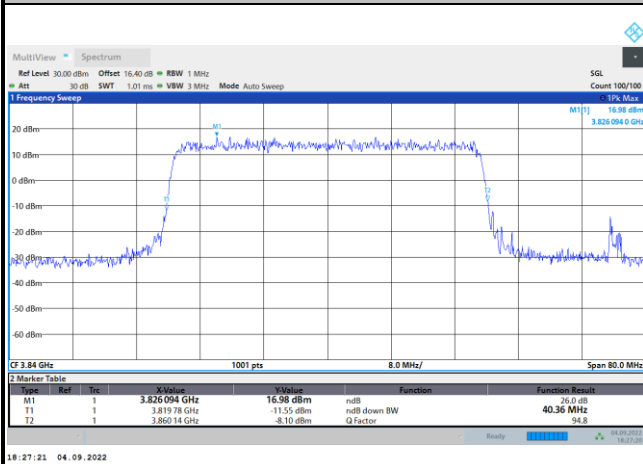


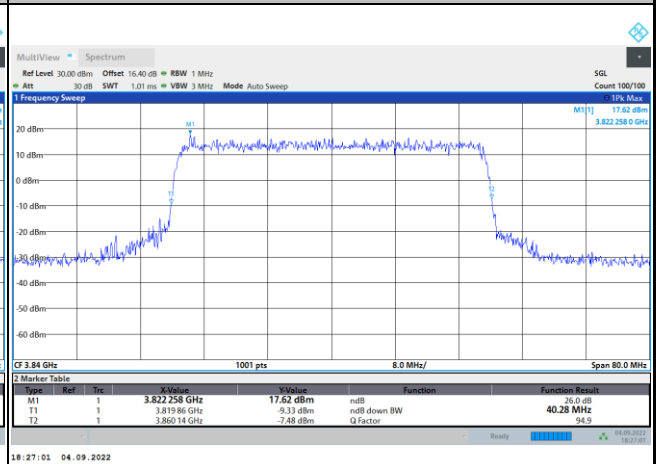


## FR1 n77 / 40MHz / CP OFDM / Middle Channel / Full RB

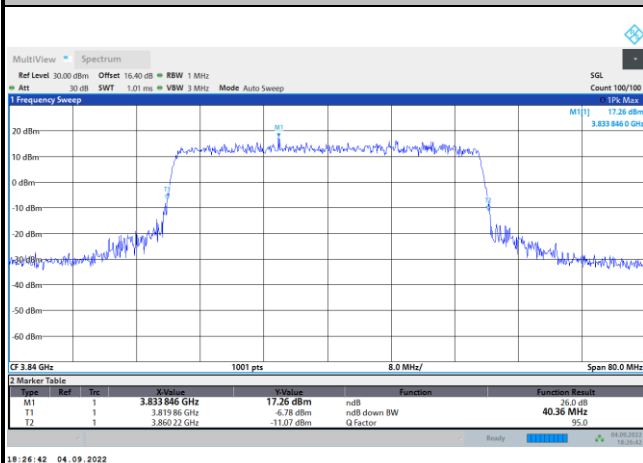
## QPSK



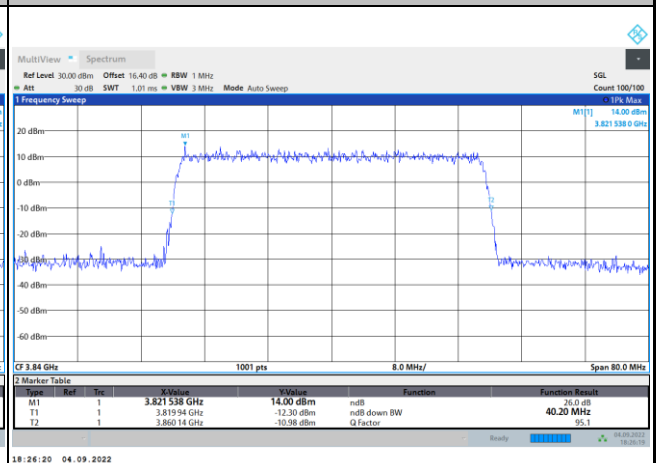
## 16QAM



## 64QAM



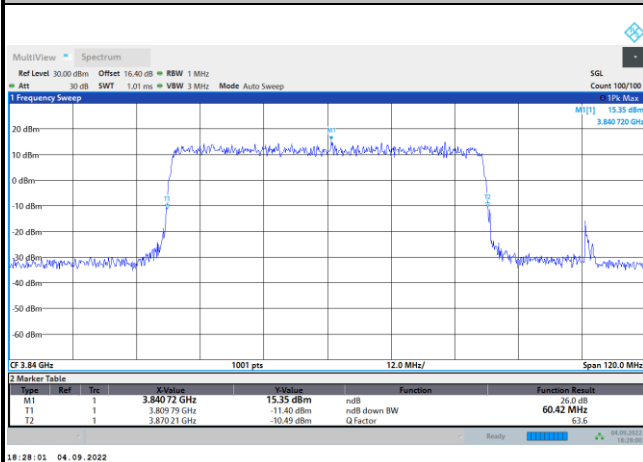
## 256QAM



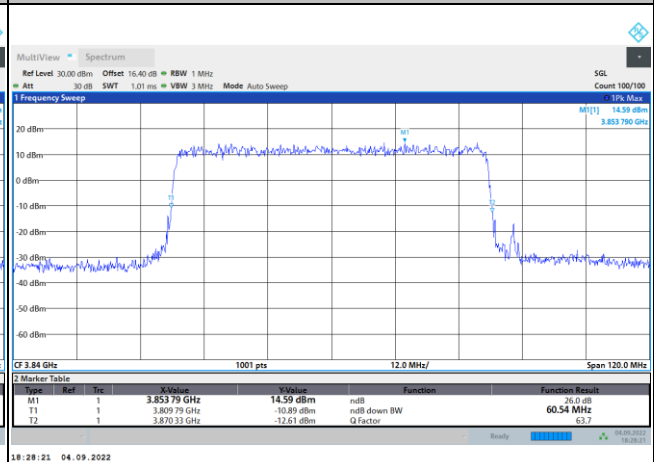


## FR1 n77 / 60MHz / CP OFDM / Middle Channel / Full RB

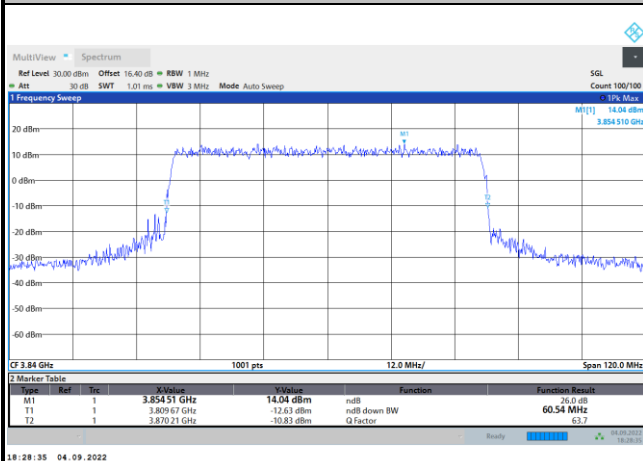
## QPSK



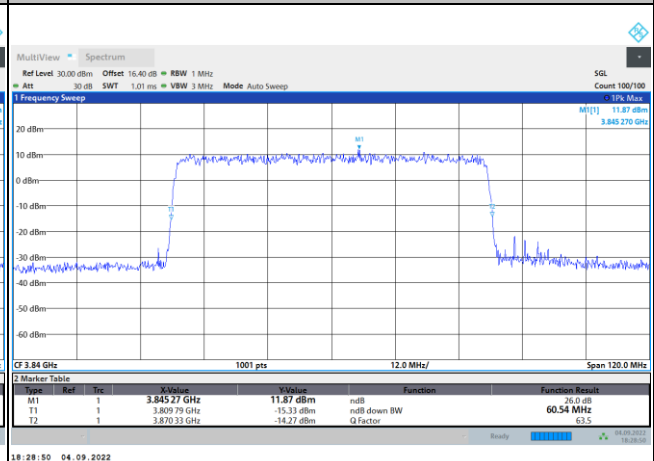
## 16QAM



## 64QAM



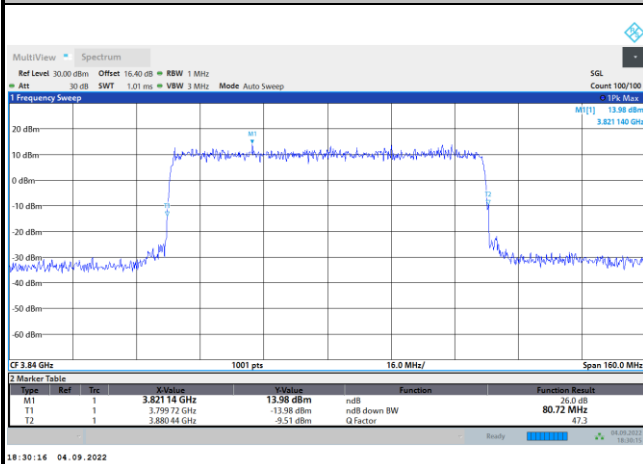
## 256QAM



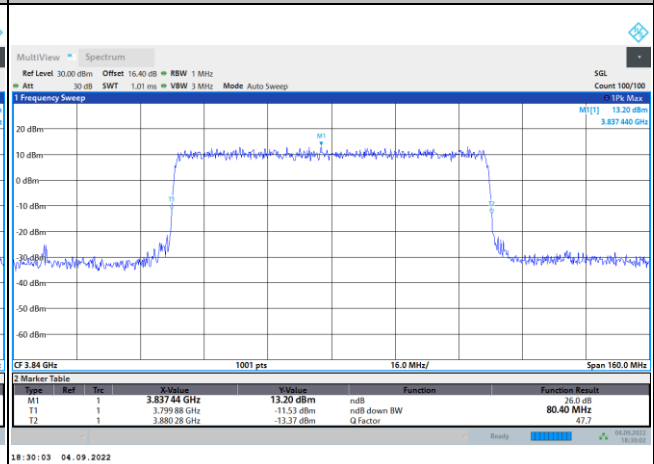


## FR1 n77 / 80MHz / CP OFDM / Middle Channel / Full RB

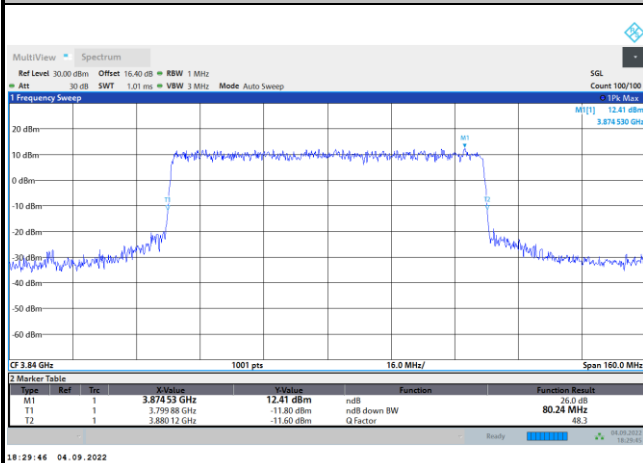
## QPSK



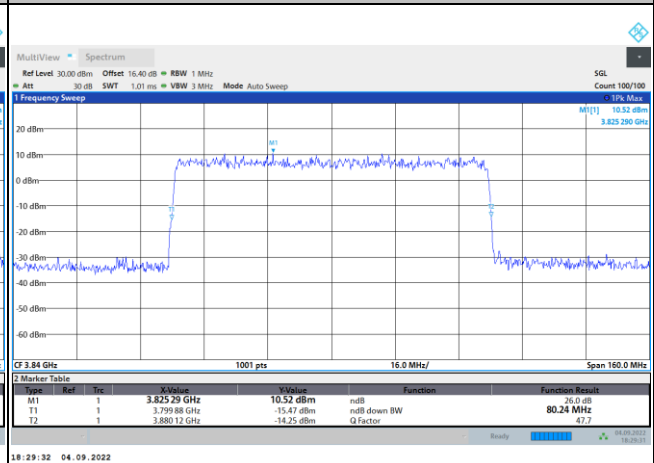
## 16QAM



## 64QAM



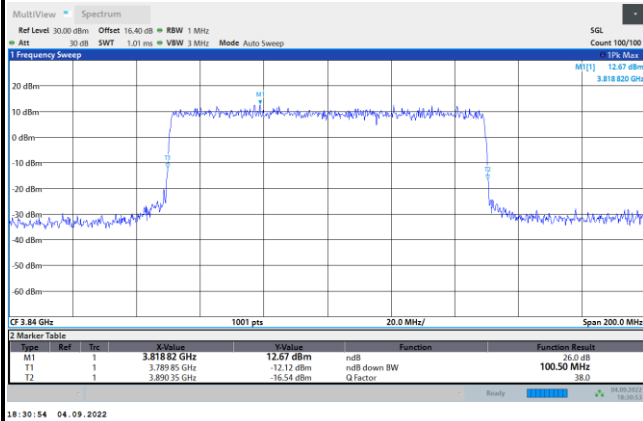
## 256QAM



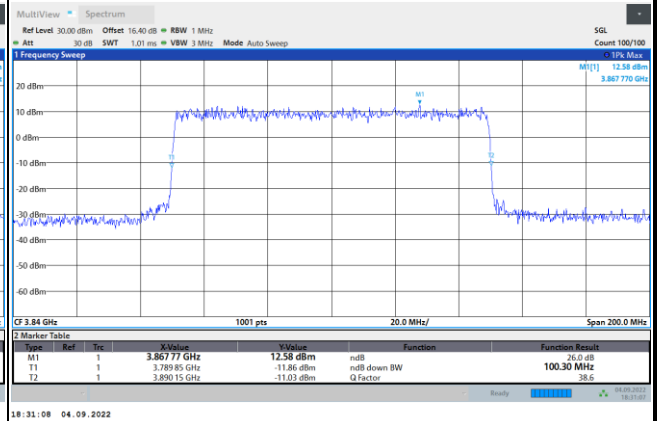


## FR1 n77 / 100MHz / CP OFDM / Middle Channel / Full RB

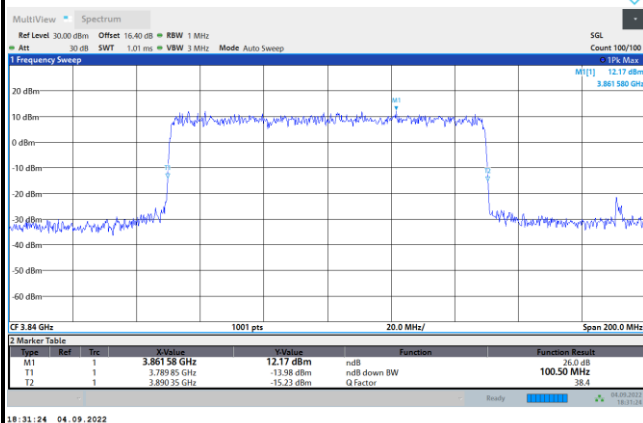
## QPSK



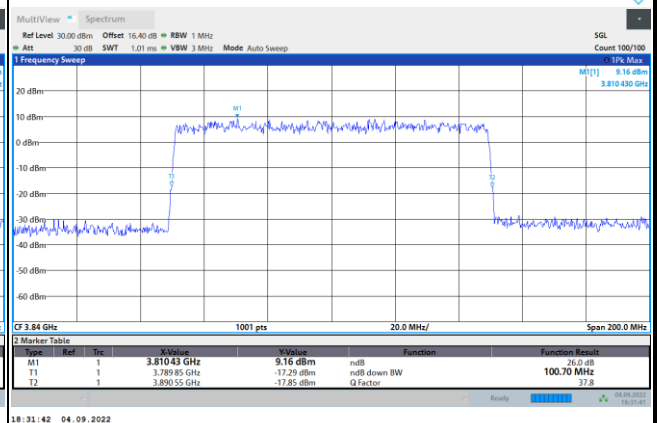
## 16QAM



## 64QAM



## 256QAM



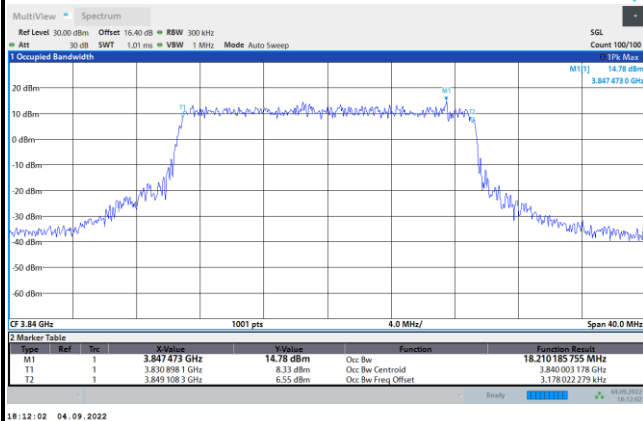
**Occupied Bandwidth**

| Mode      | FR1 n77 : OB BW(MHz) / CP OFDM |        |       |        |       |        |        |        |
|-----------|--------------------------------|--------|-------|--------|-------|--------|--------|--------|
| BW        | 10MHz                          |        | 15MHz |        | 20MHz |        | 25MHz  |        |
| Mod.      | QPSK                           | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | -                              | -      | -     | -      | 18.21 | 18.22  | -      | -      |
| Mod.      | 64QAM                          | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | -                              | -      | -     | -      | 18.21 | 18.22  | -      | -      |
| BW        | 30MHz                          |        | 40MHz |        | 50MHz |        | 60MHz  |        |
| Mod.      | QPSK                           | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | 27.93                          | 27.80  | 37.99 | 37.91  | -     | -      | 58.15  | 57.78  |
| Mod.      | 64QAM                          | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | 27.80                          | 27.76  | 37.90 | 37.95  | -     | -      | 57.80  | 57.70  |
| BW        | 70MHz                          |        | 80MHz |        | 90MHz |        | 100MHz |        |
| Mod.      | QPSK                           | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | -                              | -      | 77.37 | 77.40  | -     | -      | 97.10  | 97.27  |
| Mod.      | 64QAM                          | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | -                              | -      | 77.29 | 77.27  | -     | -      | 97.34  | 97.16  |

