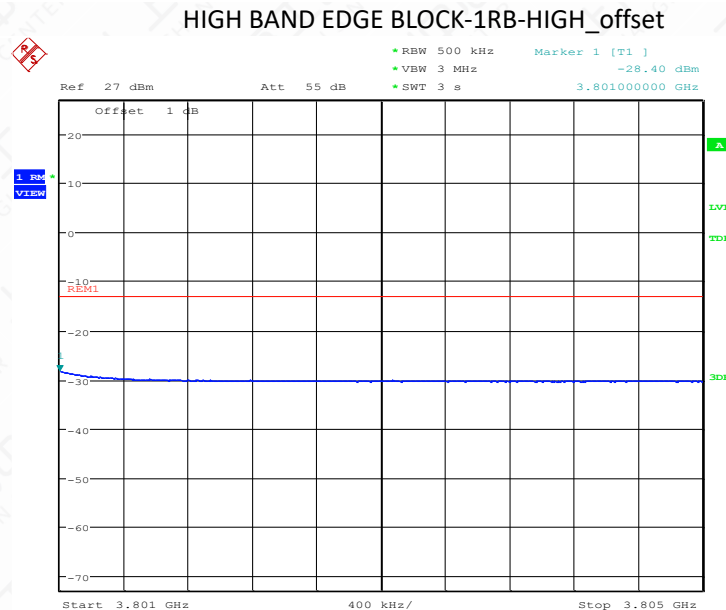


Date: 6.FEB.2023 17:37:44

### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset

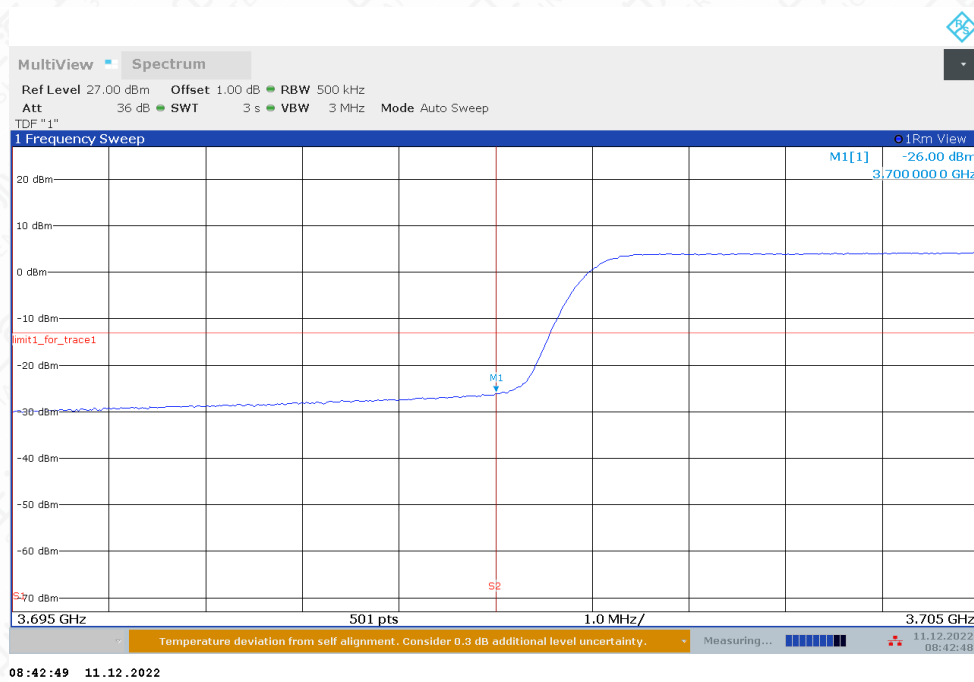


Date: 6.FEB.2023 17:38:28

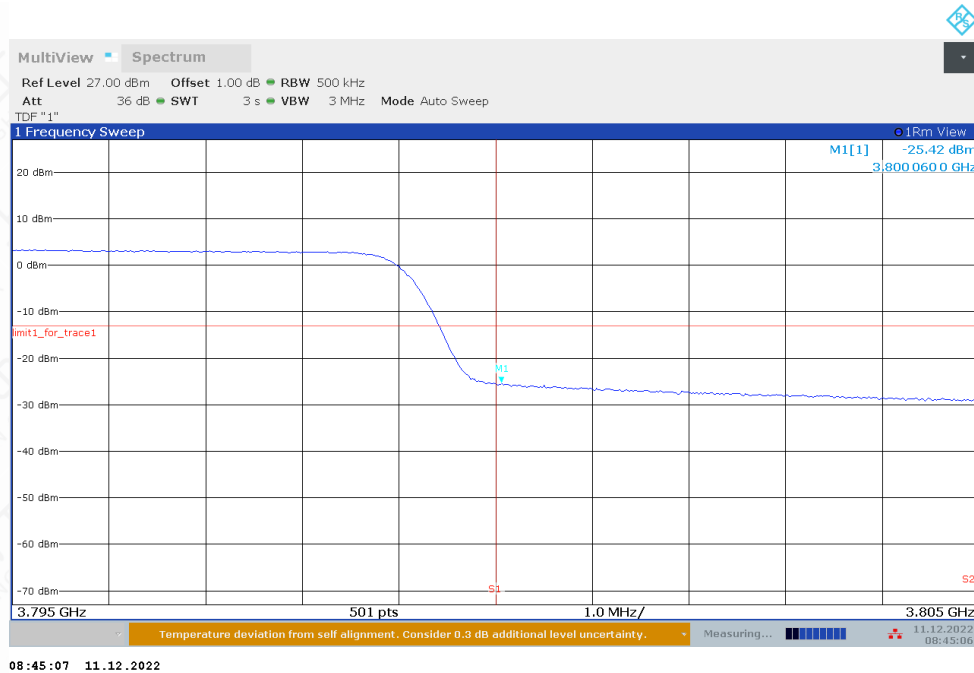


Date: 6.FEB.2023 17:39:11

### LOW BAND EDGE BLOCK-20M-100%RB

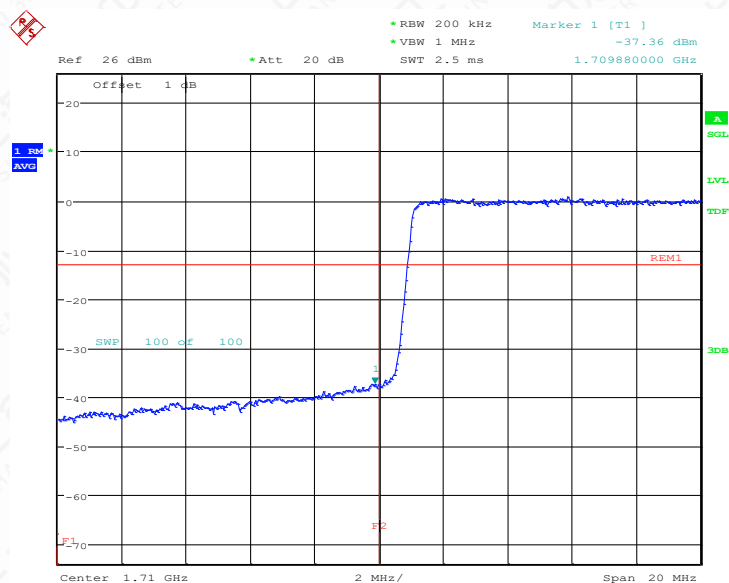


### HIGH BAND EDGE BLOCK-20M-100%RB



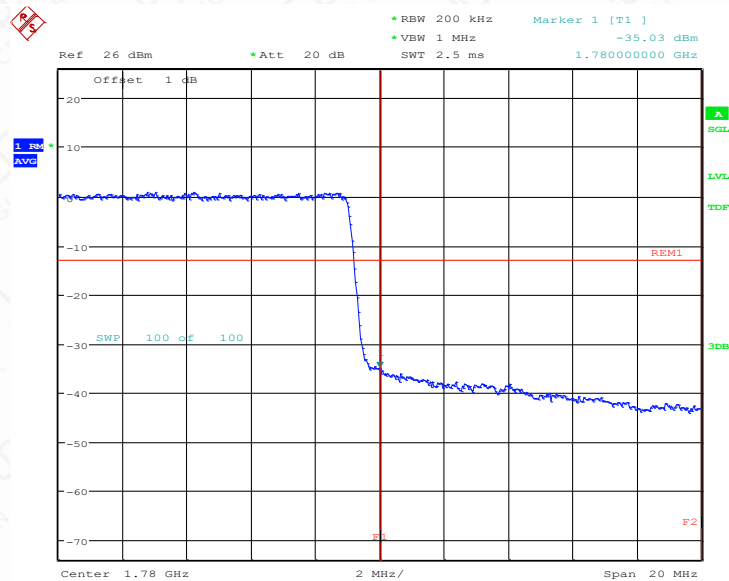
### LTE band 66

### LOW BAND EDGE BLOCK-20M-100%RB



Date: 7.NOV.2022 21:19:28

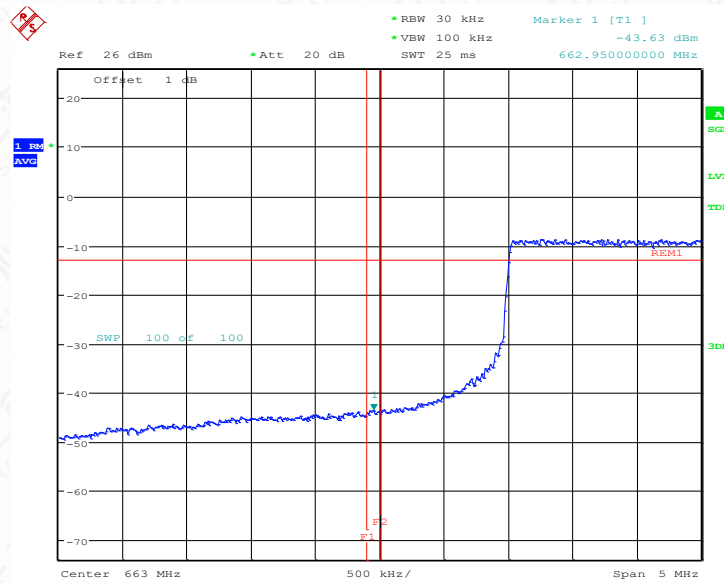
### HIGH BAND EDGE BLOCK-20M-100%RB



Date: 7.NOV.2022 21:21:52

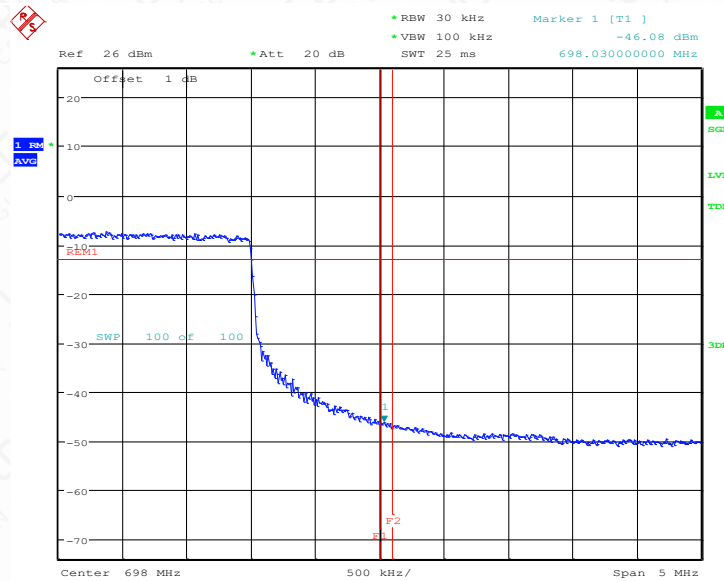
### LTE band 77

### LOW BAND EDGE BLOCK-20M-100%RB



Date: 7.NOV.2022 21:40:31

### HIGH BAND EDGE BLOCK-20M-100%RB

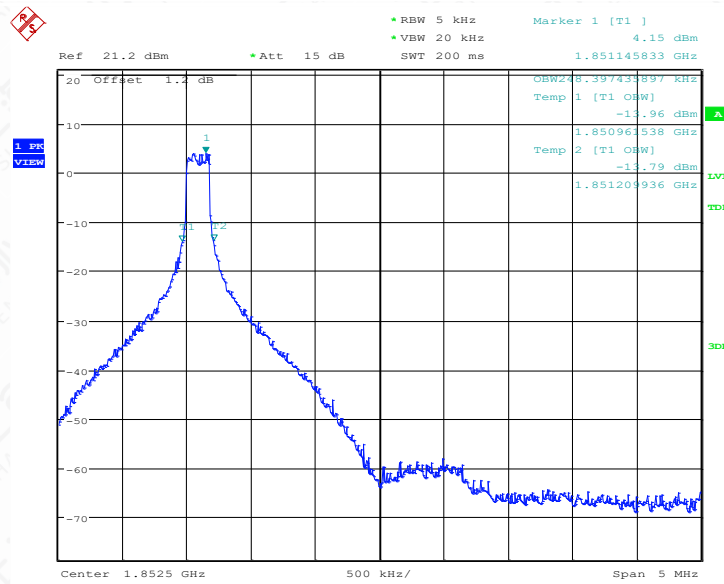


Date: 7.NOV.2022 21:42:52

### LTE CA\_band 2

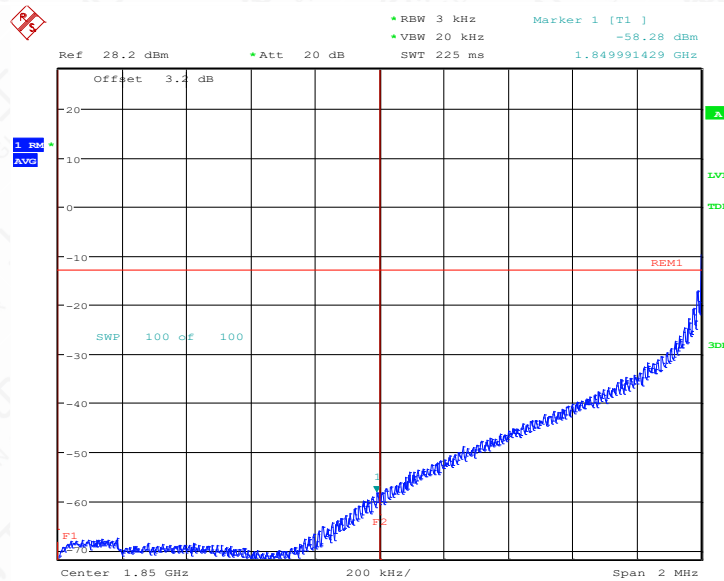
Only the worst case result is given below

OBW: 1RB-LOW\_offset



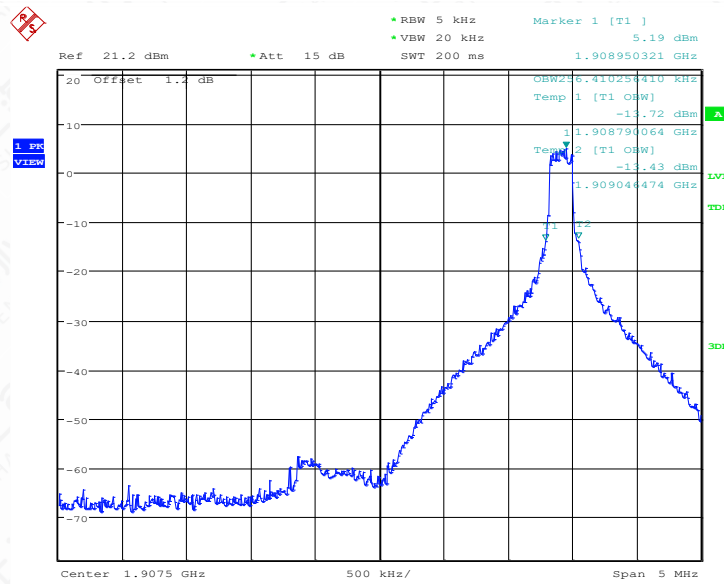
Date: 8.FEB.2023 19:42:56

### LOW BAND EDGE BLOCK-1RB-20MHz+20M\_offset



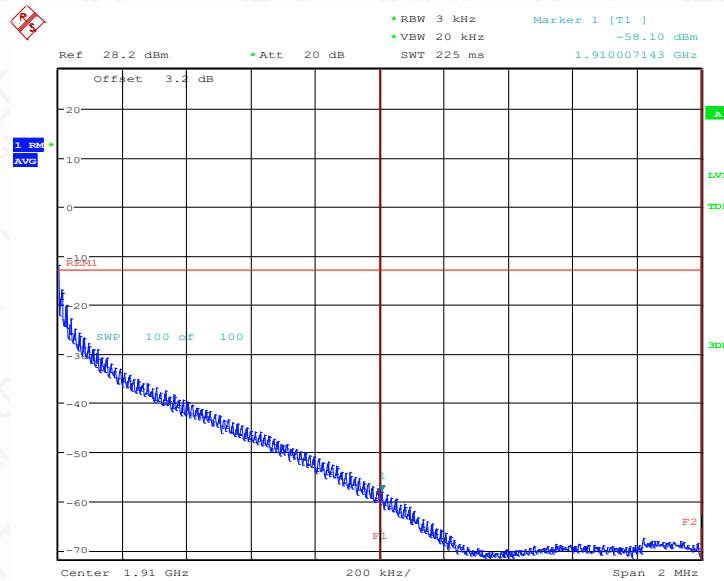
Date: 8.FEB.2023 19:44:03

### OBW: 1RB-HIGH\_offset



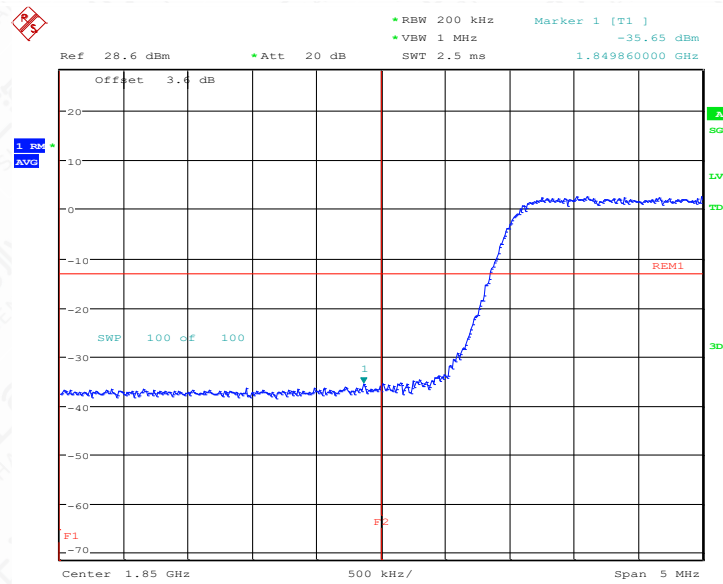
Date: 8.FEB.2023 19:47:45

### HIGH BAND EDGE BLOCK-1RB-20MHz+20M\_offset



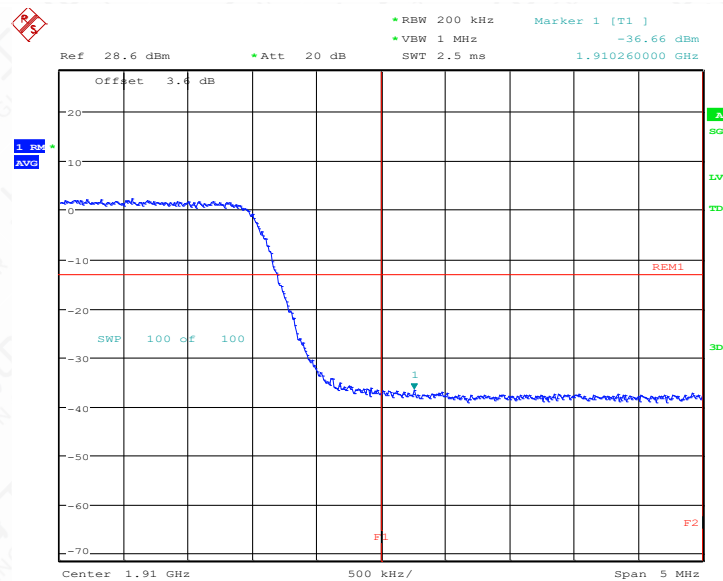
Date: 8.FEB.2023 19:48:53

### LOW BAND EDGE BLOCK-20MHz+20MHz-100%RB



Date: 1.FEB.2023 18:18:09

### HIGH BAND EDGE BLOCK-20MHz+20MHz-100%RB

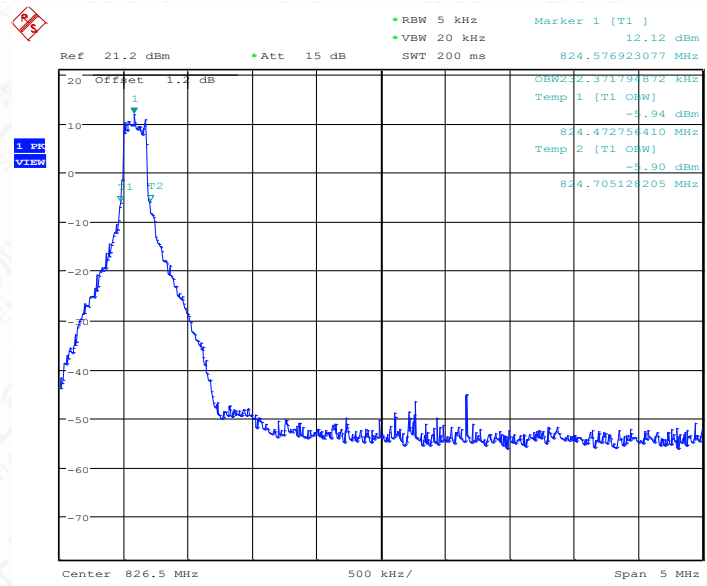


Date: 1.FEB.2023 18:22:06

LTE CA\_band 5

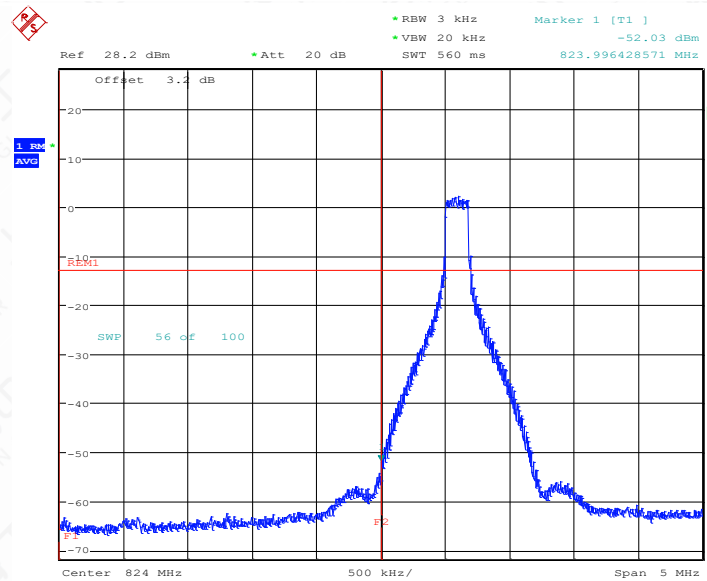
Only the worst case result is given below

OBW: 1RB-LOW\_offset



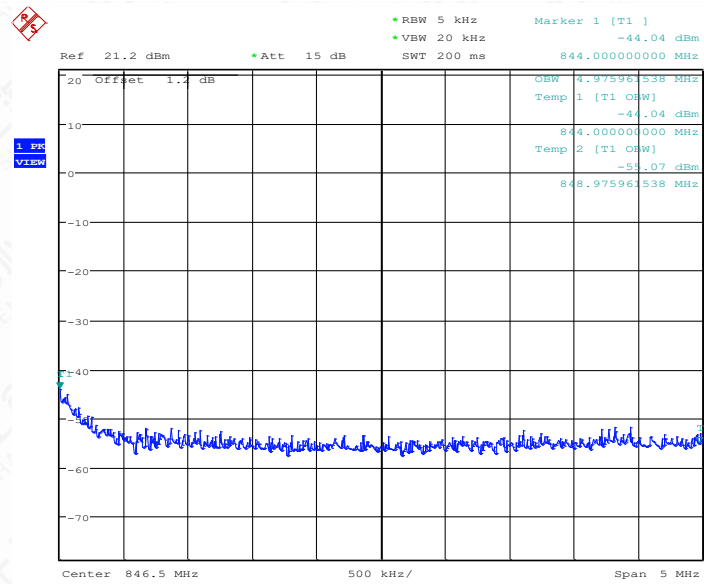
Date: 8.FEB.2023 12:09:30

### LOW BAND EDGE BLOCK-1RB-10MHz+10M\_offset



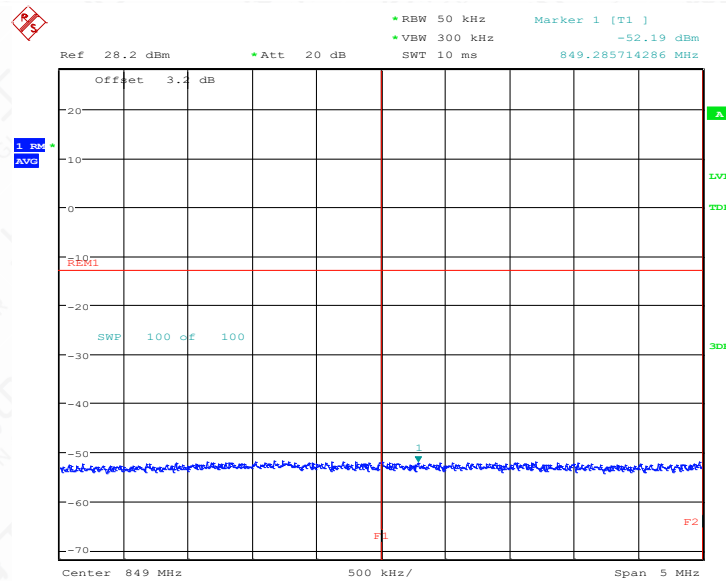
Date: 8.FEB.2023 12:11:17

### OBW: 1RB-HIGH\_offset



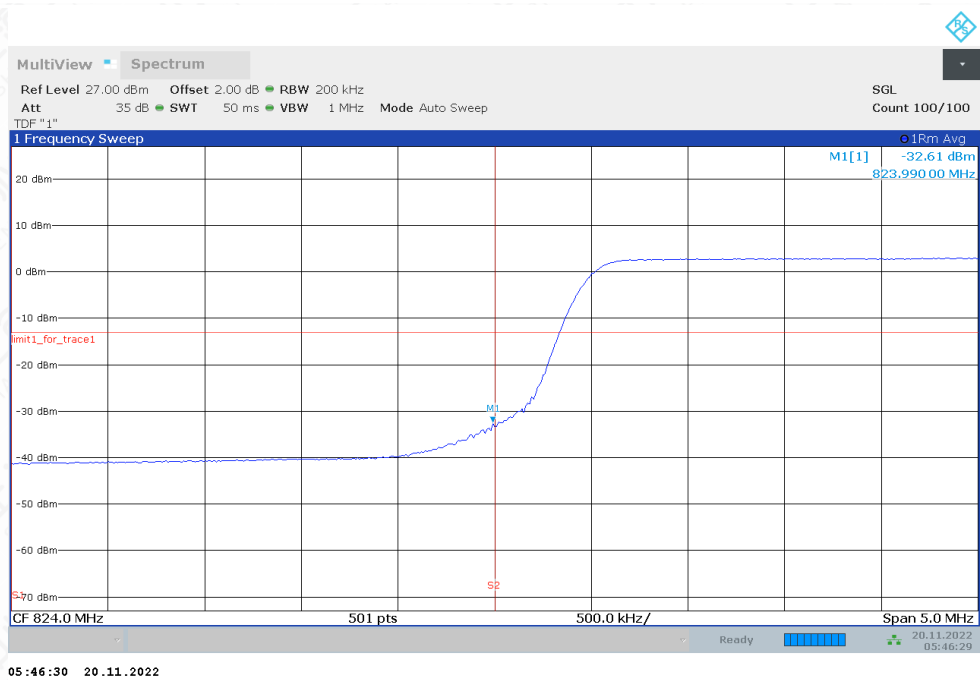
Date: 8.FEB.2023 12:15:57

### HIGH BAND EDGE BLOCK-1RB-10MHz+10M\_offset

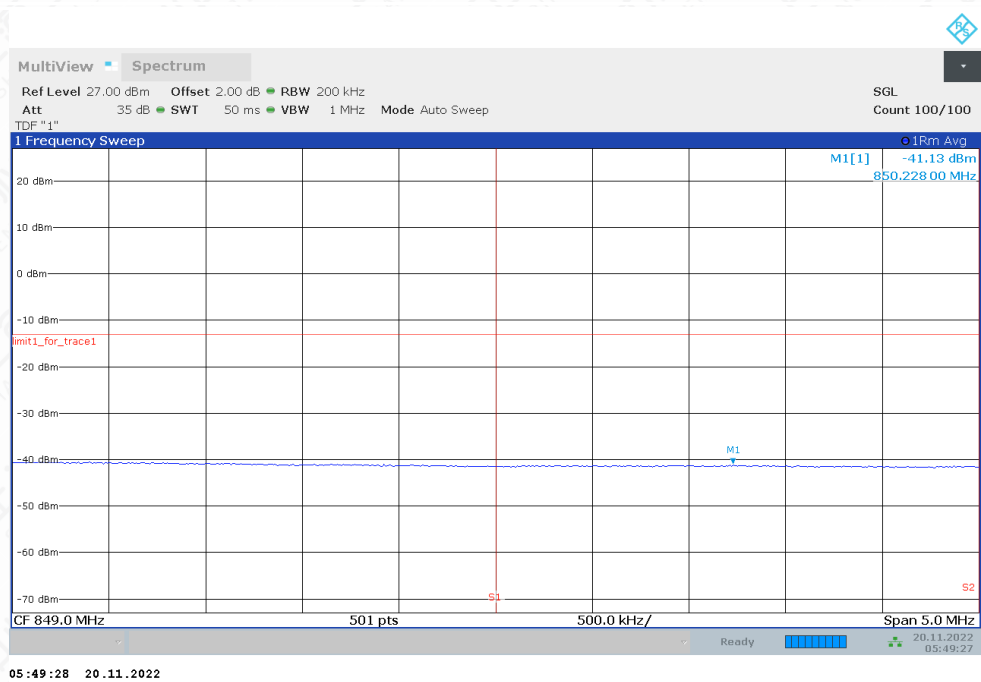


Date: 8.FEB.2023 12:16:41

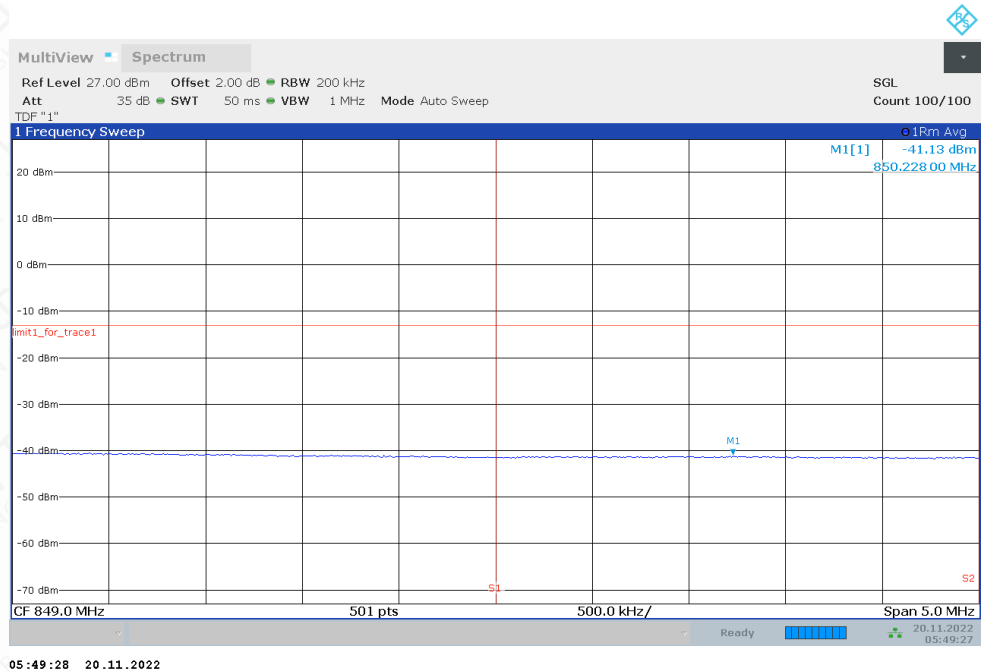
### LOW BAND EDGE BLOCK-10MHz+10MHz-100%RB



### HIGH BAND EDGE BLOCK-10MHz+10MHz-100%RB



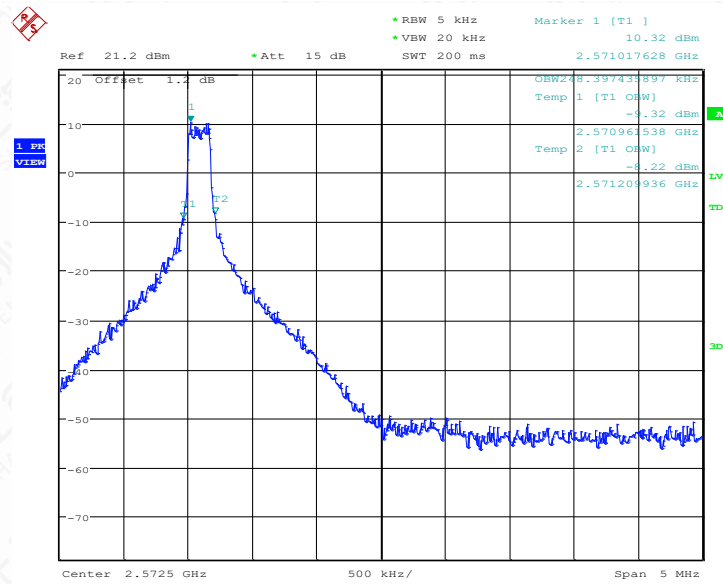
### HIGH BAND EDGE BLOCK-10MHz+10MHz-100%RB



LTE CA\_band 38

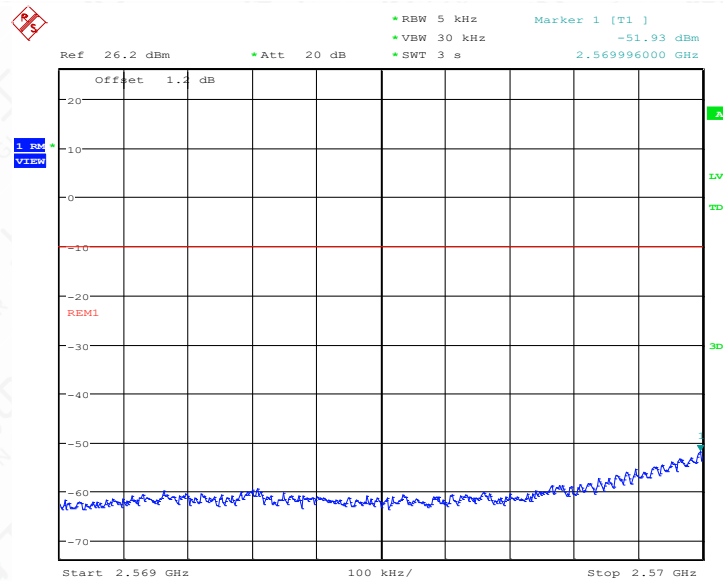
Only the worst case result is given below