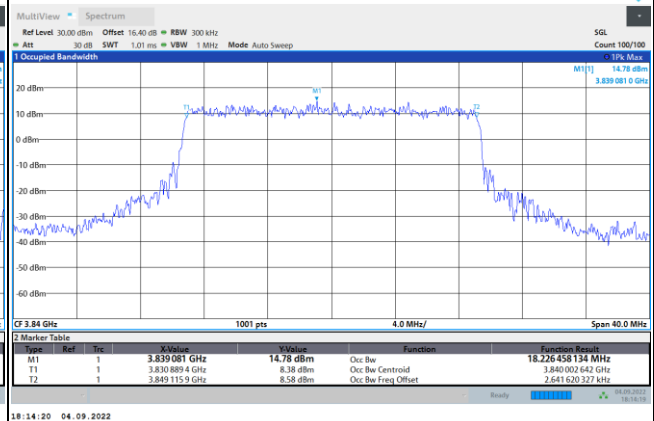


## FR1 n77 / 20MHz / CP OFDM / Middle Channel / Full RB

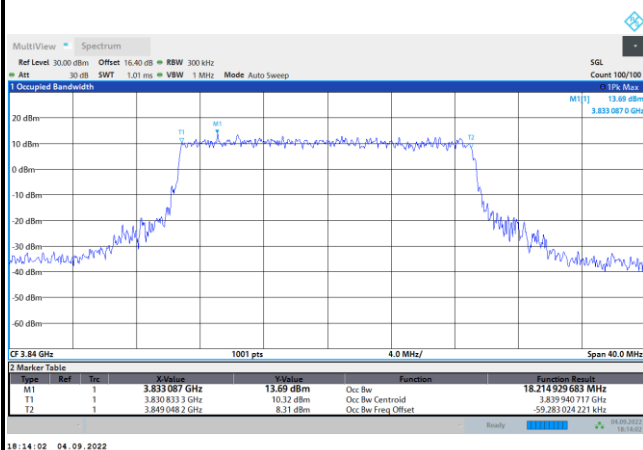
## QPSK



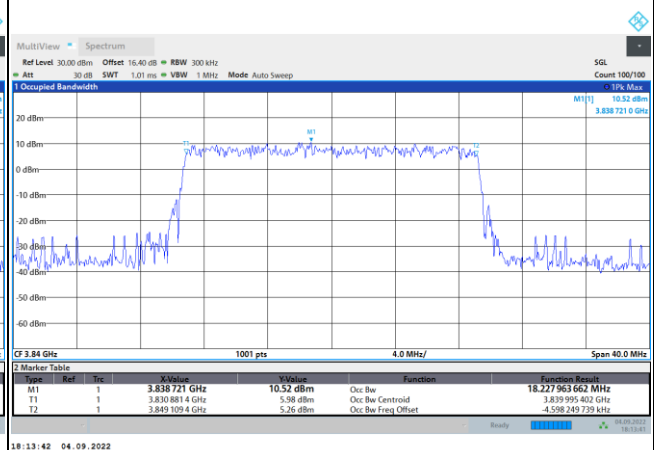
## 16QAM



## 64QAM



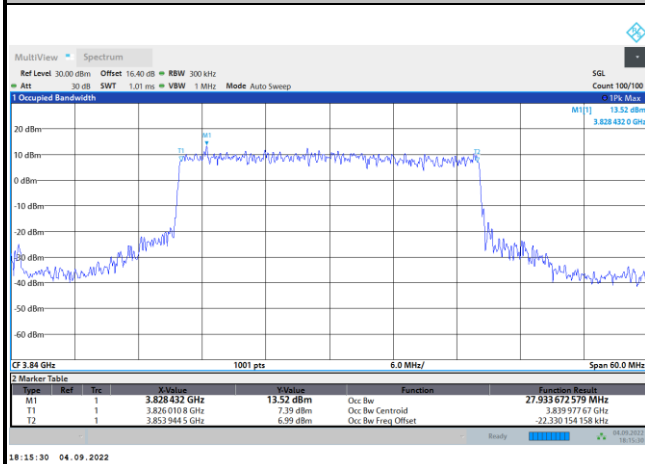
## 256QAM



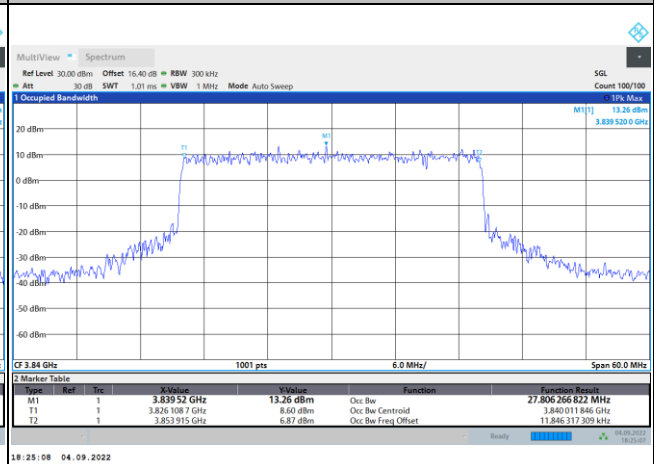


## FR1 n77 / 30MHz / CP OFDM / Middle Channel / Full RB

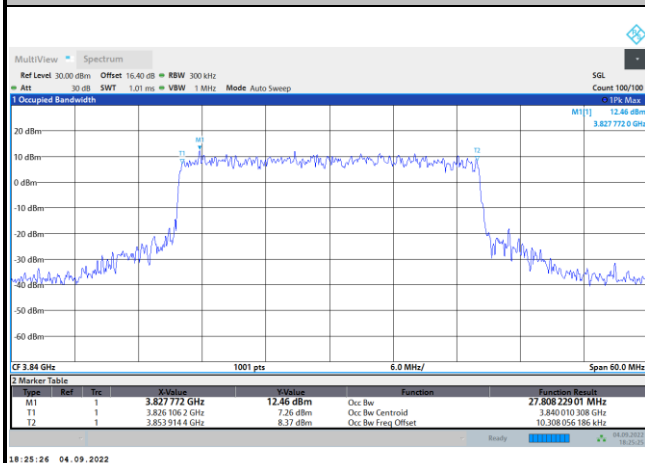
## QPSK



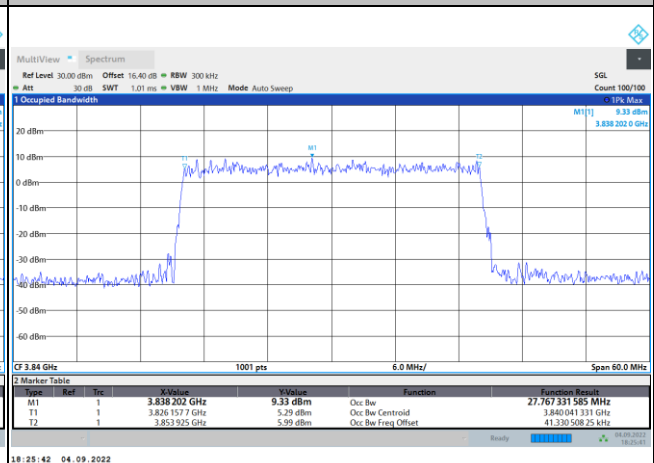
## 16QAM



## 64QAM



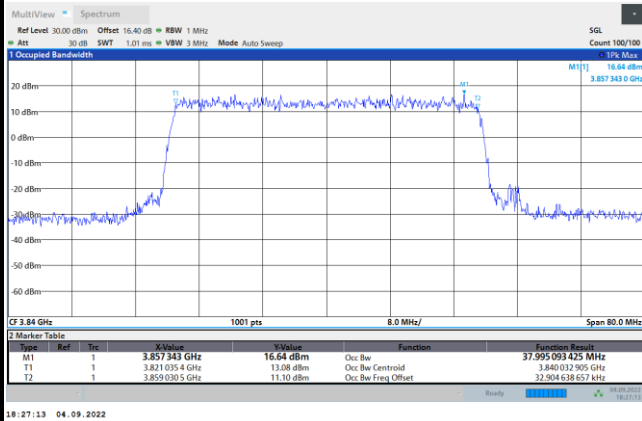
## 256QAM



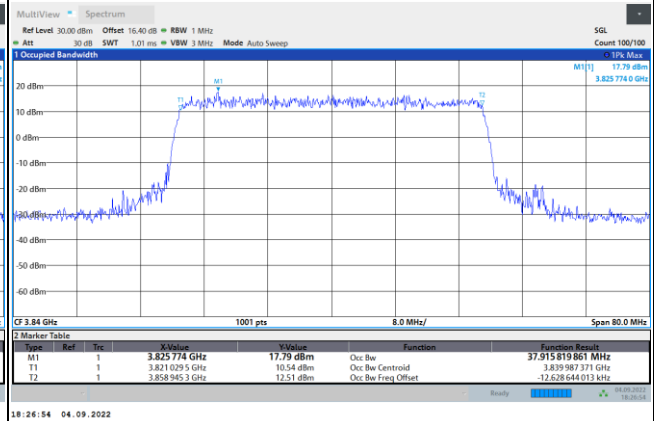


## FR1 n77 / 40MHz / CP OFDM / Middle Channel / Full RB

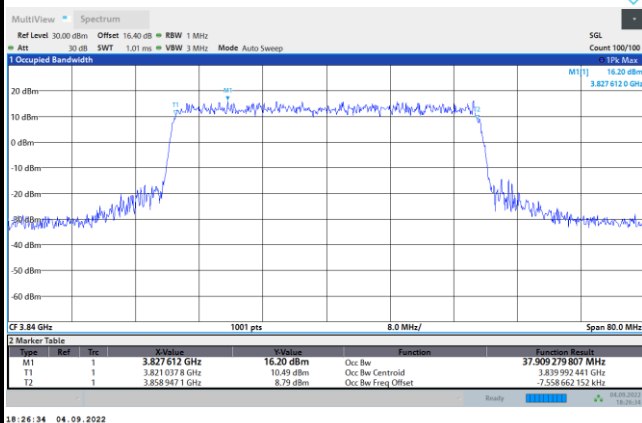