OBW: 1RB-LOW\_offset



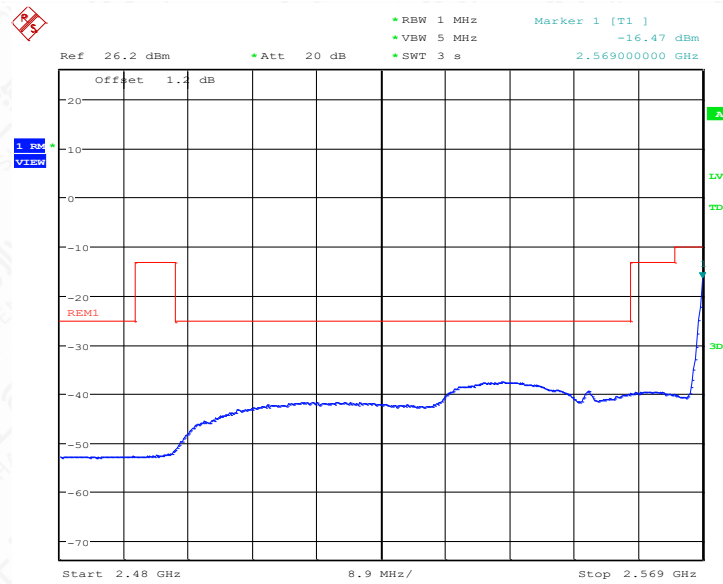
Date: 8.FEB.2023 12:40:10

### LOW BAND EDGE BLOCK-1RB-20MHz+20M\_offset



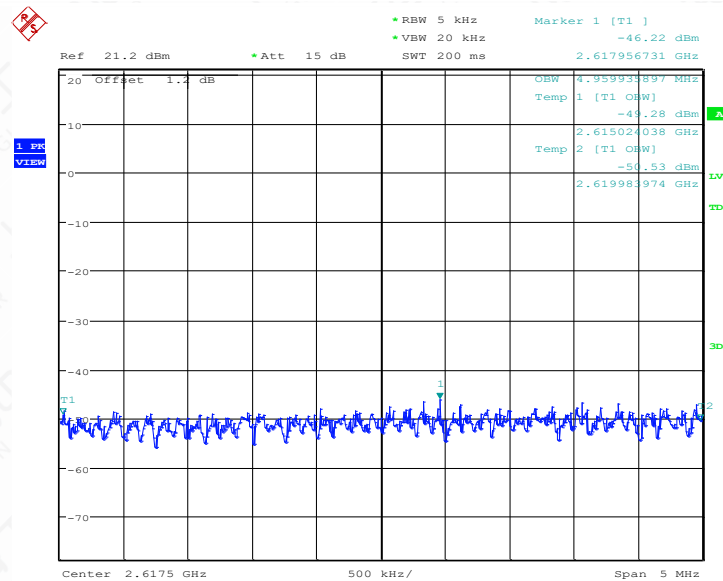
Date: 8.FEB.2023 12:40:53

### LOW BAND EDGE BLOCK-1RB-20MHz+20M\_offset



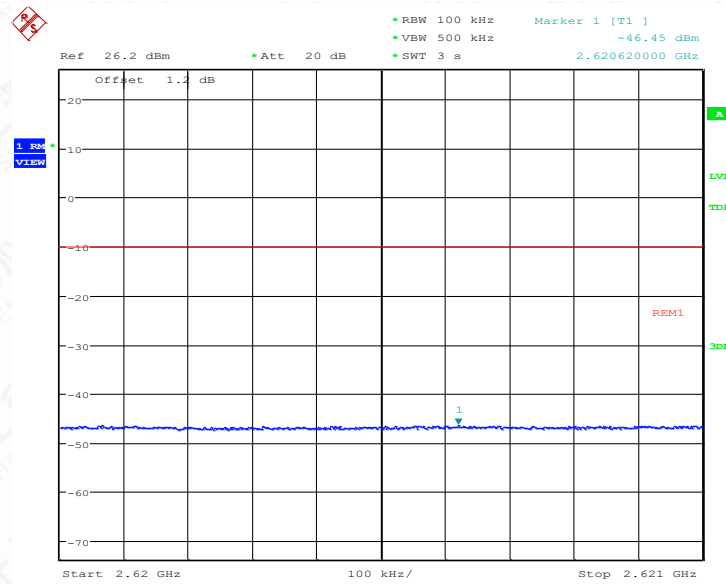
Date: 8.FEB.2023 12:41:37

#### OBW: 1RB-HIGH\_offset



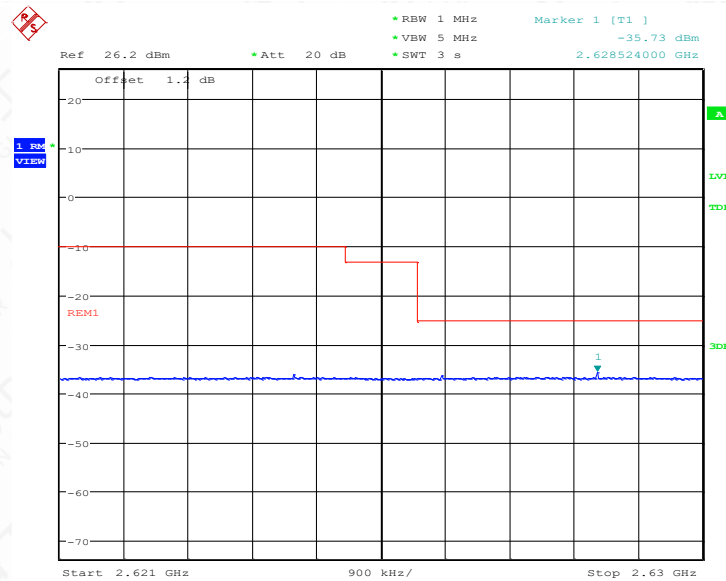
Date: 8.FEB.2023 12:46:40

#### HIGH BAND EDGE BLOCK-1RB-20MHz+20M\_offset



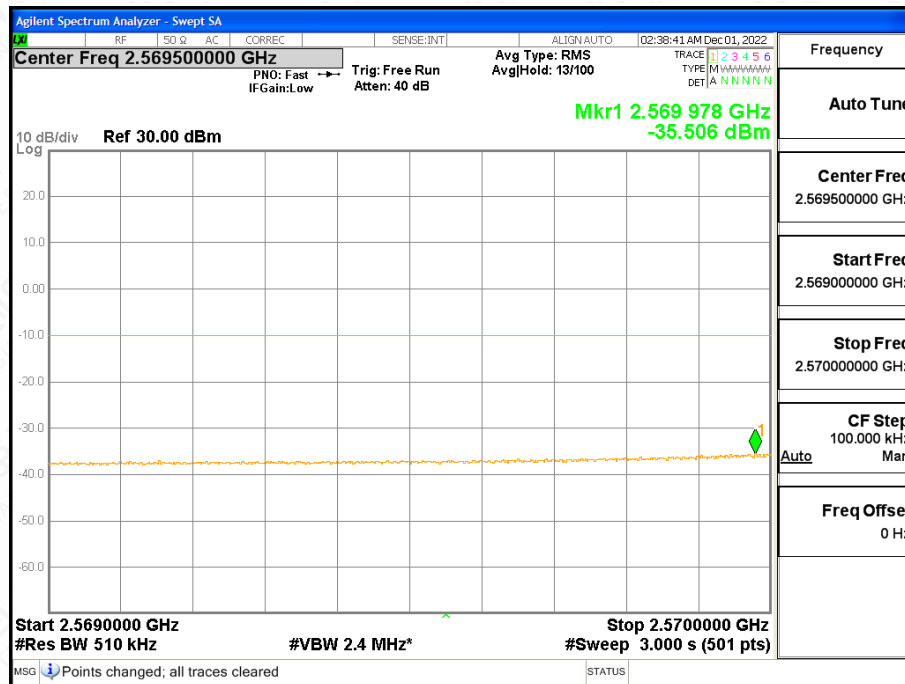
Date: 8.FEB.2023 12:47:23

#### HIGH BAND EDGE BLOCK-1RB-20MHz+20M\_offset

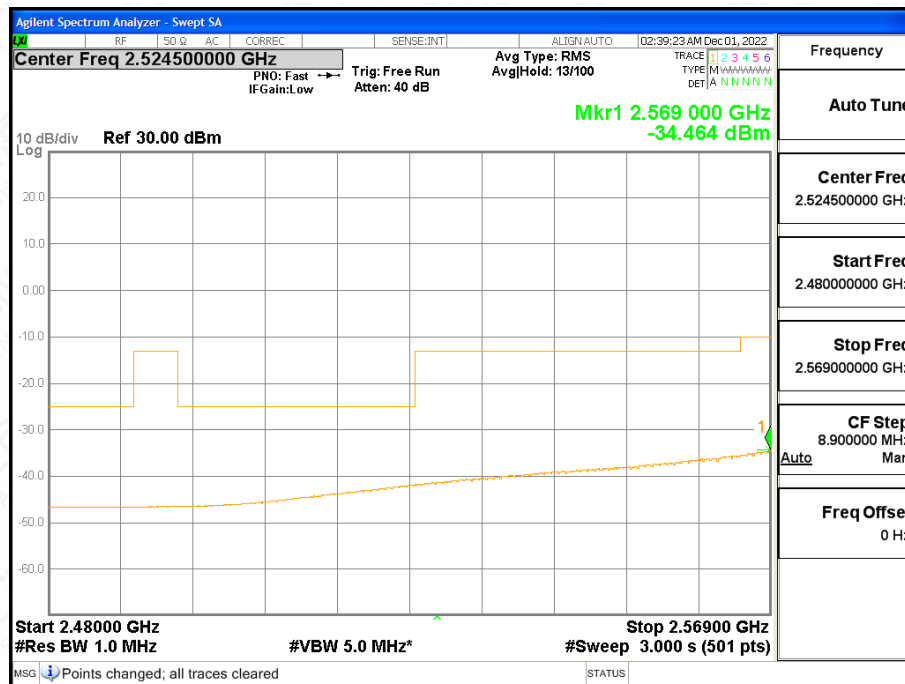


Date: 8.FEB.2023 12:48:07

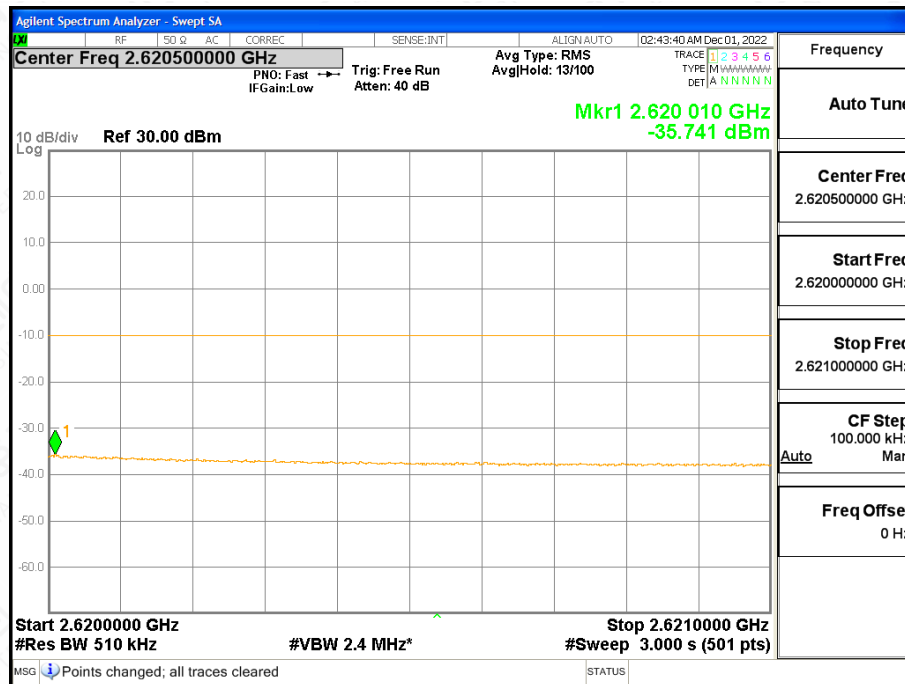
#### LOW BAND EDGE BLOCK-20MHz+20MHz-100%RB



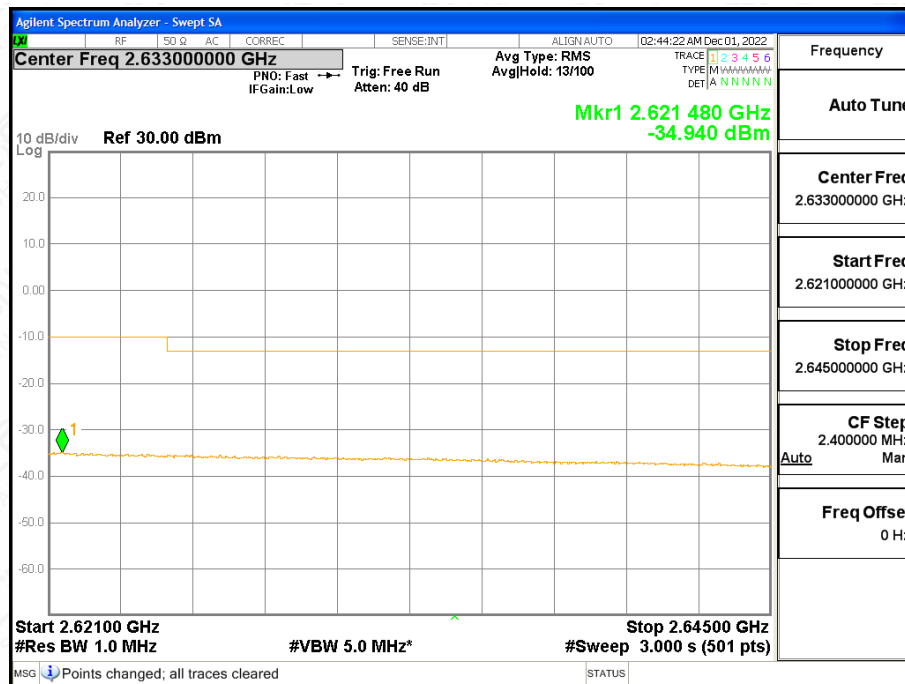
#### LOW BAND EDGE BLOCK-20MHz+20MHz-100%RB



#### HIGH BAND EDGE BLOCK-20MHz+20MHz-100%RB



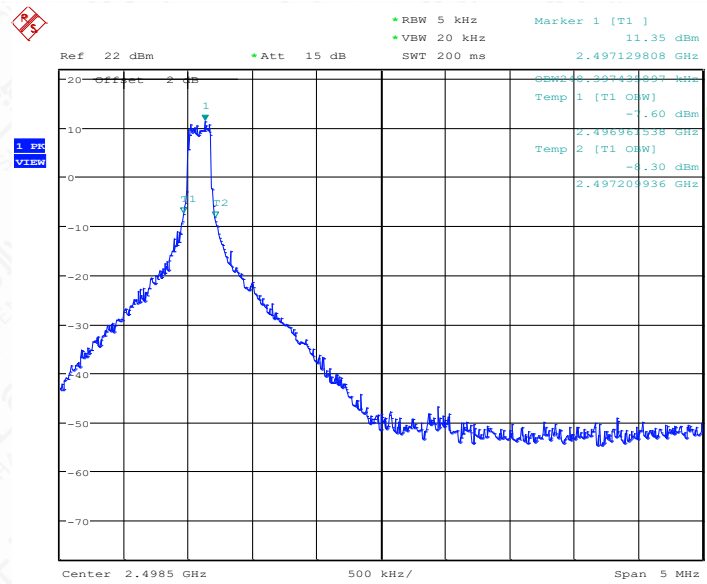
#### HIGH BAND EDGE BLOCK-20MHz+20MHz-100%RB



LTE CA\_band 41

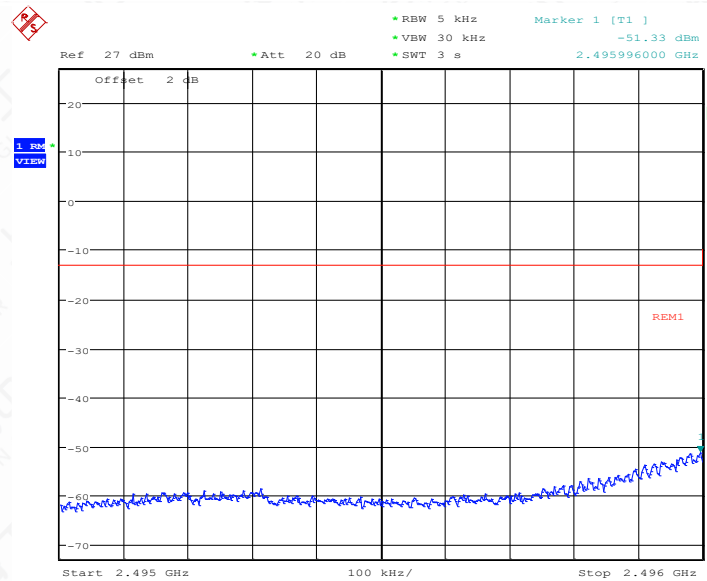
Only the worst case result is given below

OBW: 1RB-LOW\_offset



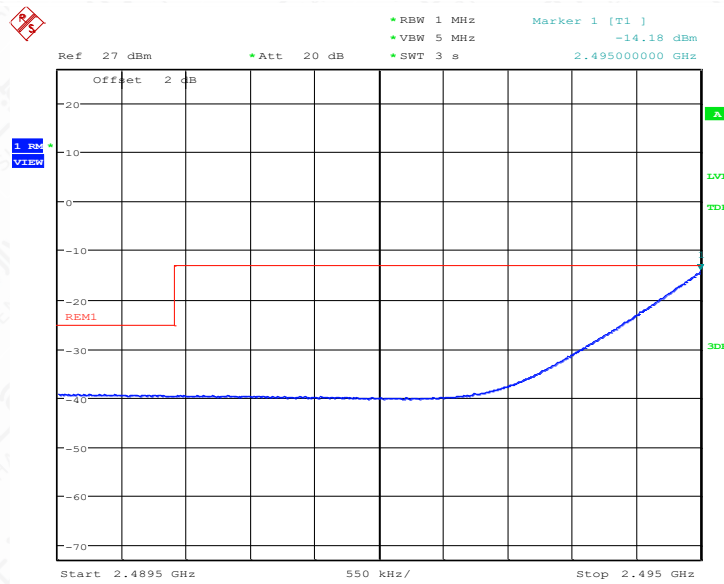
Date: 8.FEB.2023 15:14:12

### LOW BAND EDGE BLOCK-1RB-20MHz+20M\_offset



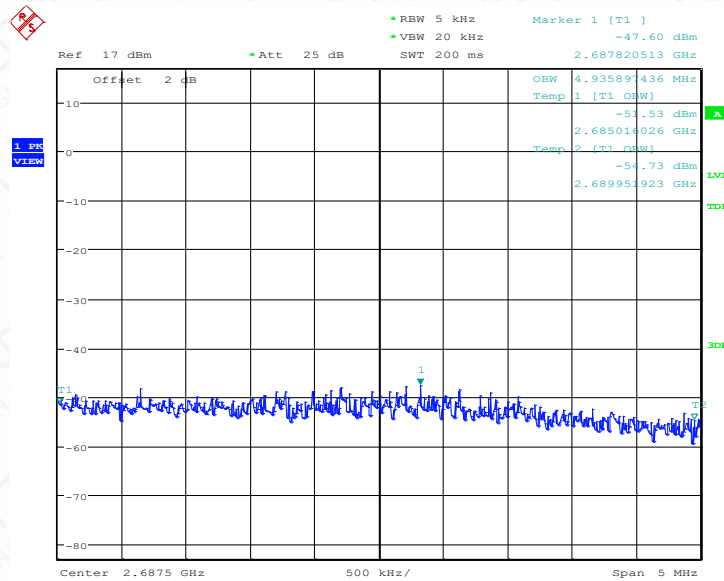
Date: 8.FEB.2023 15:14:56

### LOW BAND EDGE BLOCK-1RB-20MHz+20M\_offset



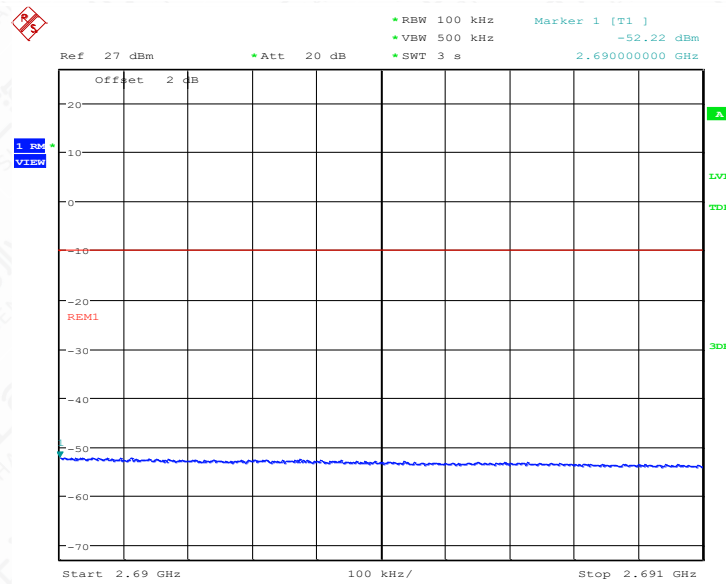
Date: 8.FEB.2023 15:15:38

#### OBW: 1RB-HIGH\_offset



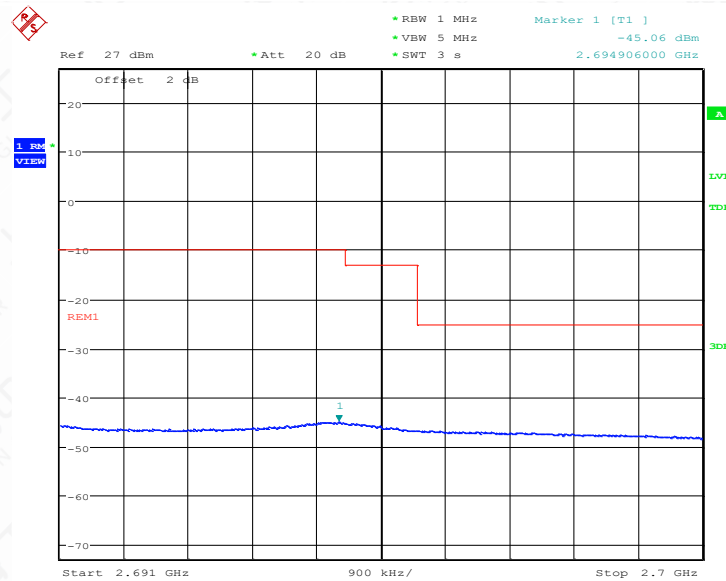
Date: 8.FEB.2023 15:22:43

#### HIGH BAND EDGE BLOCK-1RB-20MHz+20M\_offset



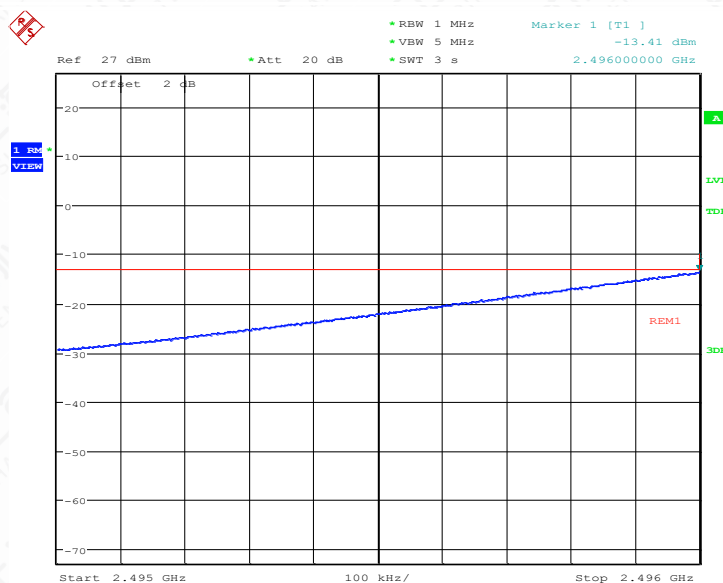
Date: 8.FEB.2023 15:23:25

### HIGH BAND EDGE BLOCK-1RB-20MHz+20M\_offset



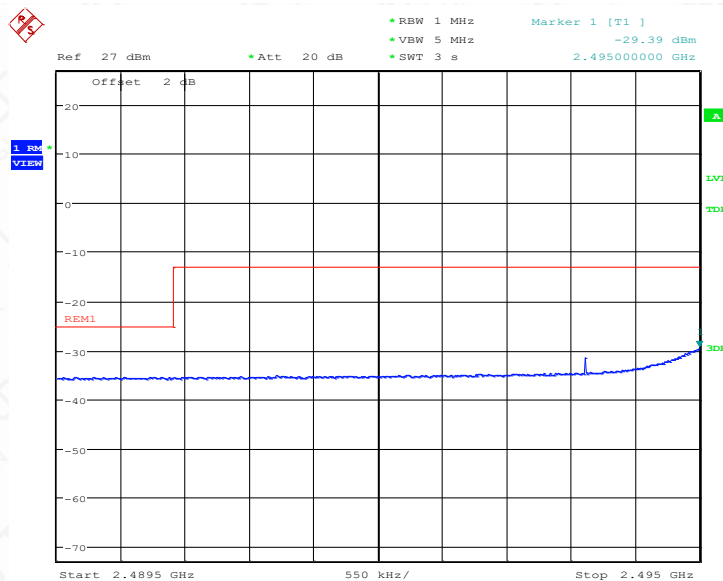
Date: 8.FEB.2023 15:24:09

### LOW BAND EDGE BLOCK-20MHz+20MHz-100%RB



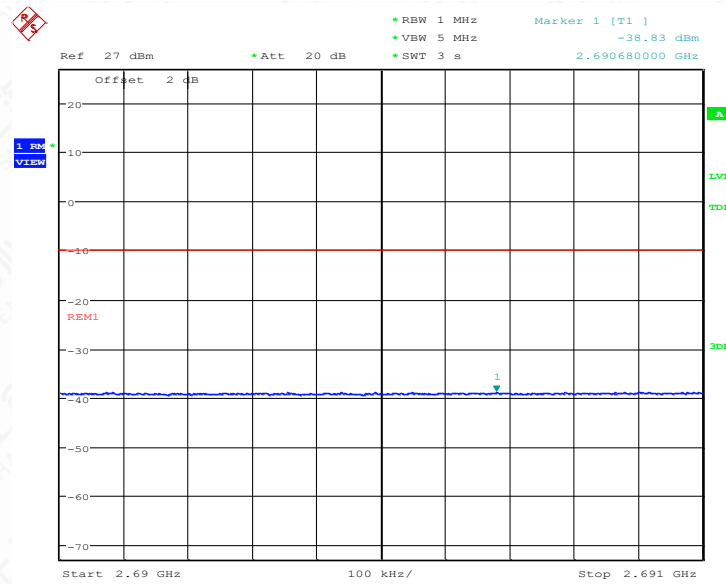
Date: 8.FEB.2023 15:11:36

#### LOW BAND EDGE BLOCK-20MHz+20MHz-100%RB



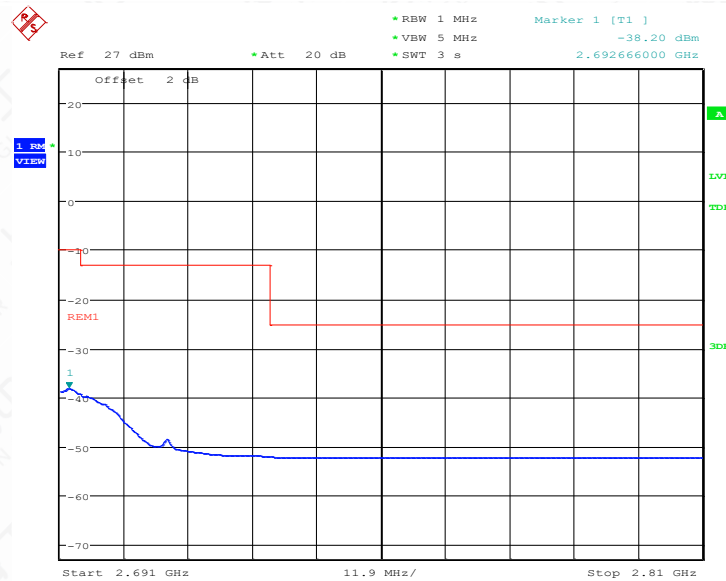
Date: 8.FEB.2023 15:12:20

#### HIGH BAND EDGE BLOCK-20MHz+20MHz-100%RB



Date: 8.FEB.2023 15:21:01

### HIGH BAND EDGE BLOCK-20MHz+20MHz-100%RB

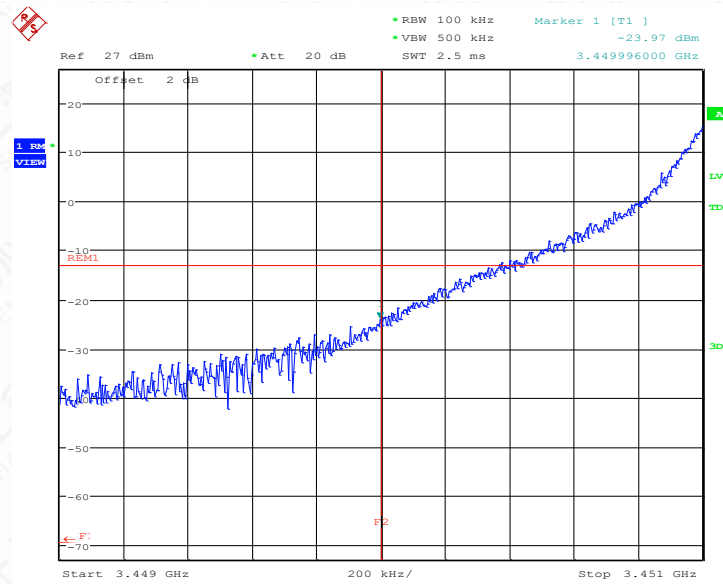


Date: 8.FEB.2023 15:21:43

LTE CA\_band 42(part 27)

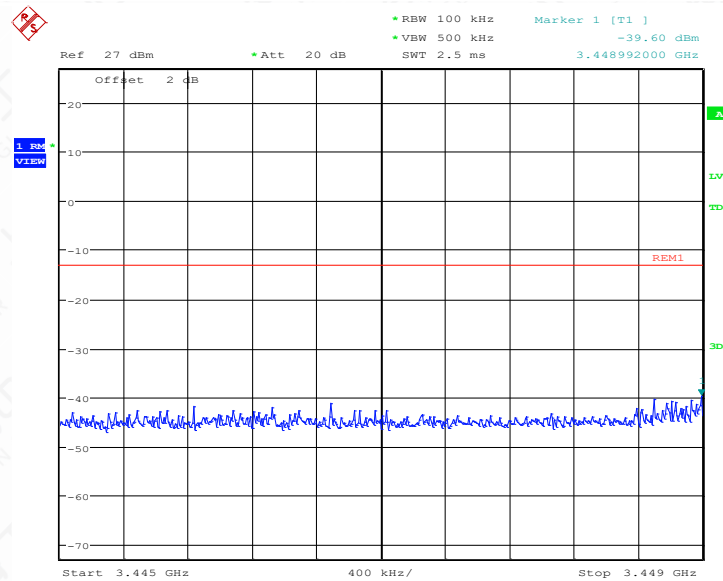
Only the worst case result is given below