## QPSK



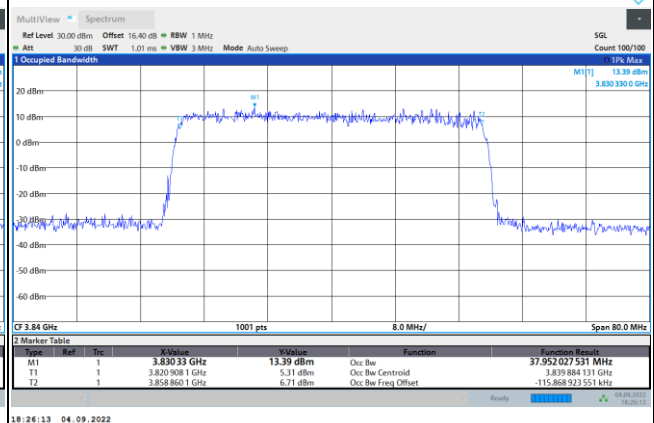
## 16QAM



## 64QAM



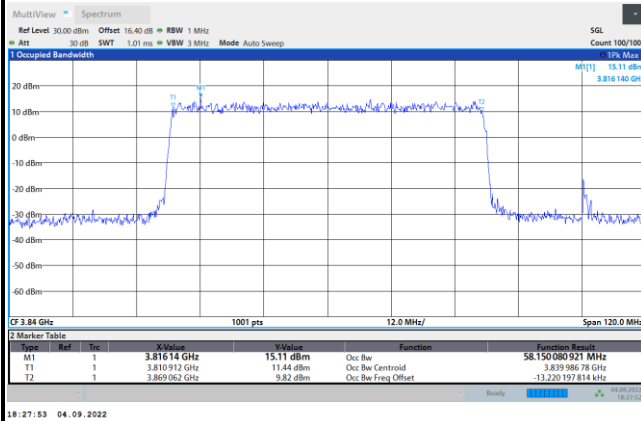
## 256QAM



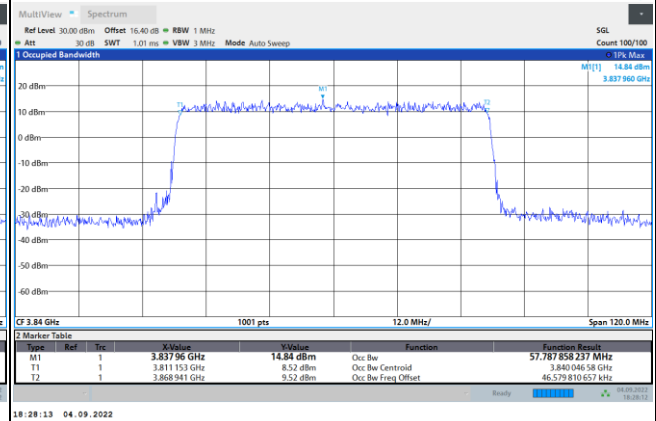


## FR1 n77 / 60MHz / CP OFDM / Middle Channel / Full RB

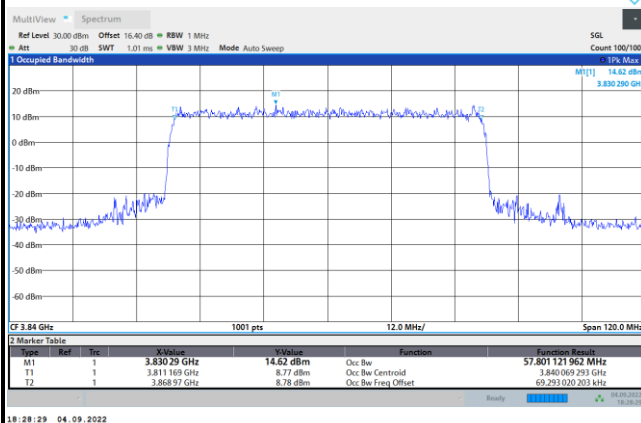
## QPSK



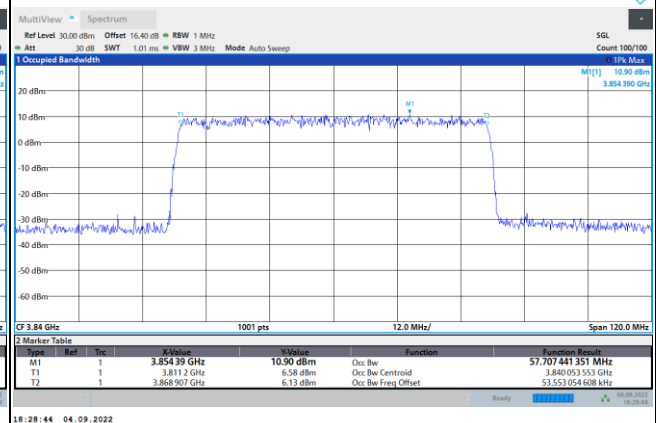
## 16QAM



## 64QAM



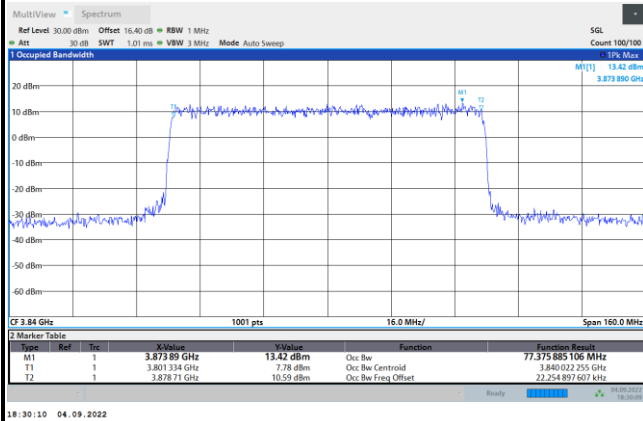
## 256QAM



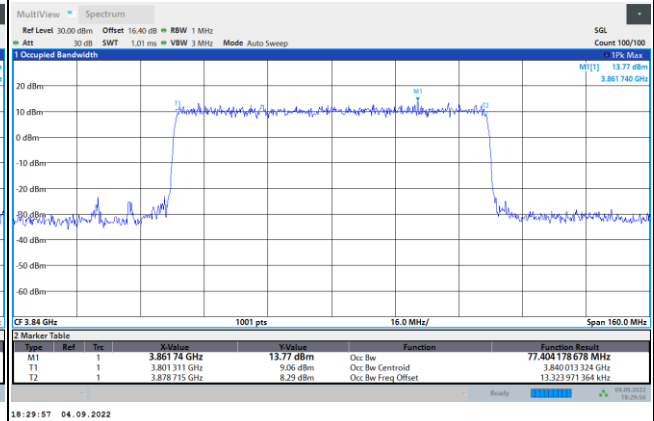


## FR1 n77 / 80MHz / CP OFDM / Middle Channel / Full RB

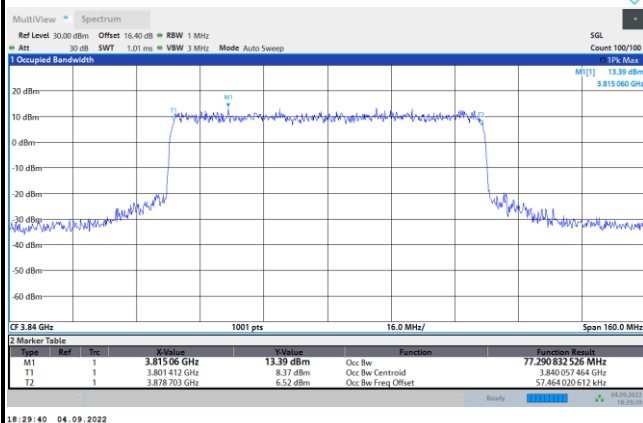
## QPSK



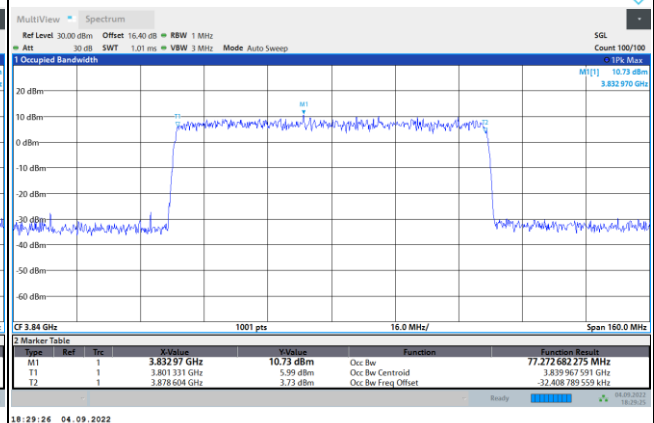
## 16QAM



## 64QAM



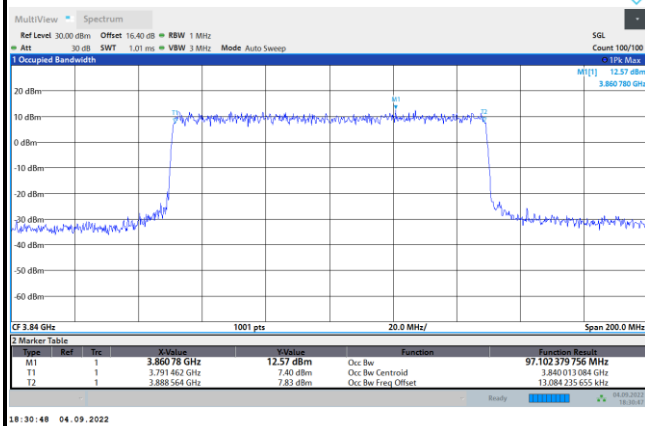
## 256QAM



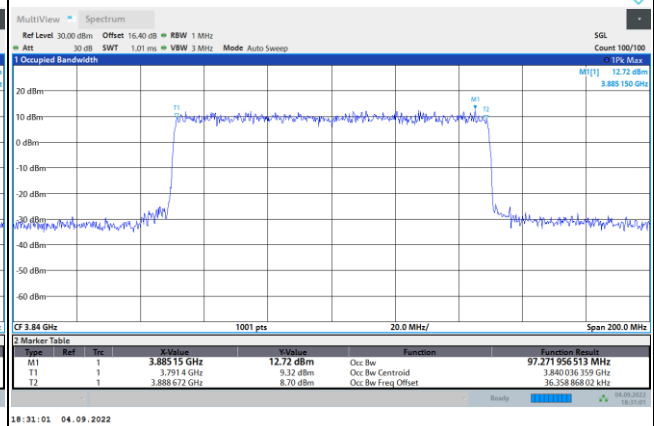


## FR1 n77 / 100MHz / CP OFDM / Middle Channel / Full RB

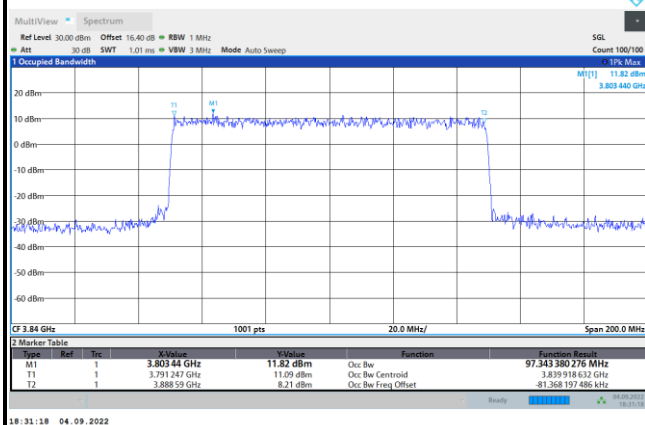
## QPSK



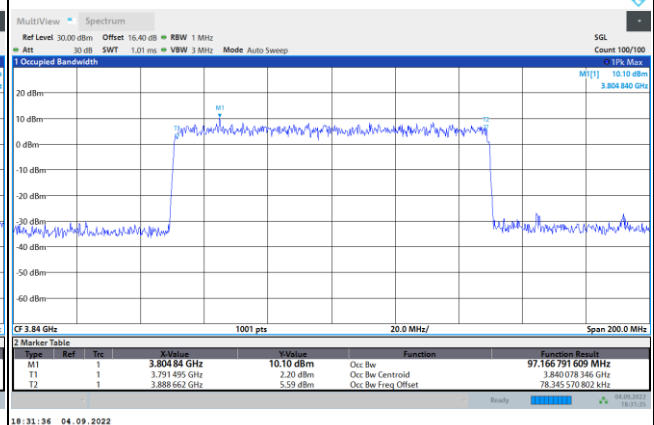
## 16QAM

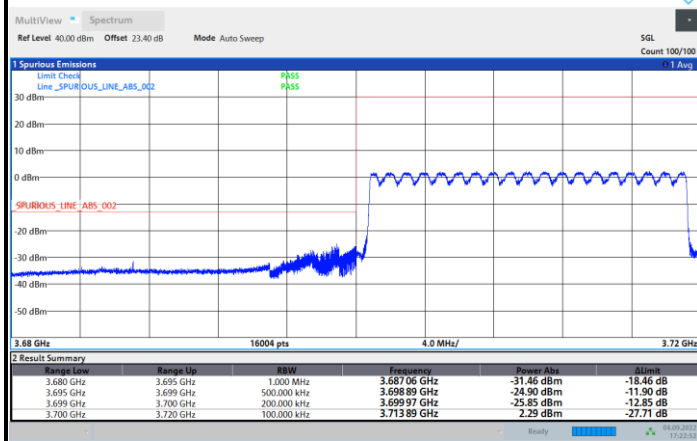
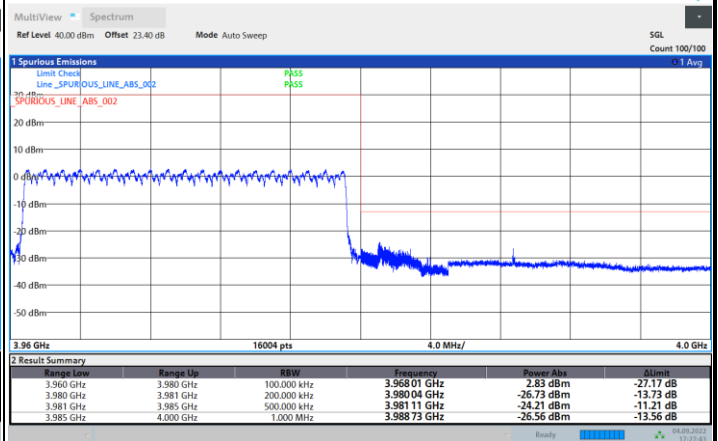
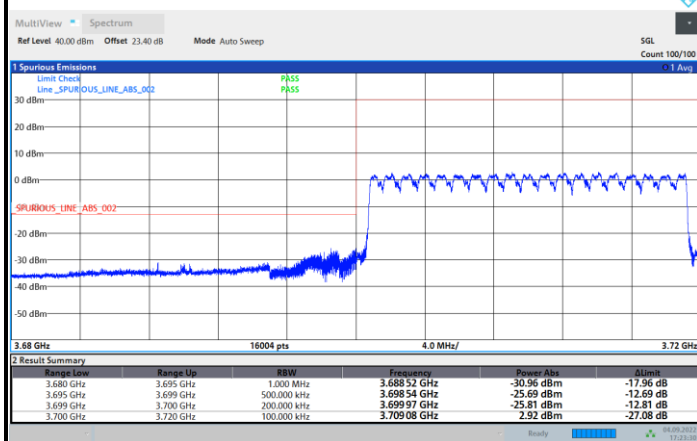
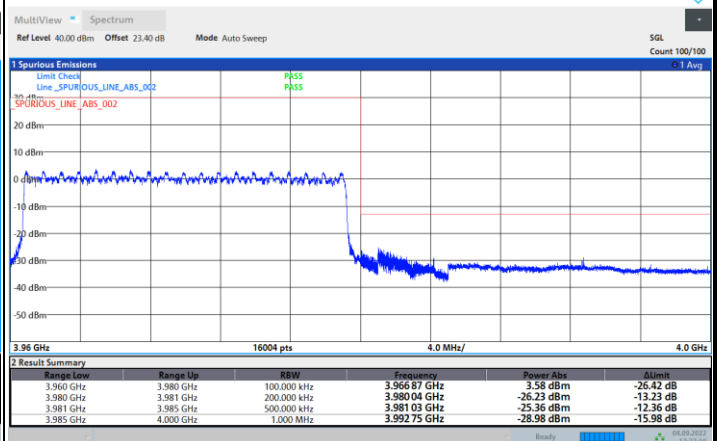


## 64QAM



## 256QAM

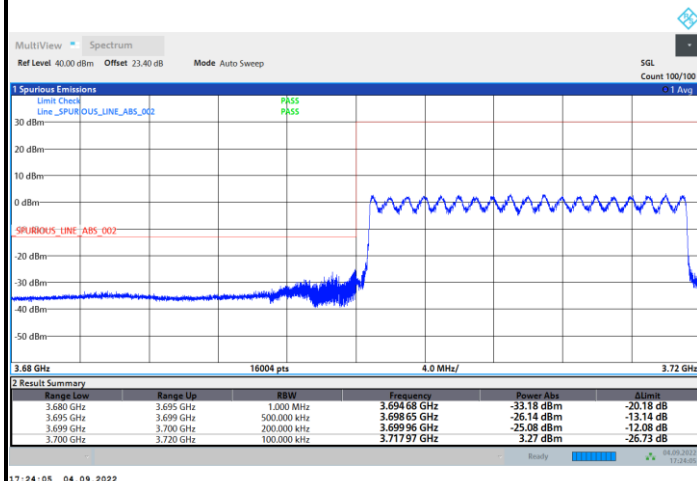


**Conducted Band Edge****FR1 n77 / 20MHz / CP OFDM / QPSK****Lowest Band Edge / Full RB****Highest Band Edge / Full RB****FR1 n77 / 20MHz / CP OFDM / 16QAM****Lowest Band Edge / Full RB****Highest Band Edge / Full RB**