LOW BAND EDGE BLOCK-1RB-20MHz+20M\_offset



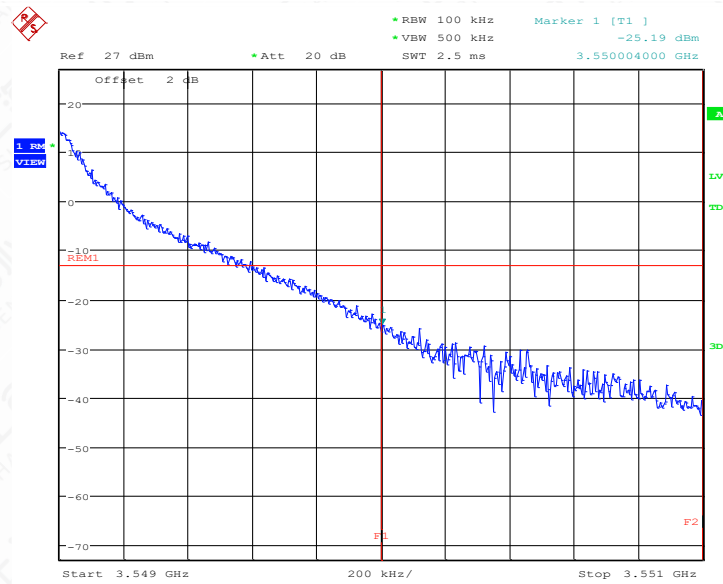
Date: 28.FEB.2023 13:59:55

### LOW BAND EDGE BLOCK-1RB-20MHz+20M\_offset



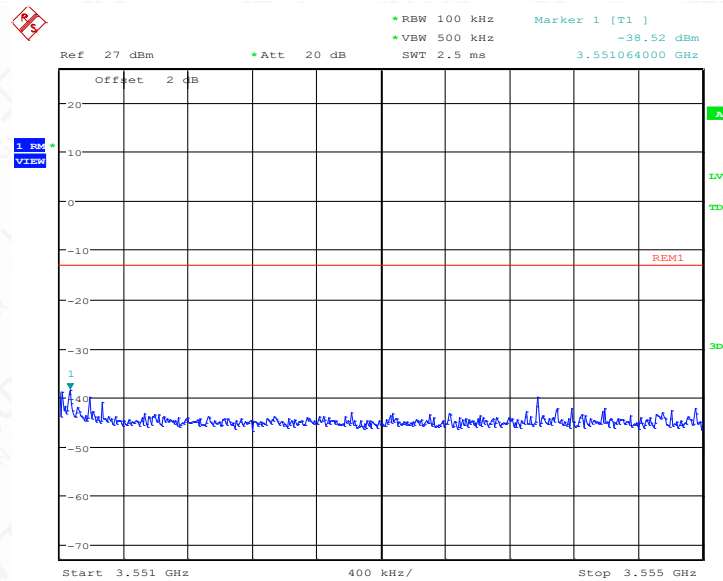
Date: 28.FEB.2023 14:00:39

### HIGH BAND EDGE BLOCK-1RB-20MHz+20M\_offset



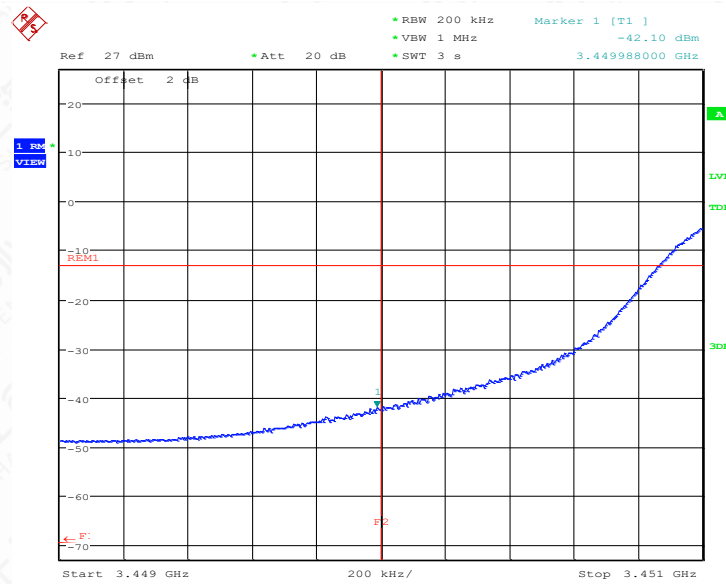
Date: 28.FEB.2023 14:47:54

### HIGH BAND EDGE BLOCK-1RB-20MHz+20M\_offset



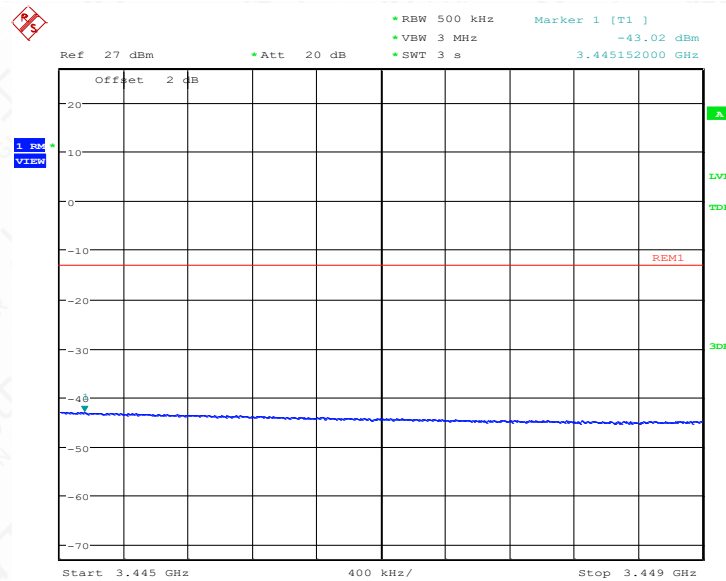
Date: 28.FEB.2023 14:48:38

### LOW BAND EDGE BLOCK-20MHz+20MHz-100%RB



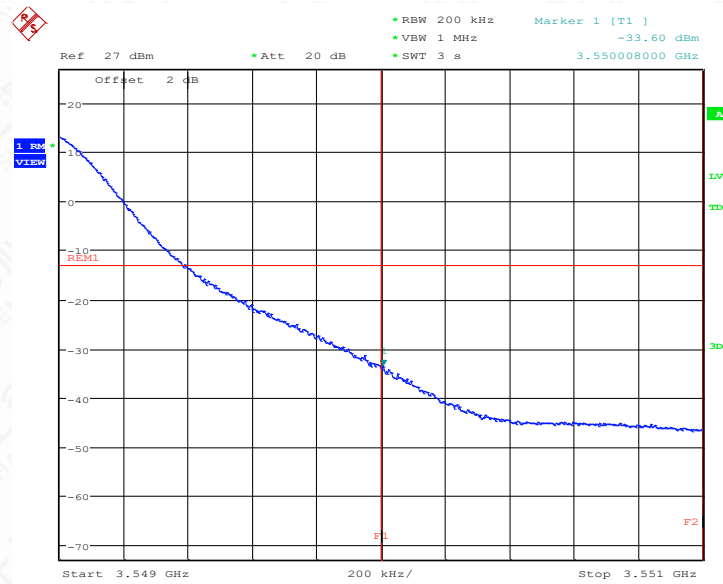
Date: 28.FEB.2023 13:56:10

### LOW BAND EDGE BLOCK-20MHz+20MHz-100%RB



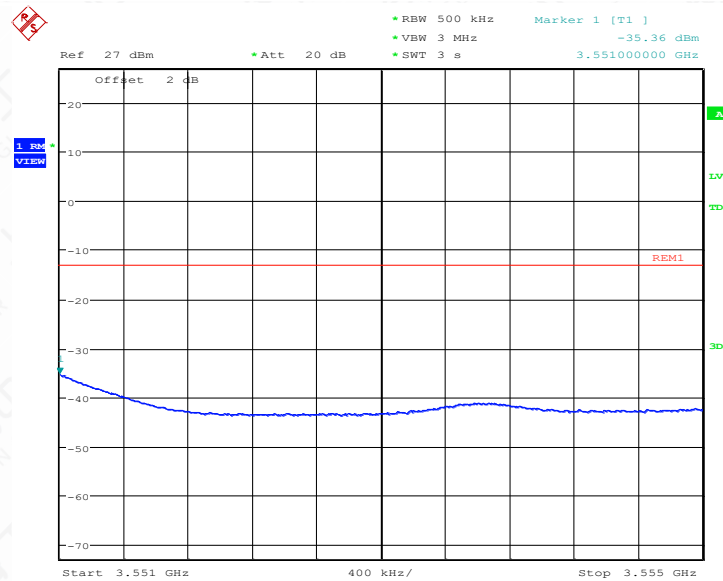
Date: 28.FEB.2023 13:56:54

### HIGH BAND EDGE BLOCK-20MHz+20MHz-100%RB



Date: 28.FEB.2023 14:44:09

### HIGH BAND EDGE BLOCK-20MHz+20MHz-100%RB

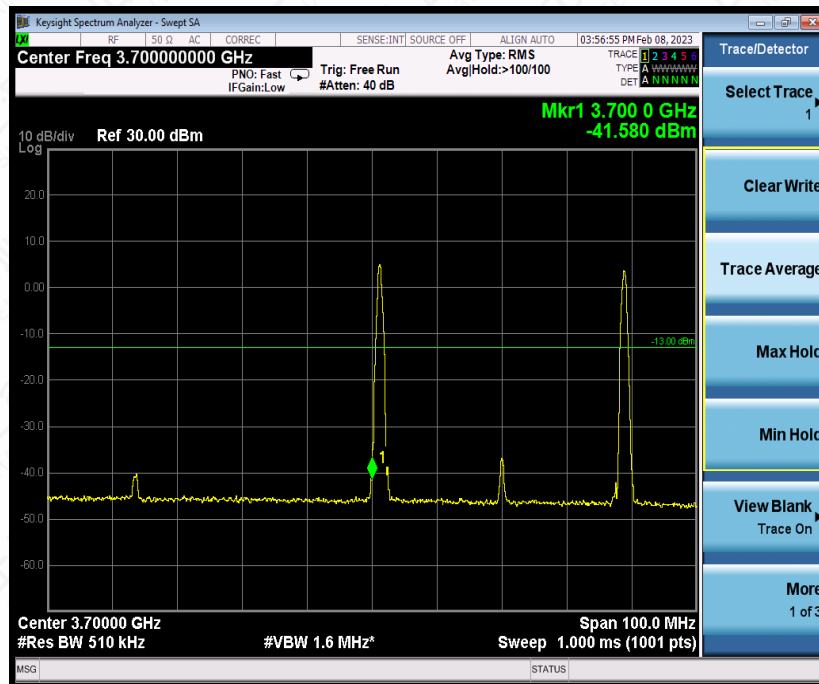


Date: 28.FEB.2023 14:44:53

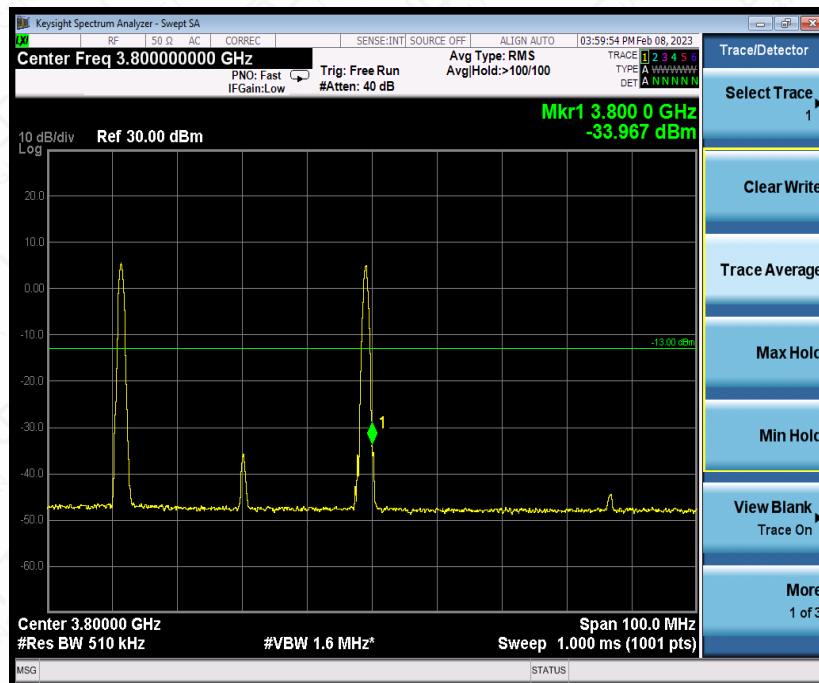
LTE CA\_band 43(part 27)\*

Only the worst case result is given below

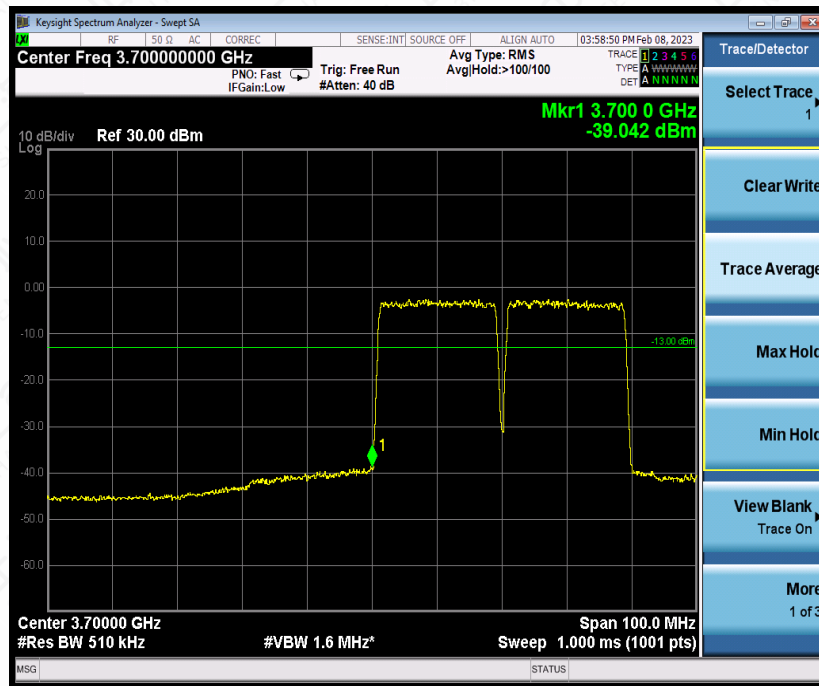
LOW BAND EDGE BLOCK-1RB-20MHz+20M\_offset



HIGH BAND EDGE BLOCK-1RB-20MHz+20M\_offset



LOW BAND EDGE BLOCK-20MHz+20MHz-100%RB



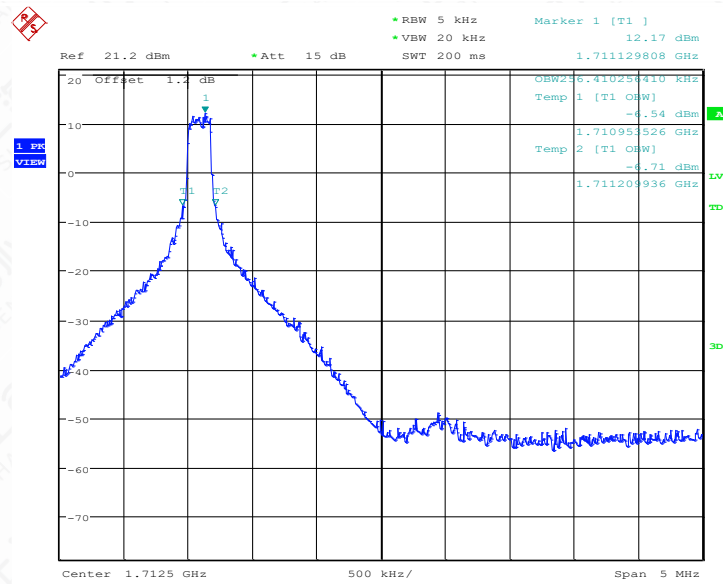
HIGH BAND EDGE BLOCK-20MHz+20MHz-100%RB



LTE CA\_band 66

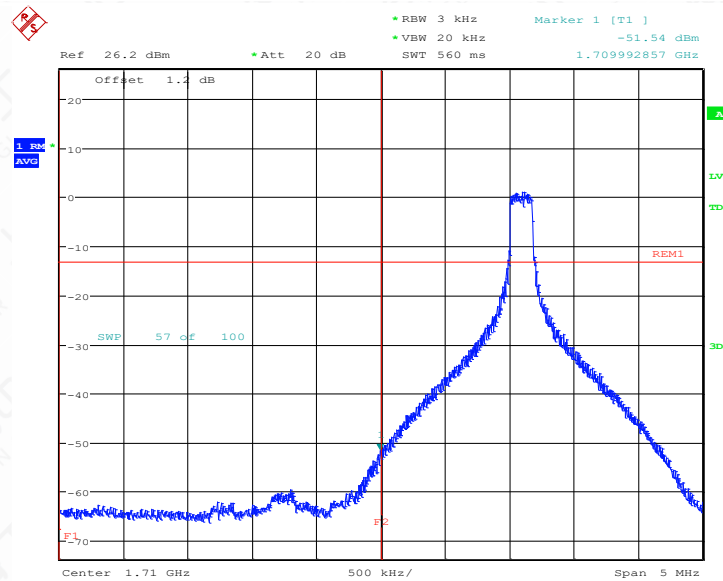
Only the worst case result is given below

OBW: 1RB-LOW\_offset



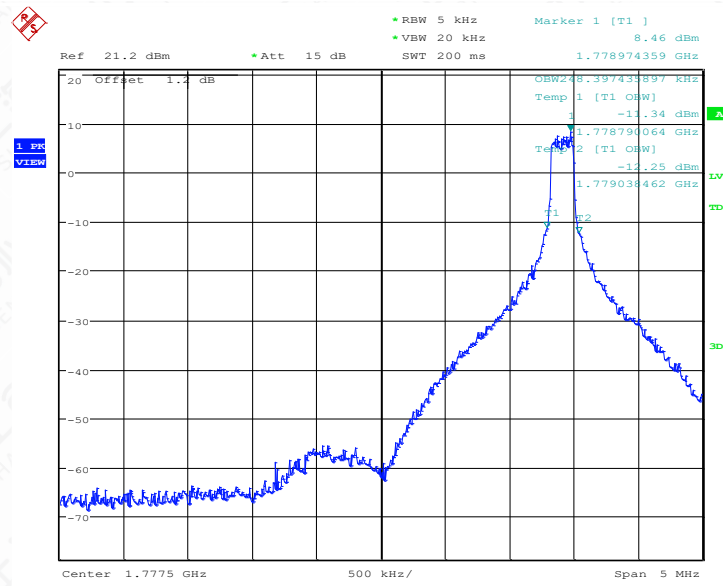
Date: 13.FEB.2023 20:45:48

### LOW BAND EDGE BLOCK-1RB-20MHz+20M\_offset



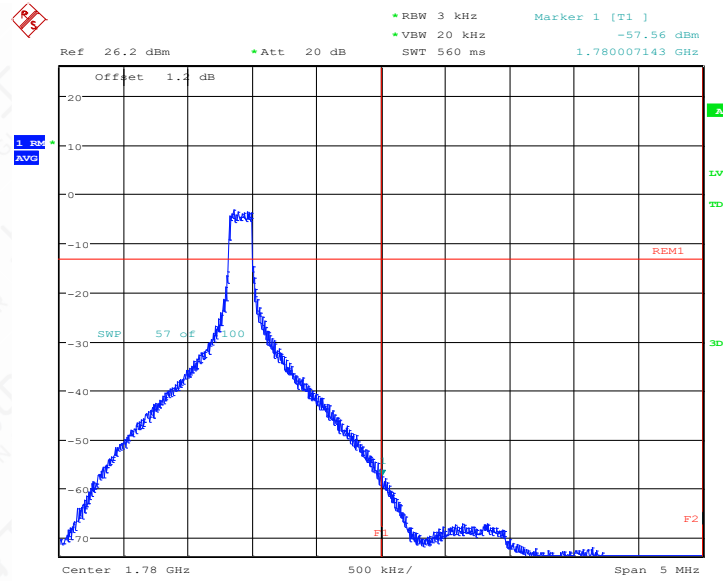
Date: 13.FEB.2023 20:47:34

### OBW: 1RB-HIGH\_offset



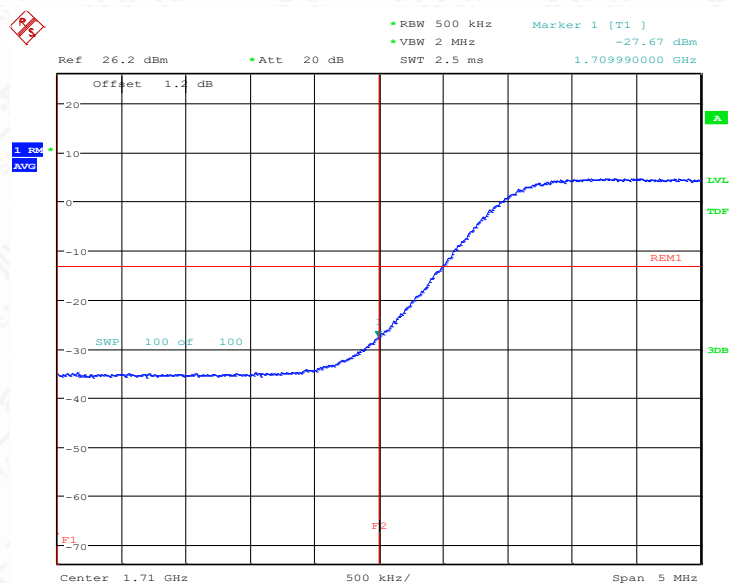
Date: 13.FEB.2023 20:53:52

### HIGH BAND EDGE BLOCK-1RB-20MHz+20M\_offset

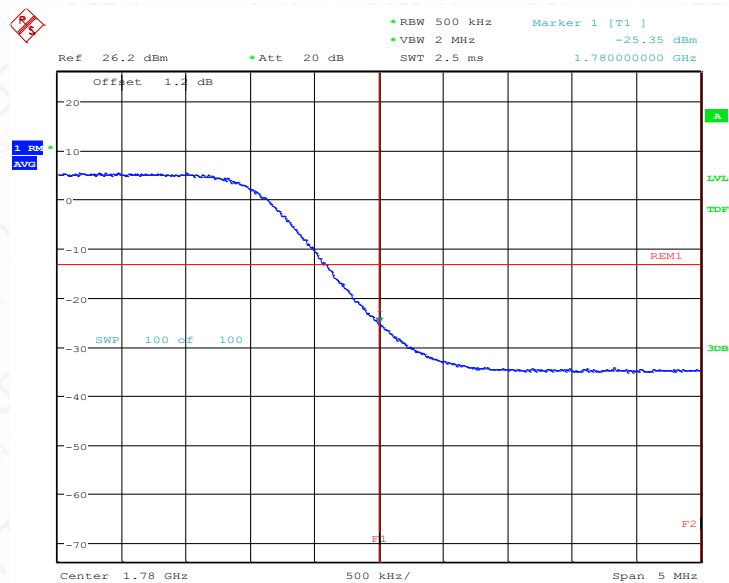


Date: 13.FEB.2023 20:55:38

### LOW BAND EDGE BLOCK-20MHz+20MHz-100%RB



Date: 13.FEB.2023 20:44:42

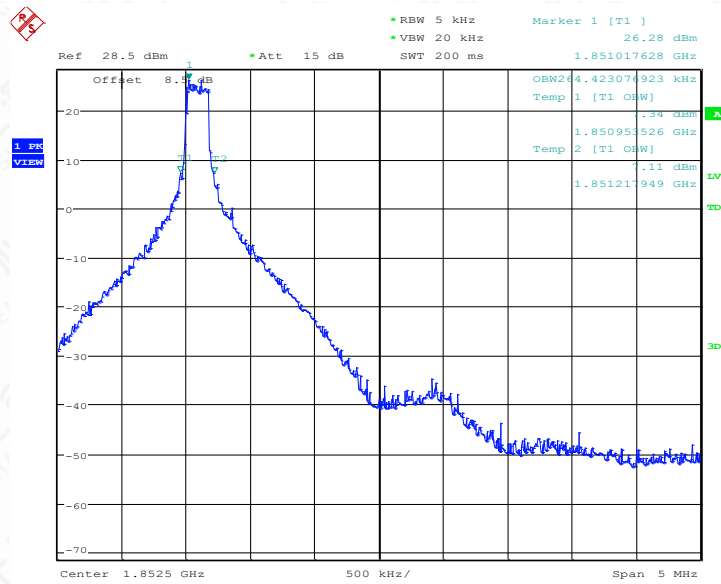


Date: 13.FEB.2023 20:51:04

LTE band 2@CA\_2A-66A

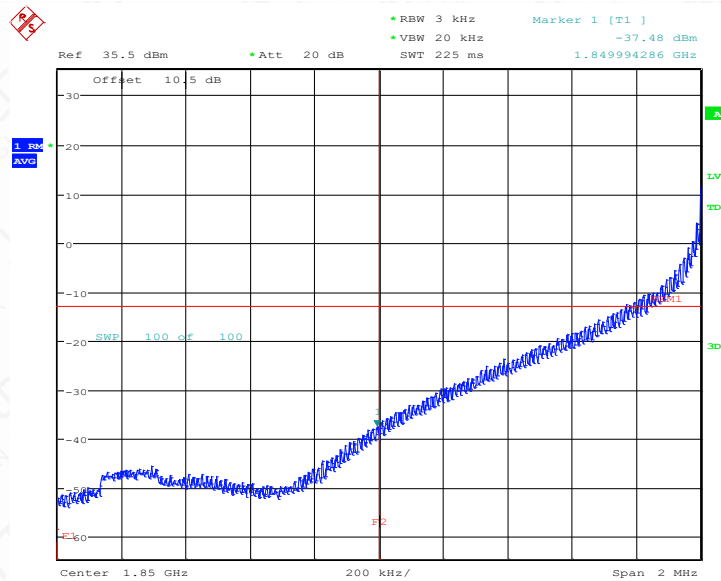
Only the worst case result is given below

OBW: 1RB-LOW offset



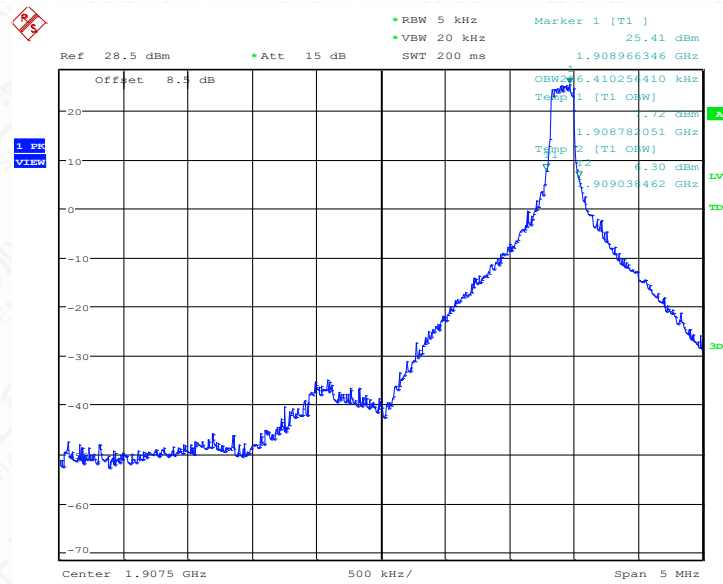
Date: 14.FEB.2023 16:31:42

### LOW BAND EDGE BLOCK-1RB-LOW\_offset



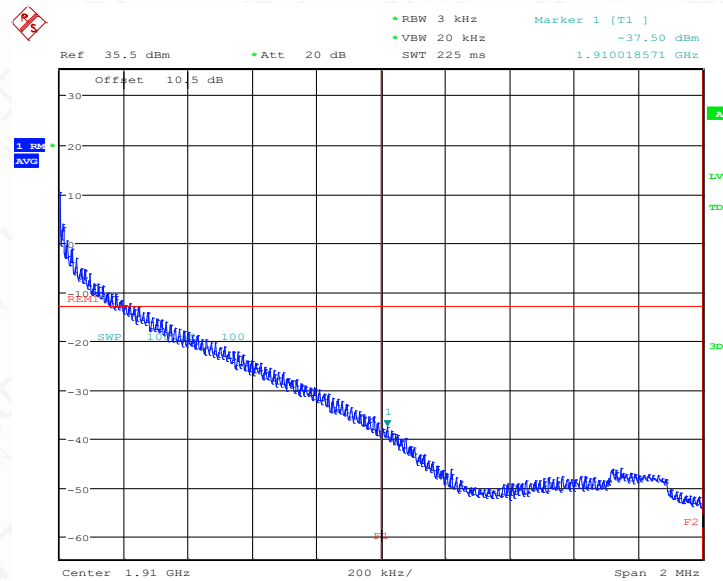
Date: 14.FEB.2023 16:32:49

### OBW: 1RB-HIGH\_offset



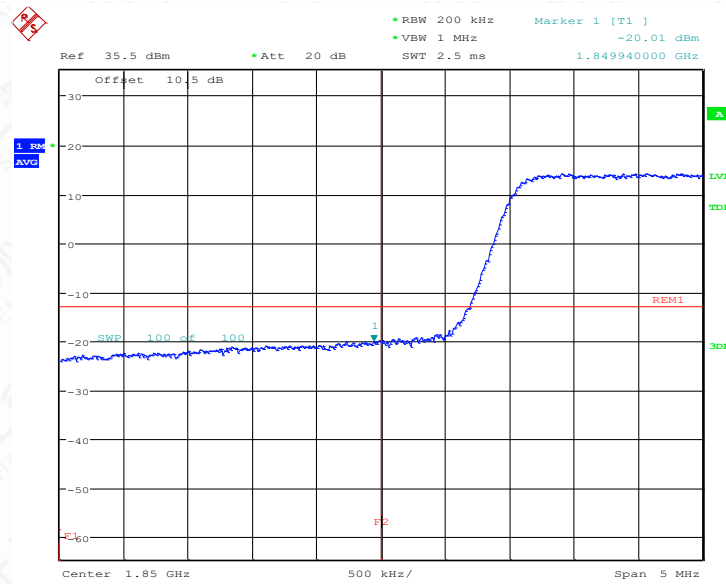
Date: 14.FEB.2023 16:45:33

### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



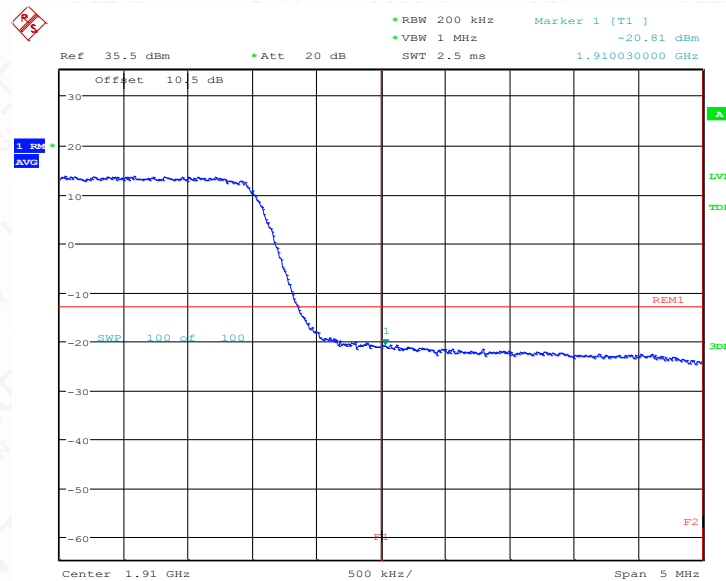
Date: 14.FEB.2023 16:46:39

### LOW BAND EDGE BLOCK-20MHz+20MHz-100%RB



Date: 14.FEB.2023 16:20:00

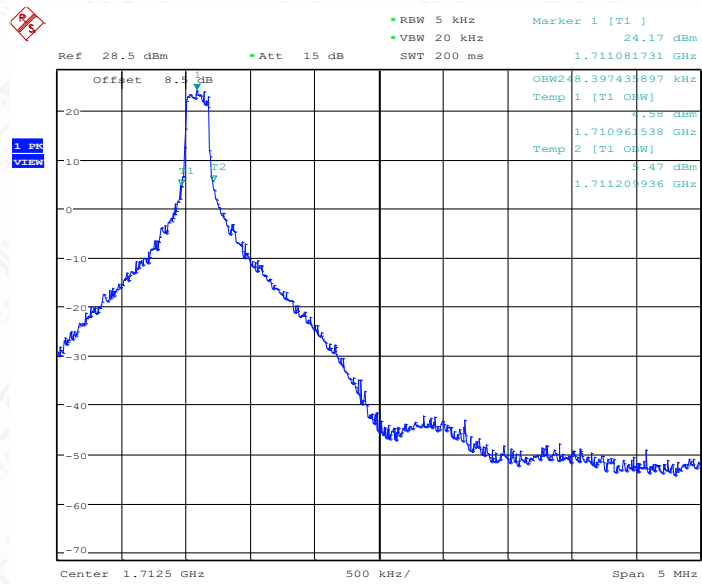
### HIGH BAND EDGE BLOCK-20MHz+20MHz-100%RB



Date: 14.FEB.2023 16:41:29

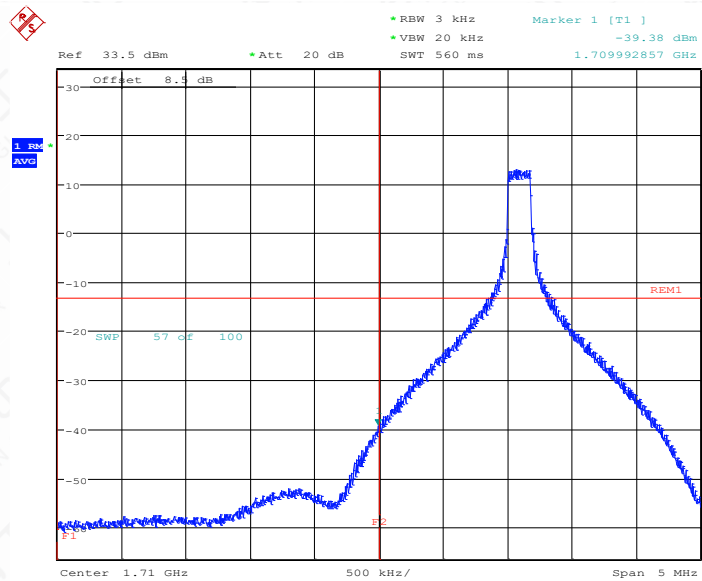
LTE band 66@CA\_2A-66A

OBW: 1RB-LOW\_offset



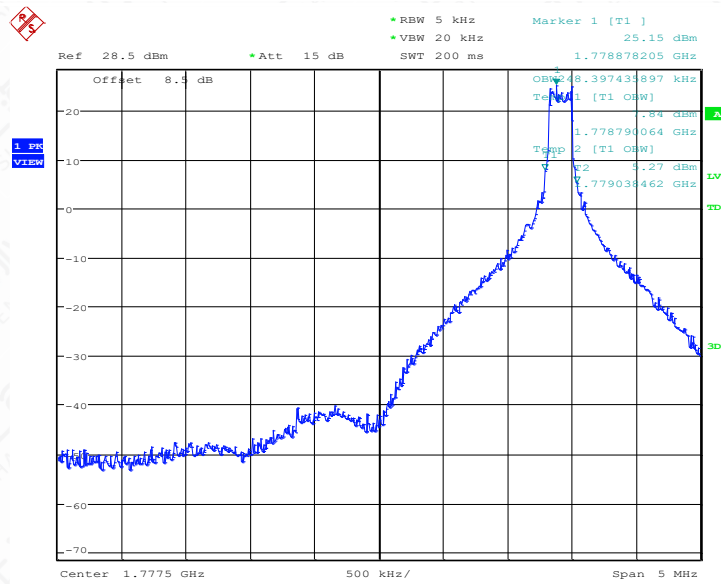
Date: 14.FEB.2023 16:38:20

### LOW BAND EDGE BLOCK-1RB-LOW\_offset

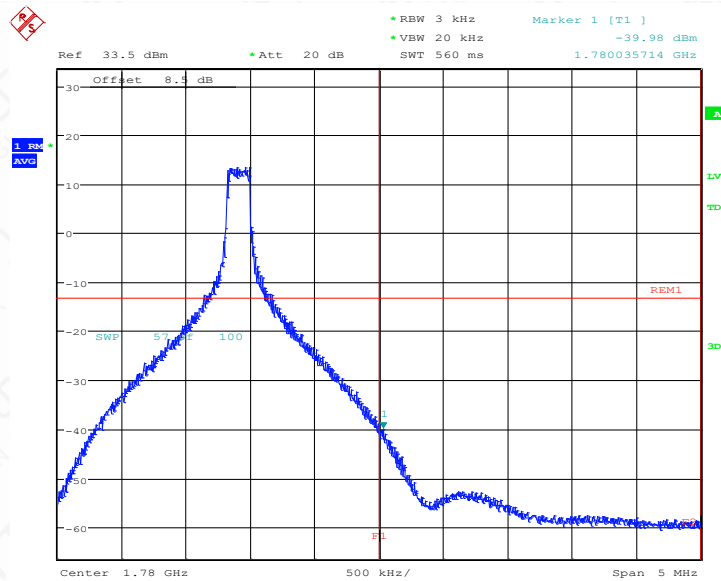


Date: 14.FEB.2023 16:40:06

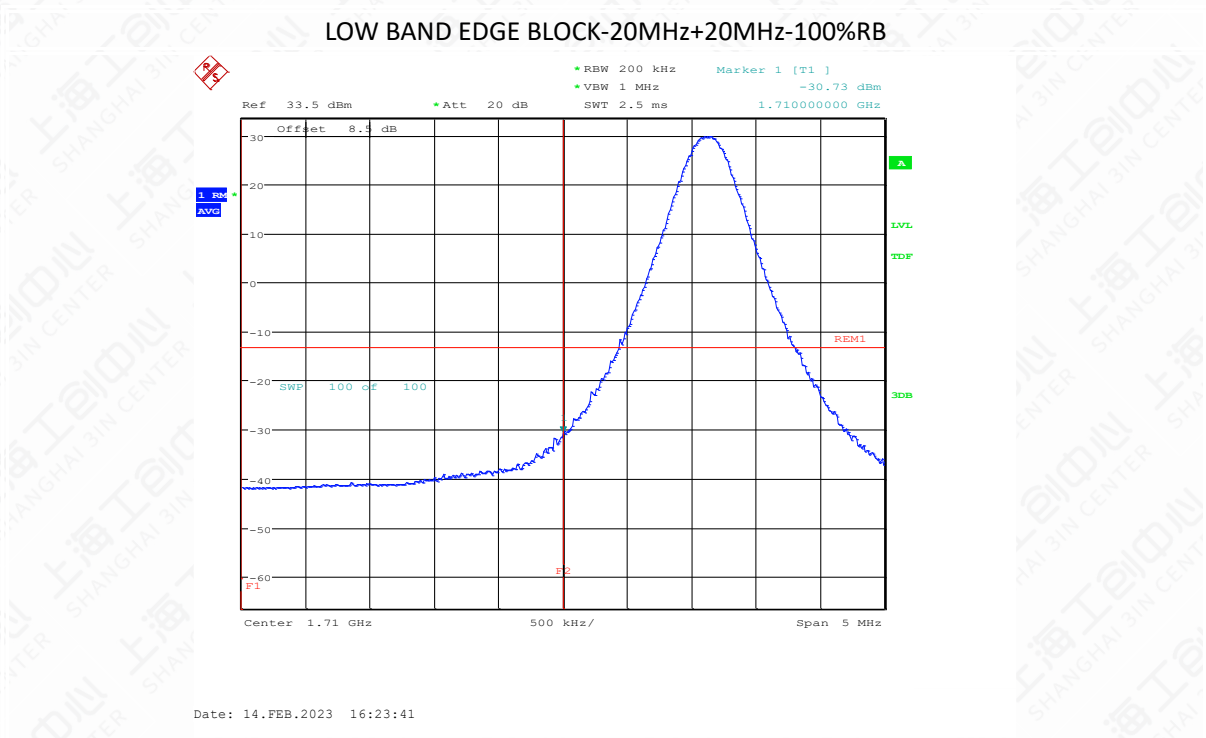
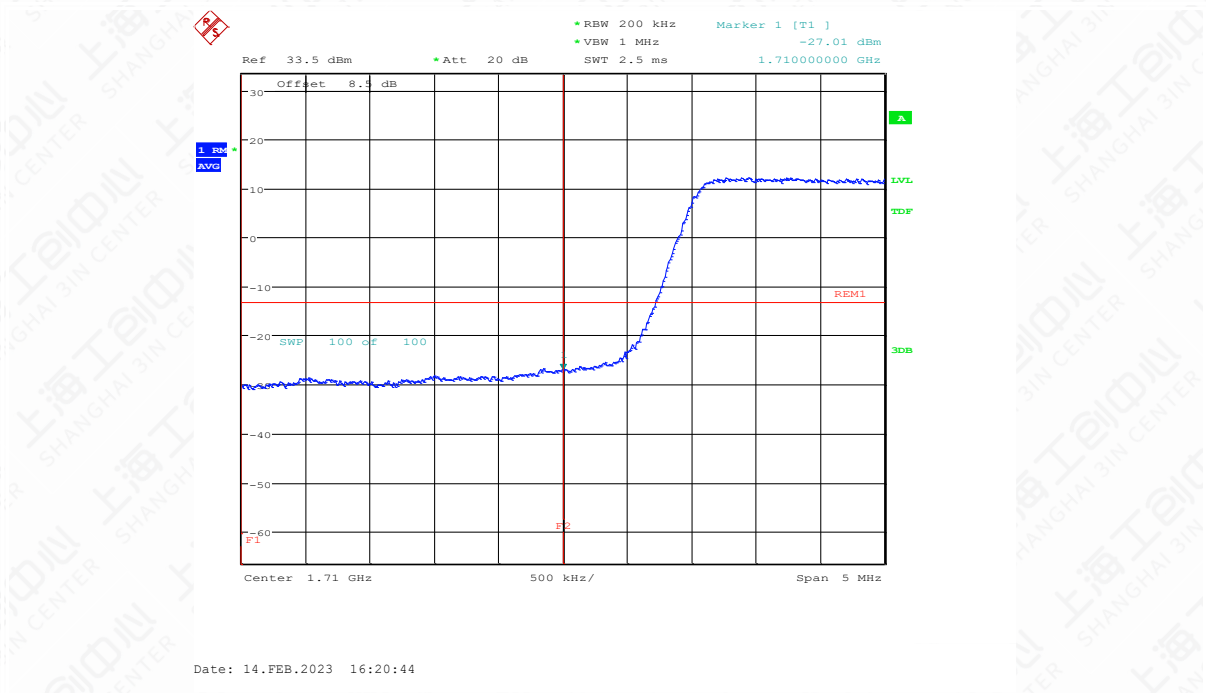
### OBW: 1RB-HIGH\_offset



### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



### LOW BAND EDGE BLOCK-20MHz+20MHz-100%RB



Note: Use cases with \* are subcontracted tests.

## 6.7 Conducted Spurious Emission

### 6.7.1 Measurement Method

The following steps outline the procedure used to measure the conducted emissions from the EUT.

1. Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the mobile station equipment tested, this equates to a frequency range of 13 MHz to 9 GHz, data taken from 10 MHz to 25 GHz.
2. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.
3. The number of sweep points of spectrum analyzer is set to 30001 which is greater than span/RBW.