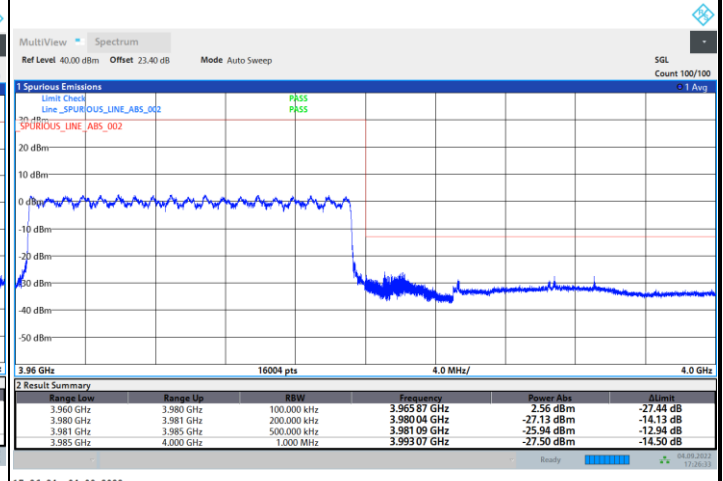


## FR1 n77 / 20MHz / CP OFDM / 64QAM

## Lowest Band Edge / Full RB

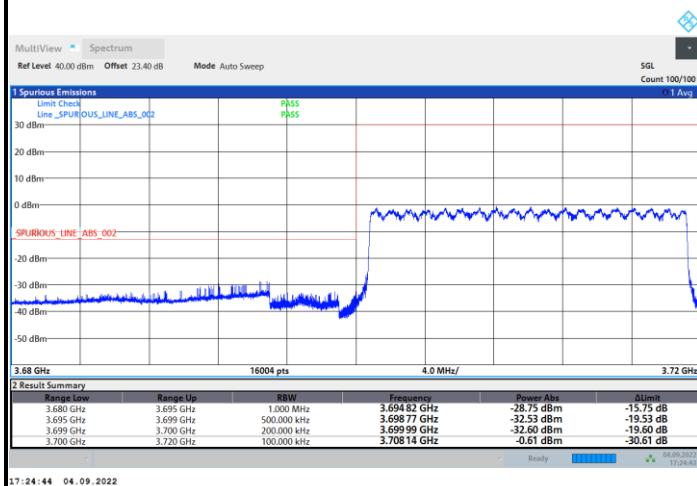


## Highest Band Edge / Full RB

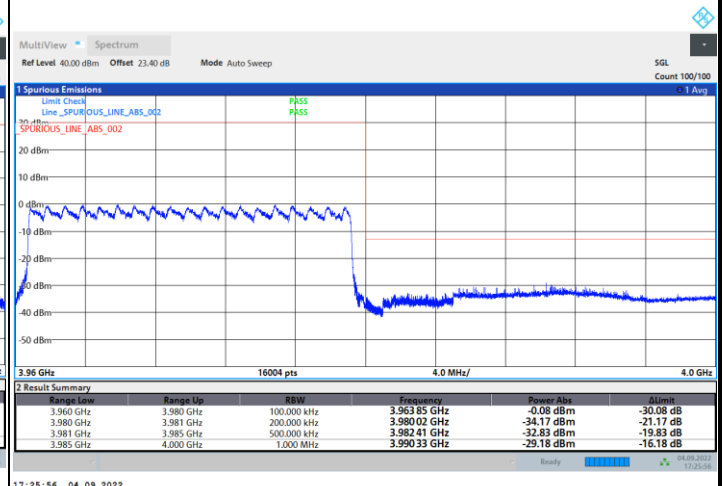


## FR1 n77 / 20MHz / CP OFDM / 256QAM

## Lowest Band Edge / Full RB



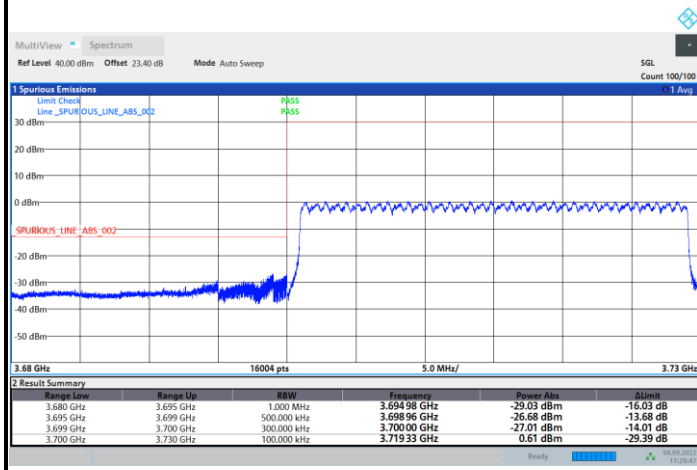
## Highest Band Edge / Full RB



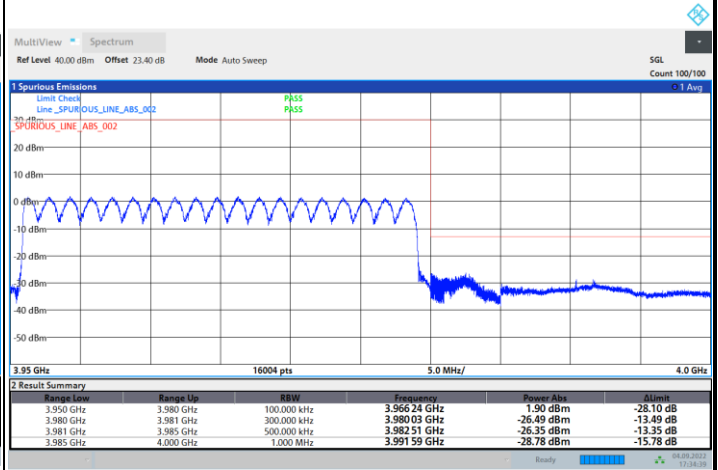


## FR1 n77 / 30MHz / CP OFDM / QPSK

## Lowest Band Edge / Full RB

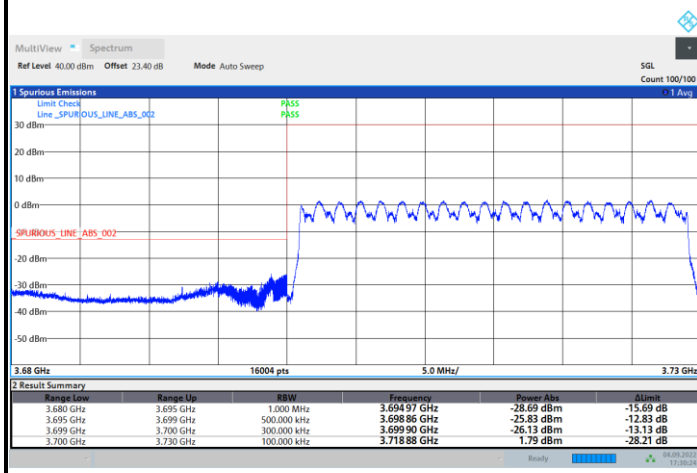


## Highest Band Edge / Full RB

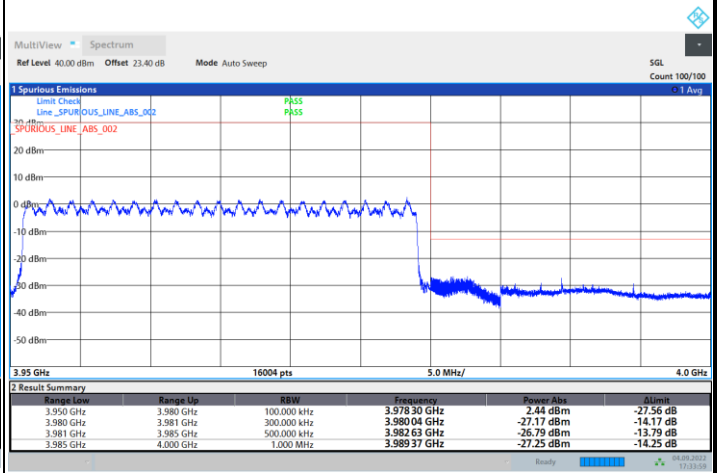


## FR1 n77 / 30MHz / CP OFDM / 16QAM

## Lowest Band Edge / Full RB



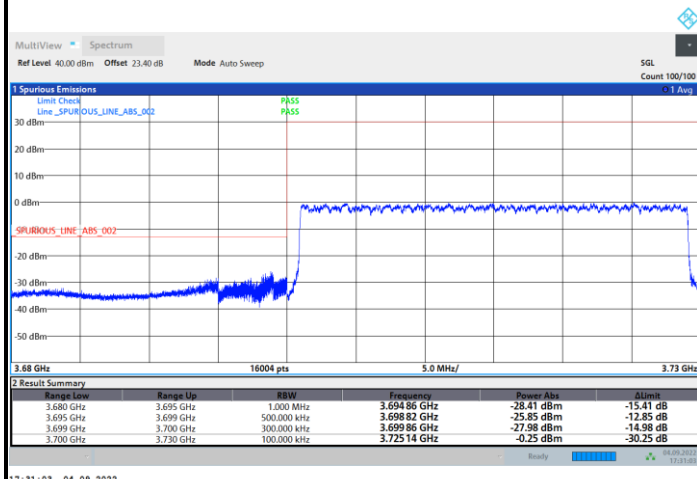
## Highest Band Edge / Full RB



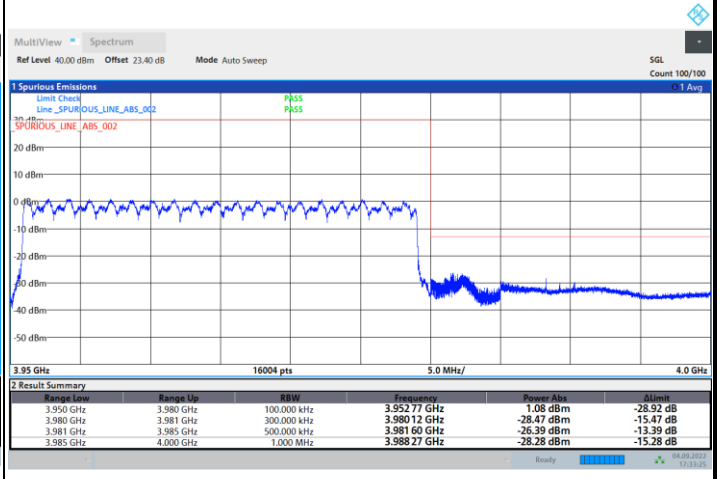


## FR1 n77 / 30MHz / CP OFDM / 64QAM

## Lowest Band Edge / Full RB

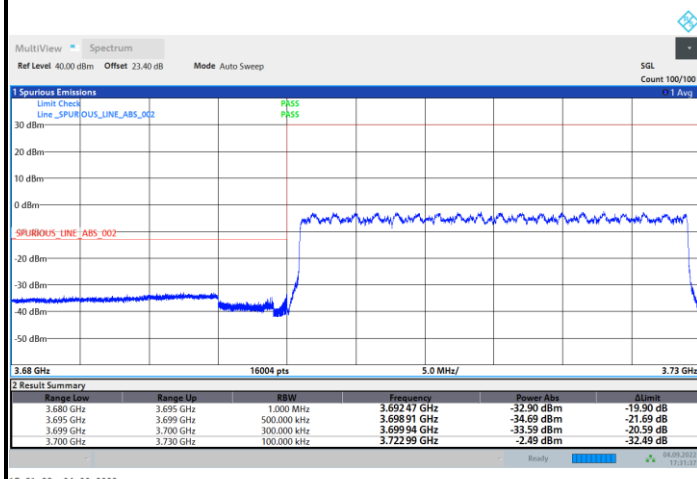


## Highest Band Edge / Full RB

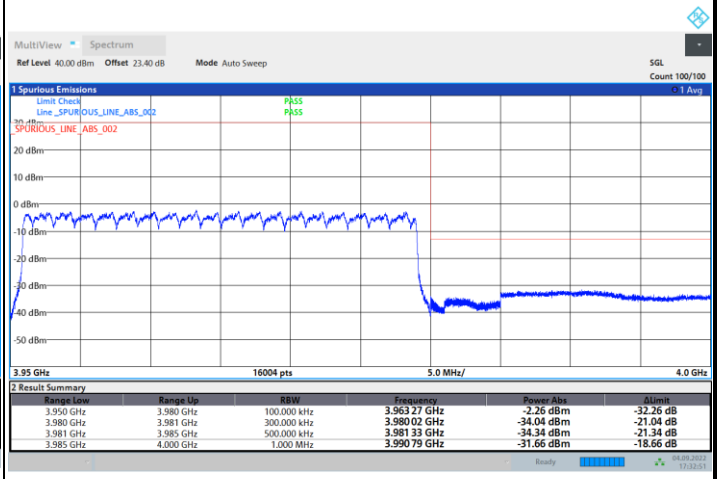