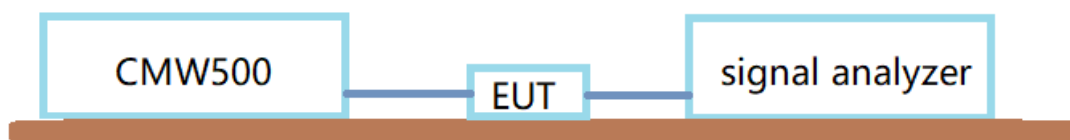
### 6.7.2 Measurement Limit

Part 27.53(g), 27.53(h), 27.53(m) specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

The specification that emissions shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

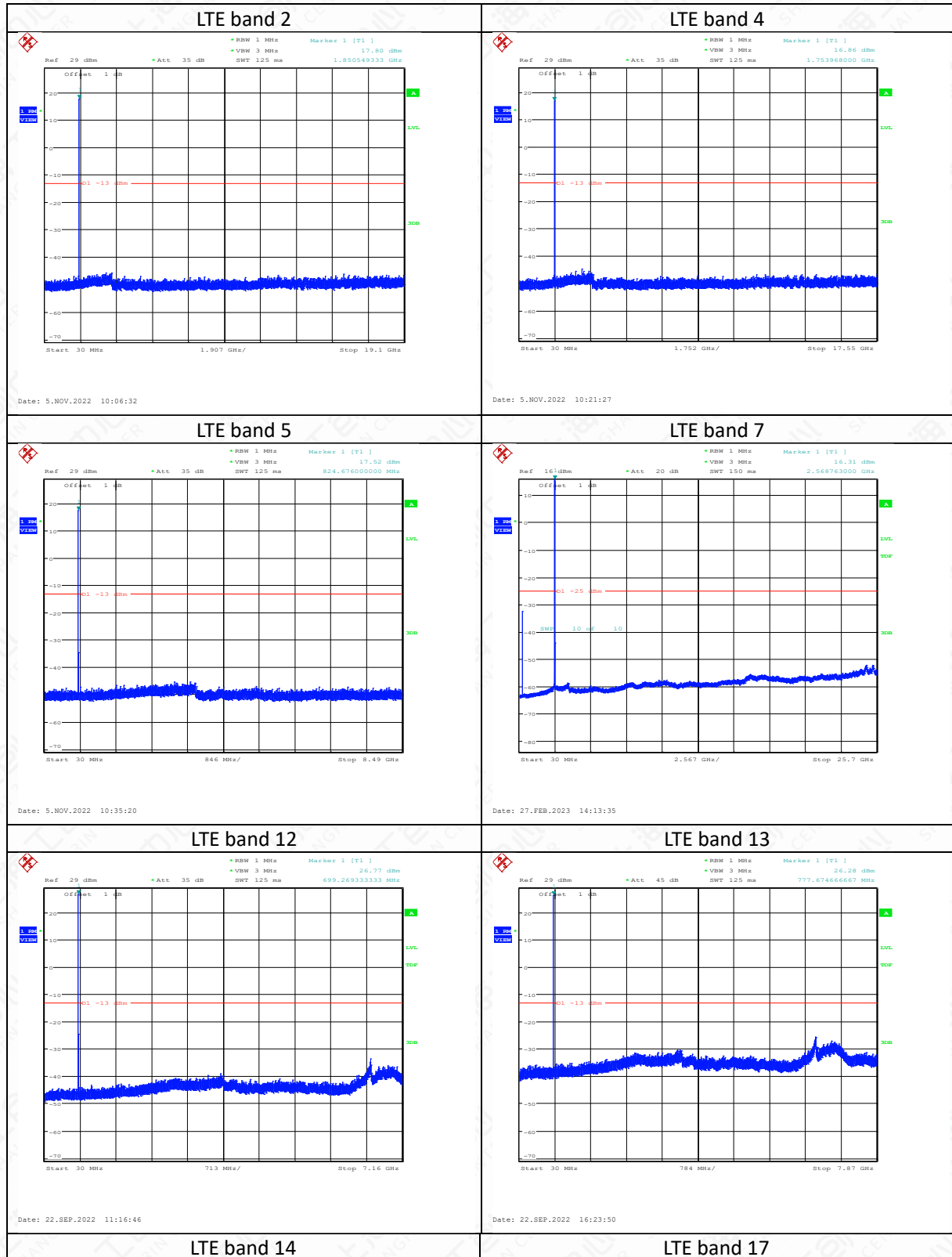
Part 27.53(m)(4) specifies for mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log(P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log(P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log(P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log(P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log(P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

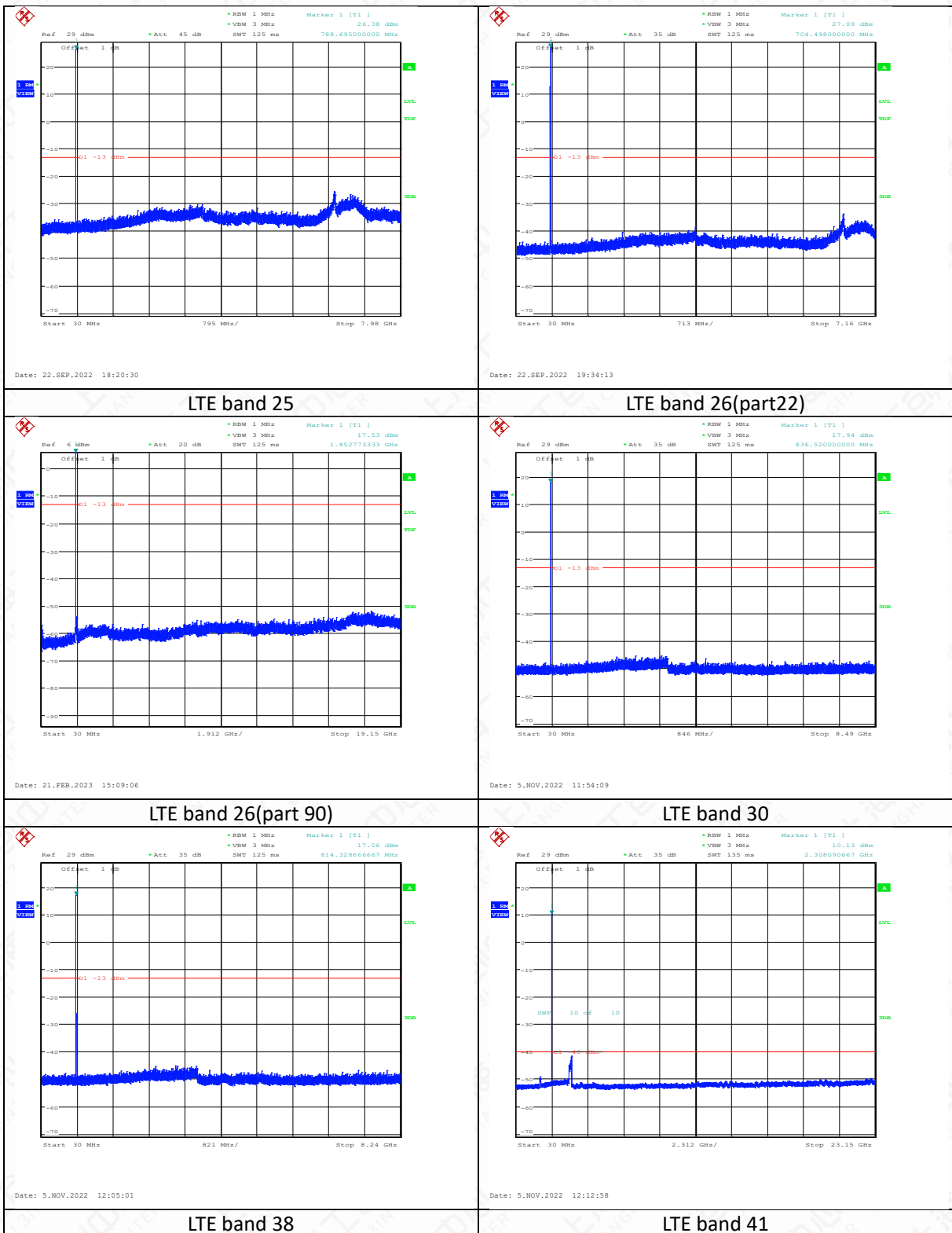
### 6.7.3 Test Setup

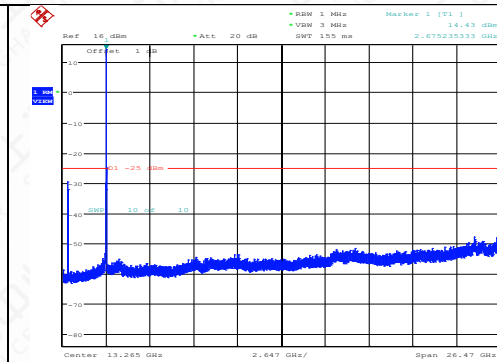
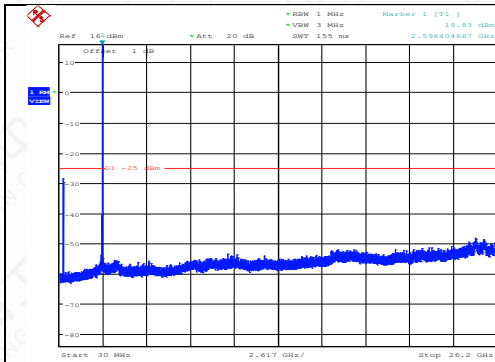


### 6.7.4 Measurement result

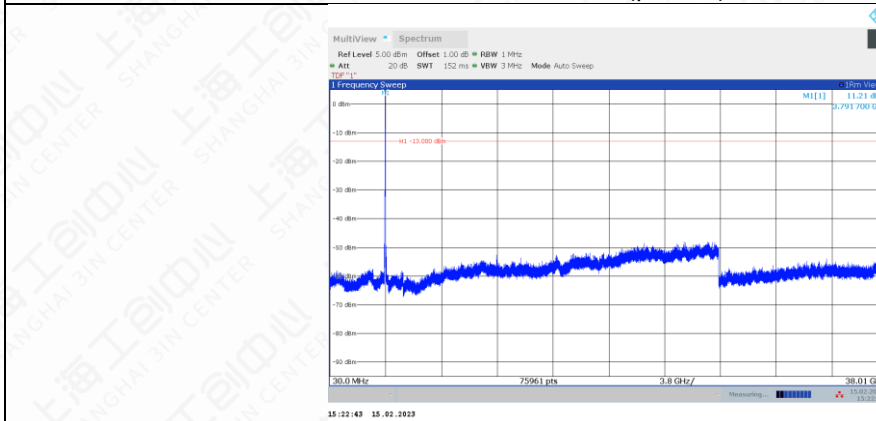
Only worst case result is given below



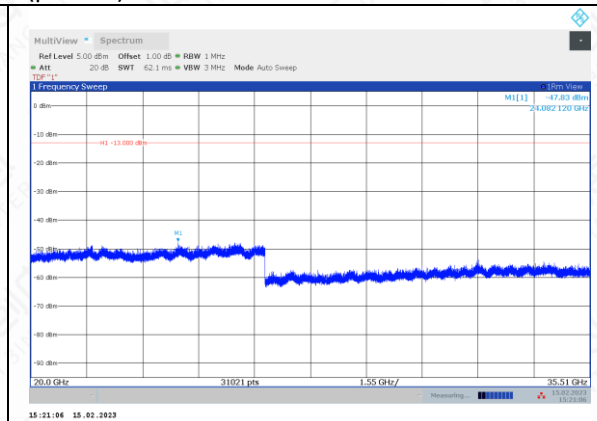
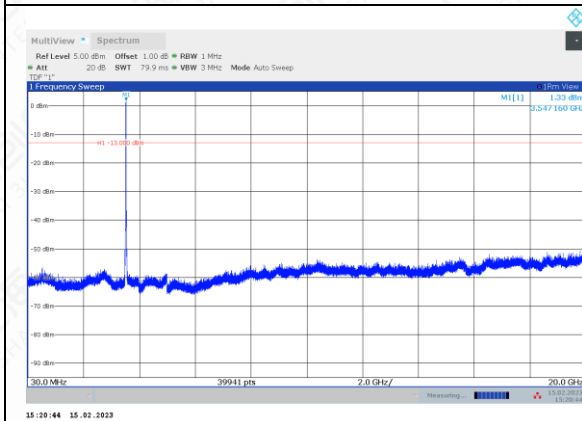




LTE band 43(part 27)

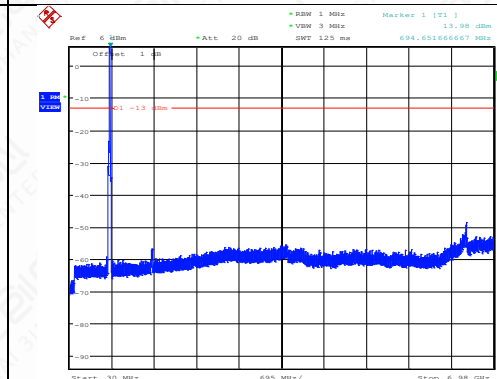
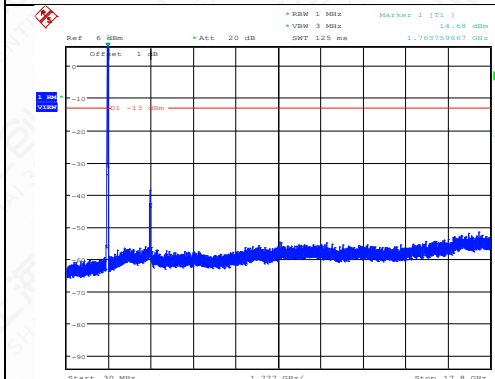


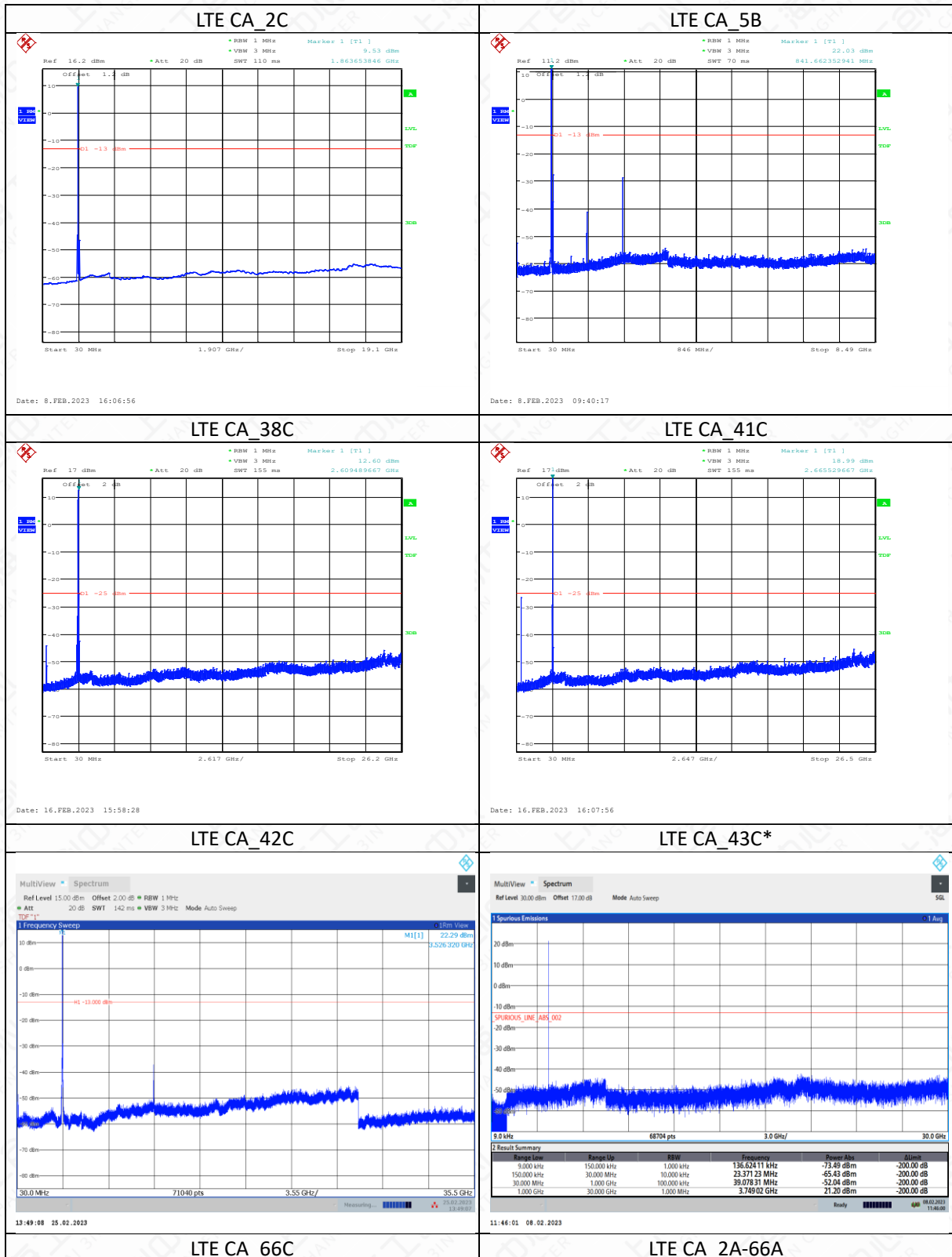
LTE band 42(part 27)

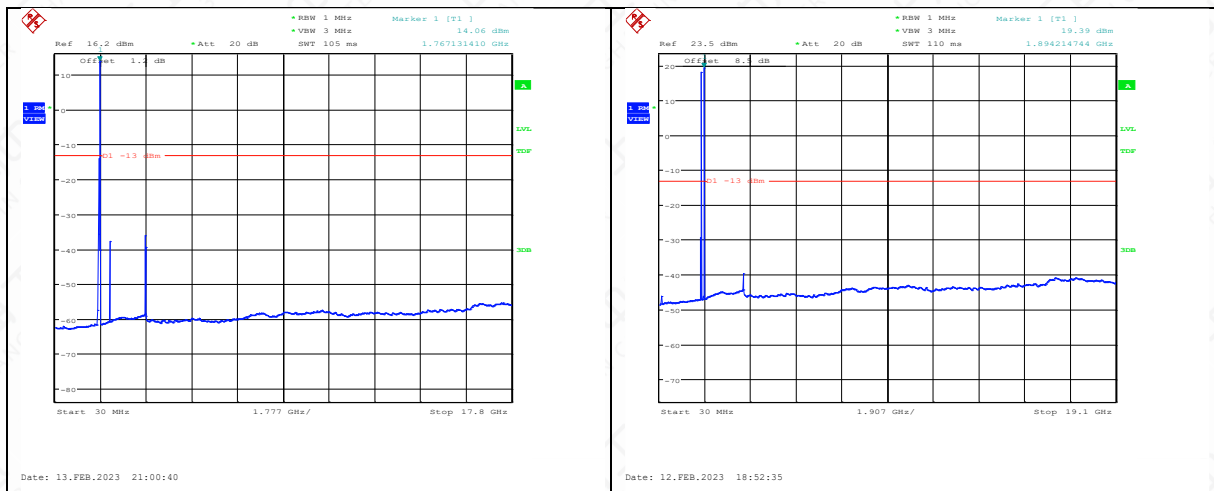


LTE band 66

LTE band 71







Note: Use cases with \* are subcontracted tests.