## FR1 n77 / 30MHz / CP OFDM / 256QAM

## Lowest Band Edge / Full RB



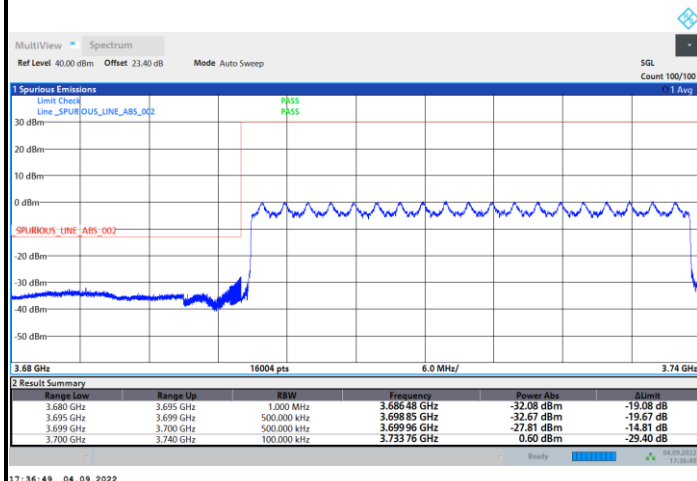
## Highest Band Edge / Full RB



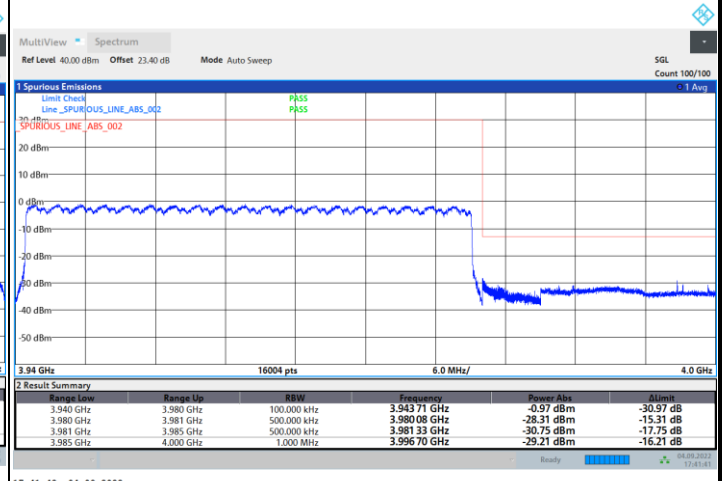


## FR1 n77 / 40MHz / CP OFDM / QPSK

## Lowest Band Edge / Full RB

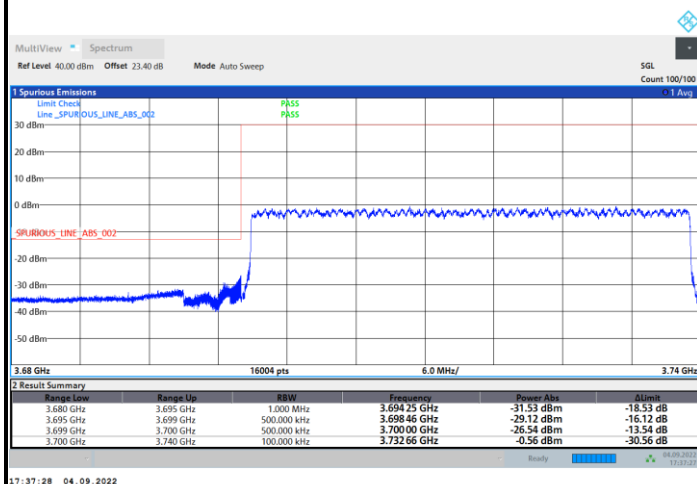


## Highest Band Edge / Full RB

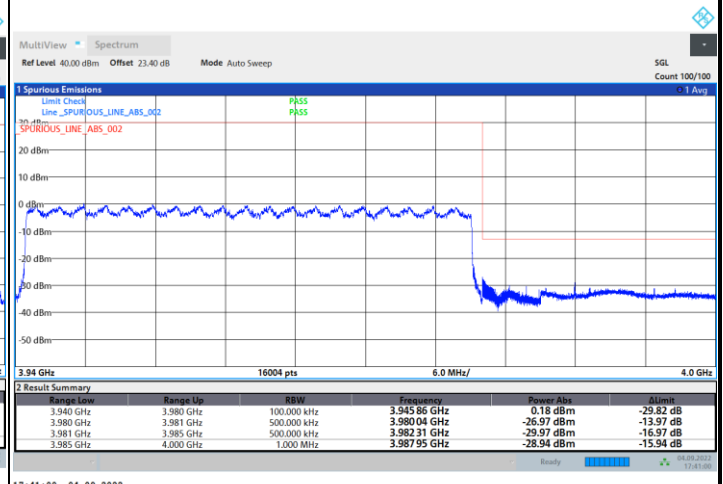


## FR1 n77 / 40MHz / CP OFDM / 16QAM

## Lowest Band Edge / Full RB



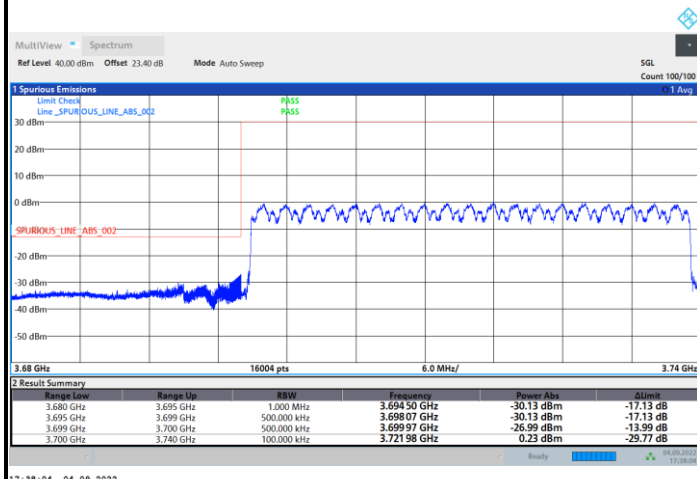
## Highest Band Edge / Full RB



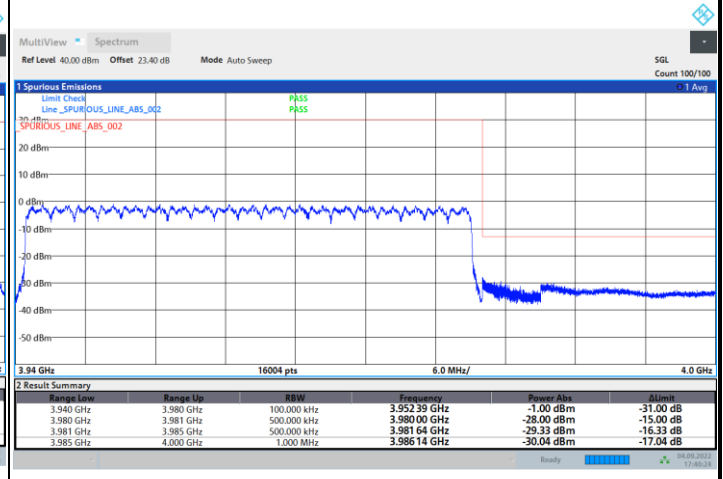


## FR1 n77 / 40MHz / CP OFDM / 64QAM

## Lowest Band Edge / Full RB

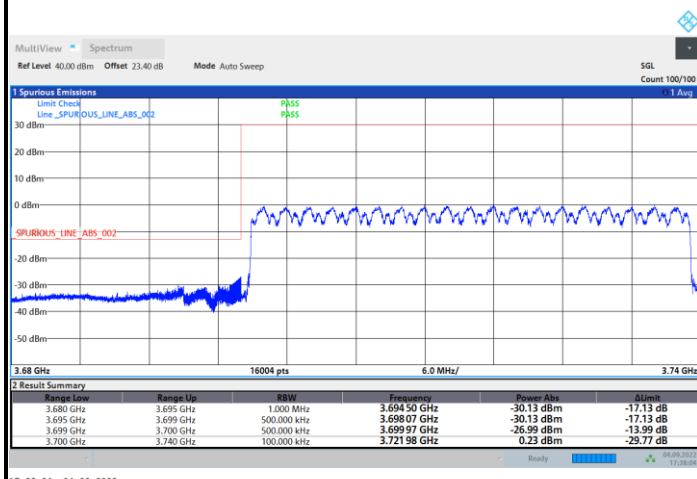


## Highest Band Edge / Full RB

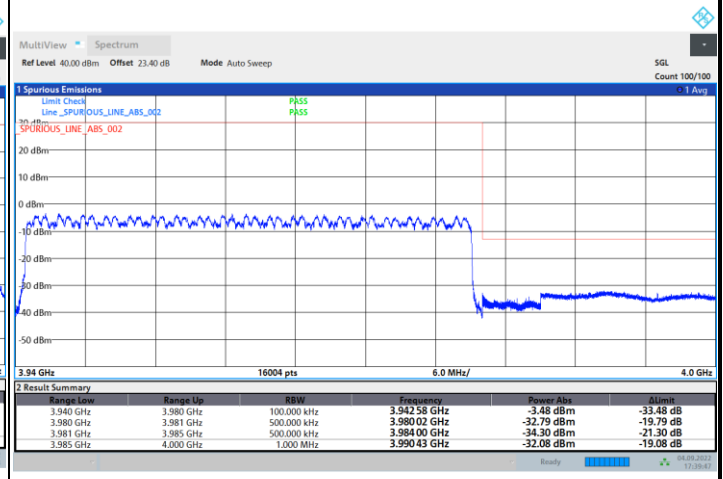


## FR1 n77 / 40MHz / CP OFDM / 256QAM

## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

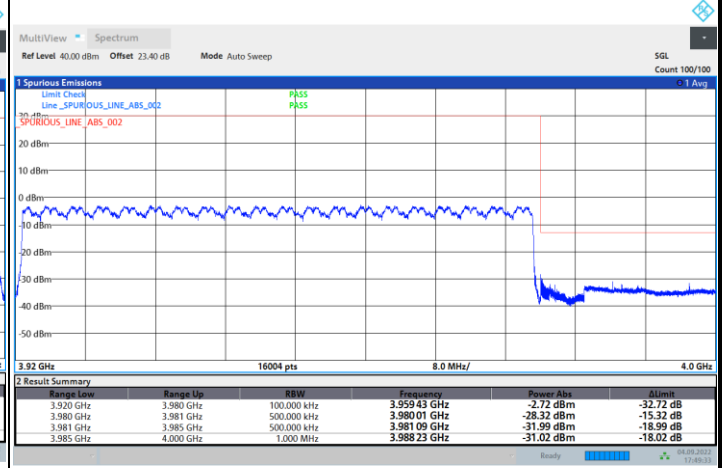
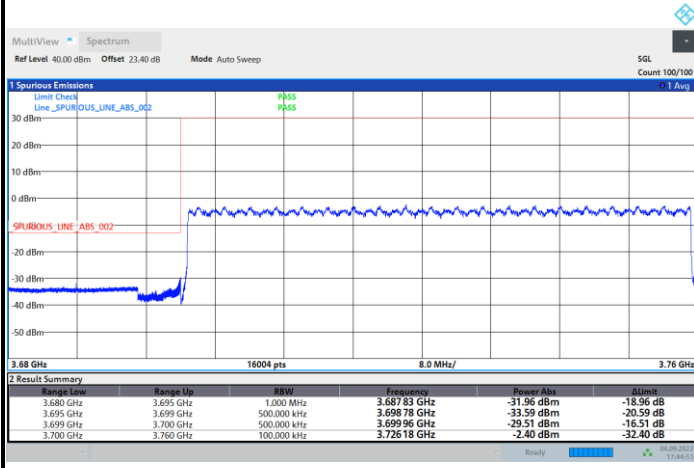