## 6.8 Peak-To-Average Power Ratio

### Reference

CFR Part2.1049,24.238, 24.232 (d), 27.50(a)

According to KDB 971168 5.7:

- Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
- Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
- Set the number of counts to a value that stabilizes the measured CCDF curve;
- Set the measurement interval to 1 ms
- Record the maximum PAPR level associated with a probability of 0.1%

### 6.8.1 Test Setup



### 6.8.2 Measurement results

#### LTE Band 2, 20MHz

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 1880            | 100%,0 | 4.94      | 6.35  | 6.63  |

#### LTE band 4, 20MHz

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 1732.5          | 100%,0 | 5.03      | 6.38  | 6.70  |

#### LTE band 5, 10MHz

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 836.5           | 100%,0 | 5.51      | 6.38  | 6.73  |

#### LTE band 7, 20MHz

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 2535            | 100%,0 | 4.90      | 6.25  | 6.51  |

#### LTE band 12,10MHz

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 707.5           | 100%,0 | 5.35      | 6.22  | 6.51  |

#### LTE band 13,10MHz

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 782             | 100%,0 | 5.61      | 6.38  | 6.86  |

#### LTE band 14,10MHz

| Frequency (MHz) | RB | PAPR (dB) |       |       |
|-----------------|----|-----------|-------|-------|
|                 |    | QPSK      | 16QAM | 64QAM |
|                 |    |           |       |       |

|     |        |      |      |      |
|-----|--------|------|------|------|
| 793 | 100%,0 | 5.61 | 6.38 | 6.76 |
|-----|--------|------|------|------|

**LTE band 17,10MHz**

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 710             | 100%,0 | 5.32      | 6.22  | 6.63  |

**LTE band 25,20MHz**

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 1882.5          | 100%,0 | 5.06      | 6.38  | 6.63  |

**LTE band 26(part 22),15MHz**

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 836.5           | 100%,0 | 4.49      | 5.77  | 6.38  |

**LTE band 25(part 90),10MHz**

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 819             | 100%,0 | 5.38      | 6.22  | 6.79  |

**LTE band 30,10MHz**

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 2310            | 100%,0 | 5.58      | 6.38  | 6.54  |

**LTE band 38, 20MHz**

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 2595            | 100%,0 | 7.69      | 8.97  | 9.20  |

**LTE band 41, 20MHz**

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 2593            | 100%,0 | 7.63      | 9.07  | 9.33  |

**LTE band 42, 20MHz(part 27)**

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 3500            | 100%,0 | 10.82     | 11.04 | 11.12 |

**LTE band 43, 20MHz(part 27)**

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 3750            | 100%,0 | 10.80     | 11.02 | 11.14 |

**LTE band 66, 20MHz**

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 1745            | 100%,0 | 5.00      | 6.41  | 6.73  |

**LTE band 71, 20MHz**

| Frequency (MHz) | RB     | PAPR (dB) |       |       |
|-----------------|--------|-----------|-------|-------|
|                 |        | QPSK      | 16QAM | 64QAM |
| 683             | 100%,0 | 5.00      | 6.35  | 6.54  |

**LTE 2C, 20MHz+20MHz**

| Frequency (MHz) | PAPR (dB) |       |       |
|-----------------|-----------|-------|-------|
|                 | QPSK      | 16QAM | 64QAM |

|      |      |      |      |
|------|------|------|------|
| 1880 | 8.08 | 8.30 | 8.30 |
|------|------|------|------|

**LTE 5B, 10MHz+10MHz**

| Frequency (MHz) | PAPR (dB) |       |       |
|-----------------|-----------|-------|-------|
|                 | QPSK      | 16QAM | 64QAM |
| 836.5           | 6.40      | 6.99  | 7.10  |

**LTE 38C, 20MHz+20MHz**

| Frequency (MHz) | PAPR (dB) |       |       |
|-----------------|-----------|-------|-------|
|                 | QPSK      | 16QAM | 64QAM |
| 2595            | 10.58     | 10.87 | 10.74 |

**LTE 41C, 20MHz+20MHz**

| Frequency (MHz) | PAPR (dB) |       |       |
|-----------------|-----------|-------|-------|
|                 | QPSK      | 16QAM | 64QAM |
| 2593            | 10.58     | 10.80 | 10.80 |

**LTE 42C, 20MHz+20MHz**

| Frequency (MHz) | PAPR (dB) |       |       |
|-----------------|-----------|-------|-------|
|                 | QPSK      | 16QAM | 64QAM |
| 3500            | 10.61     | 10.80 | 10.83 |

**LTE 43C, 20MHz+20MHz\***

| Frequency (MHz) | PAPR (dB) |       |       |
|-----------------|-----------|-------|-------|
|                 | QPSK      | 16QAM | 64QAM |
| 3750            | 14.86     | 13.14 | 12.98 |

**LTE 66C, 20MHz+20MHz**

| Frequency (MHz) | PAPR (dB) |       |       |
|-----------------|-----------|-------|-------|
|                 | QPSK      | 16QAM | 64QAM |
| 1755            | 8.11      | 8.33  | 8.27  |

**LTE band 2@CA\_2+66, 20MHz**

| Frequency (MHz) | PAPR (dB) |       |       |
|-----------------|-----------|-------|-------|
|                 | QPSK      | 16QAM | 64QAM |
| 1880            | 5.64      | 6.28  | 6.63  |

**LTE band 66@CA\_2+66, 20MHz**

| Frequency (MHz) | PAPR (dB) |       |       |
|-----------------|-----------|-------|-------|
|                 | QPSK      | 16QAM | 64QAM |
| 1745            | 4.90      | 6.28  | 6.60  |

Note: Use cases with \* are subcontracted tests.

## 6.9 Power Spectral Density

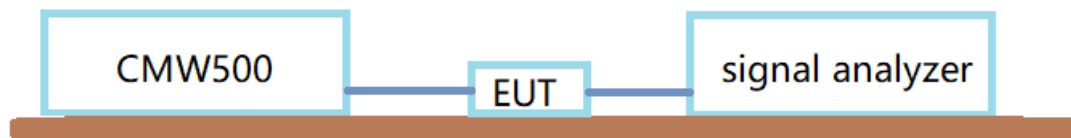
### Reference

CFR 27.50(a)(3)

For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in

the 2305-2315 MHz and 2350-2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

### 6.9.1 Test Setup



### 6.9.2 Measurement results

#### LTE Band 30

| Bandwidth | RB size/offset | Frequency (MHz) | Modulation | Avg Power (dBm/5MHz) | EIRP (dBm/5MHz) | Limit (dBm/5MHz) |
|-----------|----------------|-----------------|------------|----------------------|-----------------|------------------|
| 5MHz      | 1 RB low       | 2307.5          | QPSK       | 21.425               | 22.675          | 24               |
| 5MHz      | 1 RB mid       | 2307.5          | QPSK       | 21.451               | 22.701          | 24               |
| 5MHz      | 1 RB high      | 2307.5          | QPSK       | 21.331               | 22.581          | 24               |
| 5MHz      | 50%,low        | 2307.5          | QPSK       | 20.148               | 21.398          | 24               |
| 5MHz      | 50% RB mid     | 2307.5          | QPSK       | 20.144               | 21.394          | 24               |
| 5MHz      | 50%,high       | 2307.5          | QPSK       | 20.116               | 21.366          | 24               |
| 5MHz      | 100% RB        | 2307.5          | QPSK       | 19.384               | 20.634          | 24               |
| 5MHz      | 1 RB low       | 2307.5          | 16QAM      | 20.491               | 21.741          | 24               |
| 5MHz      | 1 RB mid       | 2307.5          | 16QAM      | 20.557               | 21.807          | 24               |
| 5MHz      | 1 RB high      | 2307.5          | 16QAM      | 20.430               | 21.68           | 24               |
| 5MHz      | 50%,low        | 2307.5          | 16QAM      | 19.174               | 20.424          | 24               |
| 5MHz      | 50% RB mid     | 2307.5          | 16QAM      | 19.159               | 20.409          | 24               |
| 5MHz      | 50%,high       | 2307.5          | 16QAM      | 19.089               | 20.339          | 24               |
| 5MHz      | 100% RB        | 2307.5          | 16QAM      | 18.392               | 19.642          | 24               |
| 5MHz      | 1 RB low       | 2307.5          | 64QAM      | 20.466               | 21.716          | 24               |
| 5MHz      | 1 RB mid       | 2307.5          | 64QAM      | 20.514               | 21.764          | 24               |
| 5MHz      | 1 RB high      | 2307.5          | 64QAM      | 20.364               | 21.614          | 24               |
| 5MHz      | 50%,low        | 2307.5          | 64QAM      | 19.160               | 20.41           | 24               |
| 5MHz      | 50% RB mid     | 2307.5          | 64QAM      | 19.197               | 20.447          | 24               |
| 5MHz      | 50%,high       | 2307.5          | 64QAM      | 19.150               | 20.4            | 24               |
| 5MHz      | 100% RB        | 2307.5          | 64QAM      | 18.353               | 19.603          | 24               |
| 5MHz      | 1 RB low       | 2310            | QPSK       | 21.289               | 22.539          | 24               |
| 5MHz      | 1 RB mid       | 2310            | QPSK       | 21.348               | 22.598          | 24               |
| 5MHz      | 1 RB high      | 2310            | QPSK       | 21.216               | 22.466          | 24               |
| 5MHz      | 50%,low        | 2310            | QPSK       | 19.942               | 21.192          | 24               |
| 5MHz      | 50% RB mid     | 2310            | QPSK       | 20.034               | 21.284          | 24               |
| 5MHz      | 50%,high       | 2310            | QPSK       | 19.996               | 21.246          | 24               |
| 5MHz      | 100% RB        | 2310            | QPSK       | 19.231               | 20.481          | 24               |
| 5MHz      | 1 RB low       | 2310            | 16QAM      | 20.405               | 21.655          | 24               |
| 5MHz      | 1 RB mid       | 2310            | 16QAM      | 20.432               | 21.682          | 24               |
| 5MHz      | 1 RB high      | 2310            | 16QAM      | 20.371               | 21.621          | 24               |
| 5MHz      | 50%,low        | 2310            | 16QAM      | 18.987               | 20.237          | 24               |
| 5MHz      | 50% RB mid     | 2310            | 16QAM      | 19.115               | 20.365          | 24               |
| 5MHz      | 50%,high       | 2310            | 16QAM      | 19.052               | 20.302          | 24               |

| Bandwidth | RB size/offset | Frequency (MHz) | Modulation | Avg Power (dBm/5MHz) | EIRP (dBm/5MHz) | Limit (dBm/5MHz) |
|-----------|----------------|-----------------|------------|----------------------|-----------------|------------------|
| 5MHz      | 100% RB        | 2310            | 16QAM      | 18.241               | 19.491          | 24               |
| 5MHz      | 1 RB low       | 2310            | 64QAM      | 20.438               | 21.688          | 24               |
| 5MHz      | 1 RB mid       | 2310            | 64QAM      | 20.462               | 21.712          | 24               |
| 5MHz      | 1 RB high      | 2310            | 64QAM      | 20.342               | 21.592          | 24               |
| 5MHz      | 50%,low        | 2310            | 64QAM      | 18.992               | 20.242          | 24               |
| 5MHz      | 50% RB mid     | 2310            | 64QAM      | 19.046               | 20.296          | 24               |
| 5MHz      | 50%,high       | 2310            | 64QAM      | 19.016               | 20.266          | 24               |
| 5MHz      | 100% RB        | 2310            | 64QAM      | 18.224               | 19.474          | 24               |
| 5MHz      | 1 RB low       | 2312.5          | QPSK       | 21.252               | 22.502          | 24               |
| 5MHz      | 1 RB mid       | 2312.5          | QPSK       | 21.300               | 22.55           | 24               |
| 5MHz      | 1 RB high      | 2312.5          | QPSK       | 21.260               | 22.51           | 24               |
| 5MHz      | 50%,low        | 2312.5          | QPSK       | 19.980               | 21.23           | 24               |
| 5MHz      | 50% RB mid     | 2312.5          | QPSK       | 19.982               | 21.232          | 24               |
| 5MHz      | 50%,high       | 2312.5          | QPSK       | 19.974               | 21.224          | 24               |
| 5MHz      | 100% RB        | 2312.5          | QPSK       | 19.207               | 20.457          | 24               |
| 5MHz      | 1 RB low       | 2312.5          | 16QAM      | 20.433               | 21.683          | 24               |
| 5MHz      | 1 RB mid       | 2312.5          | 16QAM      | 20.482               | 21.732          | 24               |
| 5MHz      | 1 RB high      | 2312.5          | 16QAM      | 20.387               | 21.637          | 24               |
| 5MHz      | 50%,low        | 2312.5          | 16QAM      | 18.997               | 20.247          | 24               |
| 5MHz      | 50% RB mid     | 2312.5          | 16QAM      | 19.031               | 20.281          | 24               |
| 5MHz      | 50%,high       | 2312.5          | 16QAM      | 19.025               | 20.275          | 24               |
| 5MHz      | 100% RB        | 2312.5          | 16QAM      | 18.245               | 19.495          | 24               |
| 5MHz      | 1 RB low       | 2312.5          | 64QAM      | 20.380               | 21.63           | 24               |
| 5MHz      | 1 RB mid       | 2312.5          | 64QAM      | 20.473               | 21.723          | 24               |
| 5MHz      | 1 RB high      | 2312.5          | 64QAM      | 20.373               | 21.623          | 24               |
| 5MHz      | 50%,low        | 2312.5          | 64QAM      | 18.964               | 20.214          | 24               |
| 5MHz      | 50% RB mid     | 2312.5          | 64QAM      | 19.053               | 20.303          | 24               |
| 5MHz      | 50%,high       | 2312.5          | 64QAM      | 19.018               | 20.268          | 24               |
| 5MHz      | 100% RB        | 2312.5          | 64QAM      | 18.260               | 19.51           | 24               |
| 10MHz     | 1 RB low       | 2310            | QPSK       | 21.269               | 22.519          | 24               |
| 10MHz     | 1 RB mid       | 2310            | QPSK       | 21.241               | 22.491          | 24               |
| 10MHz     | 1 RB high      | 2310            | QPSK       | 21.189               | 22.439          | 24               |
| 10MHz     | 50%,low        | 2310            | QPSK       | 19.268               | 20.518          | 24               |
| 10MHz     | 50% RB mid     | 2310            | QPSK       | 19.235               | 20.485          | 24               |
| 10MHz     | 50%,high       | 2310            | QPSK       | 19.261               | 20.511          | 24               |
| 10MHz     | 100% RB        | 2310            | QPSK       | 17.375               | 18.625          | 24               |
| 10MHz     | 1 RB low       | 2310            | 16QAM      | 20.430               | 21.68           | 24               |
| 10MHz     | 1 RB mid       | 2310            | 16QAM      | 20.411               | 21.661          | 24               |
| 10MHz     | 1 RB high      | 2310            | 16QAM      | 20.356               | 21.606          | 24               |
| 10MHz     | 50%,low        | 2310            | 16QAM      | 18.262               | 19.512          | 24               |
| 10MHz     | 50% RB mid     | 2310            | 16QAM      | 18.251               | 19.501          | 24               |
| 10MHz     | 50%,high       | 2310            | 16QAM      | 18.229               | 19.479          | 24               |
| 10MHz     | 100% RB        | 2310            | 16QAM      | 16.292               | 17.542          | 24               |
| 10MHz     | 1 RB low       | 2310            | 64QAM      | 20.475               | 21.725          | 24               |
| 10MHz     | 1 RB mid       | 2310            | 64QAM      | 20.416               | 21.666          | 24               |
| 10MHz     | 1 RB high      | 2310            | 64QAM      | 20.368               | 21.618          | 24               |
| 10MHz     | 50%,low        | 2310            | 64QAM      | 18.240               | 19.49           | 24               |
| 10MHz     | 50% RB mid     | 2310            | 64QAM      | 18.234               | 19.484          | 24               |
| 10MHz     | 50%,high       | 2310            | 64QAM      | 18.237               | 19.487          | 24               |

| Bandwidth | RB size/offset | Frequency (MHz) | Modulation | Avg Power (dBm/5MHz) | EIRP (dBm/5MHz) | Limit (dBm/5MHz) |
|-----------|----------------|-----------------|------------|----------------------|-----------------|------------------|
| 10MHz     | 100% RB        | 2310            | 64QAM      | 16.297               | 17.547          | 24               |
| 10MHz     | 1 RB low       | 2310            | QPSK       | 21.237               | 22.487          | 24               |
| 10MHz     | 1 RB mid       | 2310            | QPSK       | 21.220               | 22.47           | 24               |
| 10MHz     | 1 RB high      | 2310            | QPSK       | 21.173               | 22.423          | 24               |
| 10MHz     | 50%,low        | 2310            | QPSK       | 19.240               | 20.49           | 24               |
| 10MHz     | 50% RB mid     | 2310            | QPSK       | 19.189               | 20.439          | 24               |
| 10MHz     | 50%,high       | 2310            | QPSK       | 19.223               | 20.473          | 24               |
| 10MHz     | 100% RB        | 2310            | QPSK       | 17.304               | 18.554          | 24               |
| 10MHz     | 1 RB low       | 2310            | 16QAM      | 20.398               | 21.648          | 24               |
| 10MHz     | 1 RB mid       | 2310            | 16QAM      | 20.379               | 21.629          | 24               |
| 10MHz     | 1 RB high      | 2310            | 16QAM      | 20.355               | 21.605          | 24               |
| 10MHz     | 50%,low        | 2310            | 16QAM      | 18.245               | 19.495          | 24               |
| 10MHz     | 50% RB mid     | 2310            | 16QAM      | 18.209               | 19.459          | 24               |
| 10MHz     | 50%,high       | 2310            | 16QAM      | 18.261               | 19.511          | 24               |
| 10MHz     | 100% RB        | 2310            | 16QAM      | 16.305               | 17.555          | 24               |
| 10MHz     | 1 RB low       | 2310            | 64QAM      | 20.432               | 21.682          | 24               |
| 10MHz     | 1 RB mid       | 2310            | 64QAM      | 20.387               | 21.637          | 24               |
| 10MHz     | 1 RB high      | 2310            | 64QAM      | 20.353               | 21.603          | 24               |
| 10MHz     | 50%,low        | 2310            | 64QAM      | 18.236               | 19.486          | 24               |
| 10MHz     | 50% RB mid     | 2310            | 64QAM      | 18.223               | 19.473          | 24               |
| 10MHz     | 50%,high       | 2310            | 64QAM      | 18.270               | 19.52           | 24               |
| 10MHz     | 100% RB        | 2310            | 64QAM      | 16.290               | 17.54           | 24               |
| 10MHz     | 1 RB low       | 2310            | QPSK       | 21.250               | 22.5            | 24               |
| 10MHz     | 1 RB mid       | 2310            | QPSK       | 21.205               | 22.455          | 24               |
| 10MHz     | 1 RB high      | 2310            | QPSK       | 21.175               | 22.425          | 24               |
| 10MHz     | 50%,low        | 2310            | QPSK       | 19.207               | 20.457          | 24               |
| 10MHz     | 50% RB mid     | 2310            | QPSK       | 19.192               | 20.442          | 24               |
| 10MHz     | 50%,high       | 2310            | QPSK       | 19.218               | 20.468          | 24               |
| 10MHz     | 100% RB        | 2310            | QPSK       | 17.287               | 18.537          | 24               |
| 10MHz     | 1 RB low       | 2310            | 16QAM      | 20.396               | 21.646          | 24               |
| 10MHz     | 1 RB mid       | 2310            | 16QAM      | 20.366               | 21.616          | 24               |
| 10MHz     | 1 RB high      | 2310            | 16QAM      | 20.325               | 21.575          | 24               |
| 10MHz     | 50%,low        | 2310            | 16QAM      | 18.234               | 19.484          | 24               |
| 10MHz     | 50% RB mid     | 2310            | 16QAM      | 18.217               | 19.467          | 24               |
| 10MHz     | 50%,high       | 2310            | 16QAM      | 18.245               | 19.495          | 24               |
| 10MHz     | 100% RB        | 2310            | 16QAM      | 16.237               | 17.487          | 24               |
| 10MHz     | 1 RB low       | 2310            | 64QAM      | 20.432               | 21.682          | 24               |
| 10MHz     | 1 RB mid       | 2310            | 64QAM      | 20.342               | 21.592          | 24               |
| 10MHz     | 1 RB high      | 2310            | 64QAM      | 20.347               | 21.597          | 24               |
| 10MHz     | 50%,low        | 2310            | 64QAM      | 18.202               | 19.452          | 24               |
| 10MHz     | 50% RB mid     | 2310            | 64QAM      | 18.203               | 19.453          | 24               |
| 10MHz     | 50%,high       | 2310            | 64QAM      | 18.247               | 19.497          | 24               |
| 10MHz     | 100% RB        | 2310            | 64QAM      | 16.279               | 17.529          | 24               |

## Annex A: Revised History

| Version | Revised Content |
|---------|-----------------|
| V00     | Initial         |

## Annex B: Accreditation Certificate



### Accredited Laboratory

A2LA has accredited

## INDUSTRIAL INTERNET INNOVATION CENTER (SHANGHAI) CO., LTD.

Shanghai, People's Republic of China

for technical competence in the field of

### Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 12<sup>th</sup> day of April 2021.



Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 3682.01  
Valid to February 28, 2023

*For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.*

**END OF REPORT**