## FR1 n77 / 60MHz / CP OFDM / QPSK

## Lowest Band Edge / Full RB

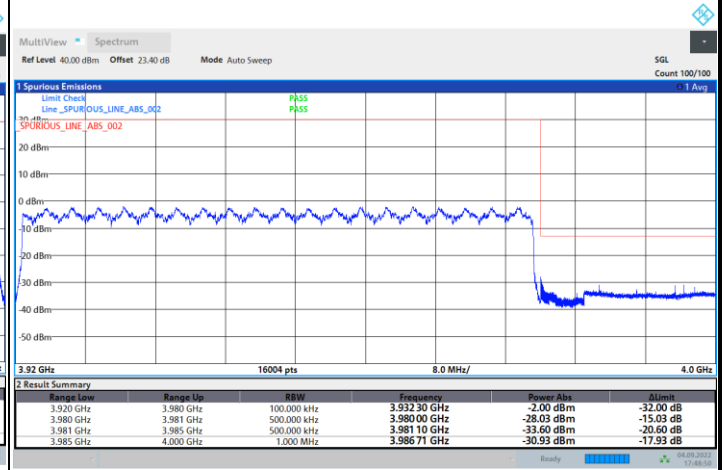
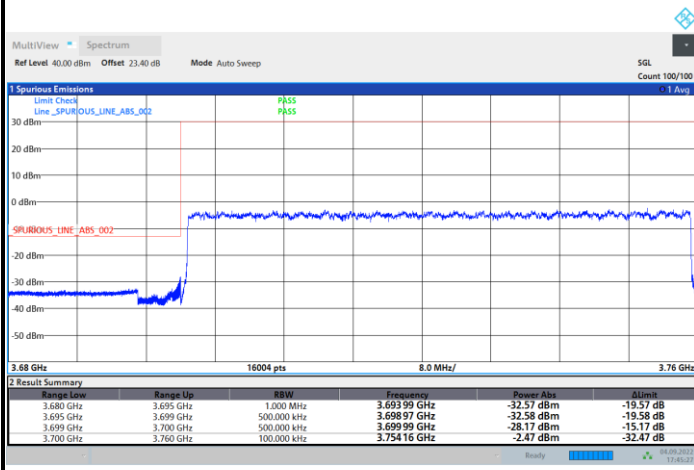
## Highest Band Edge / Full RB



## FR1 n77 / 60MHz / CP OFDM / 16QAM

## Lowest Band Edge / Full RB

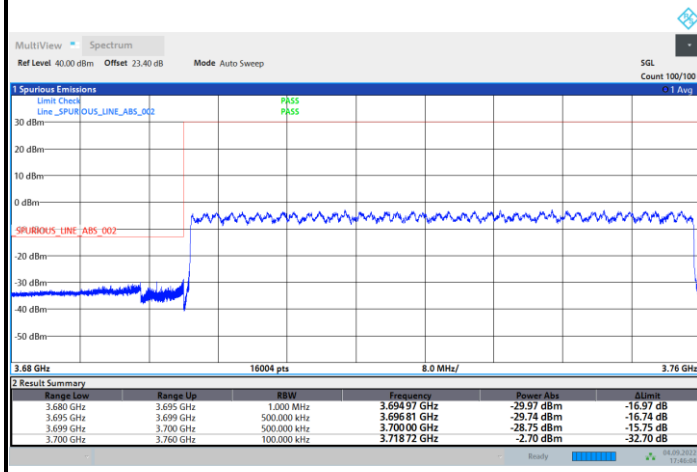
## Highest Band Edge / Full RB





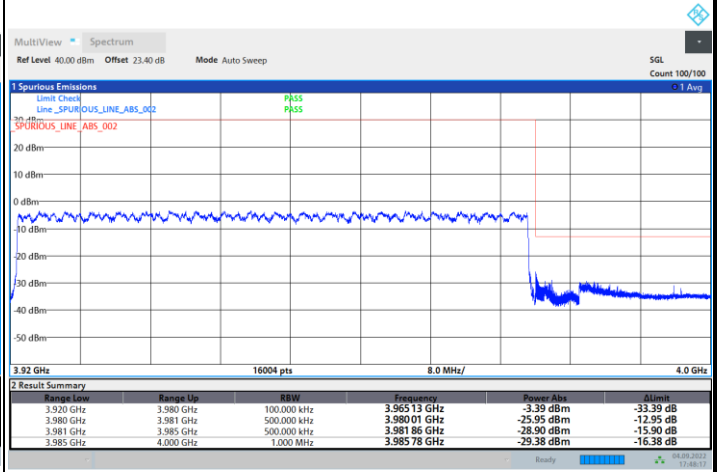
## FR1 n77 / 60MHz / CP OFDM / 64QAM

## Lowest Band Edge / Full RB



17:46:04 04.09.2022

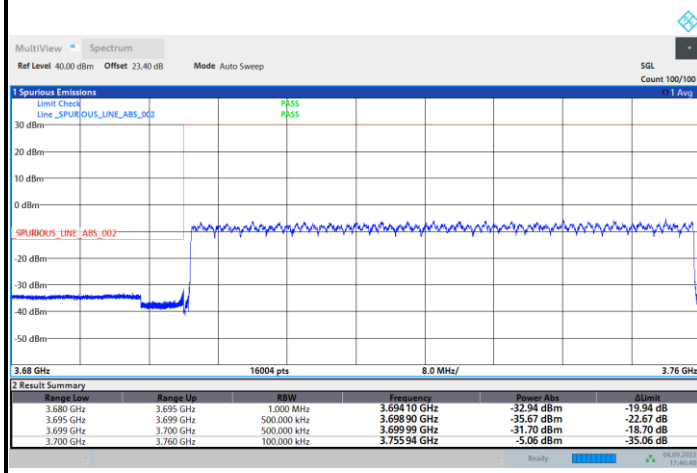
## Highest Band Edge / Full RB



17:48:17 04.09.2022

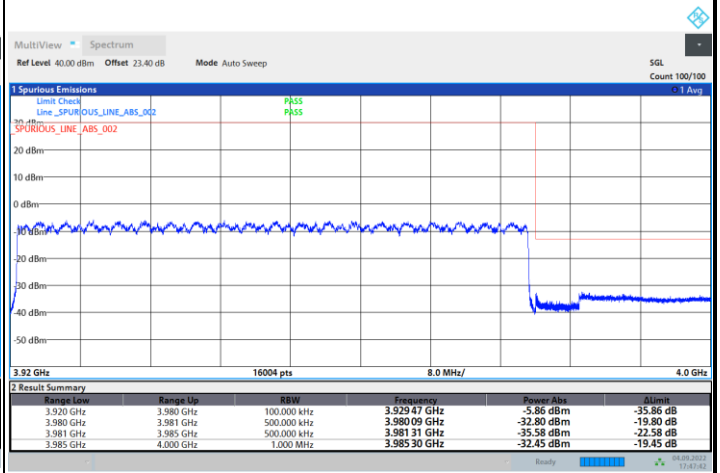
## FR1 n77 / 60MHz / CP OFDM / 256QAM

## Lowest Band Edge / Full RB



17:46:41 04.09.2022

## Highest Band Edge / Full RB

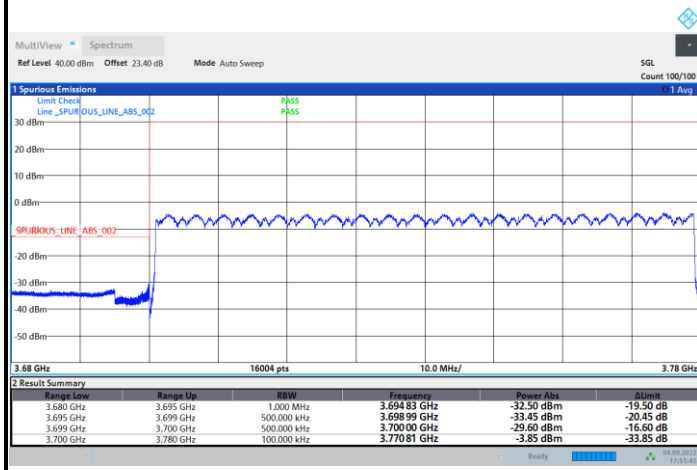


17:47:42 04.09.2022

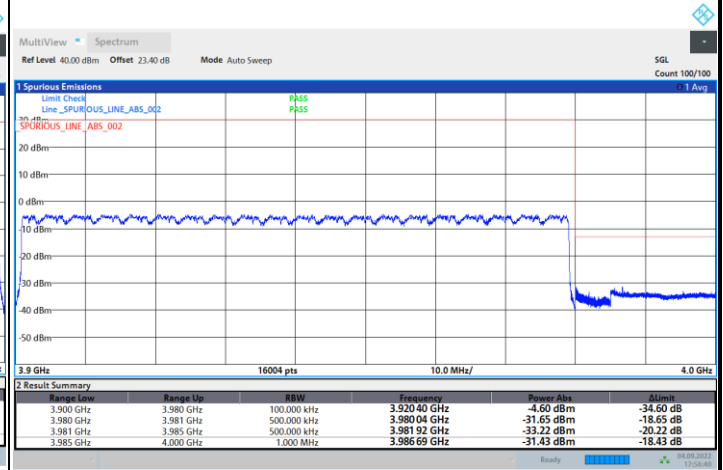


## FR1 n77 / 80MHz / CP OFDM / QPSK

## Lowest Band Edge / Full RB

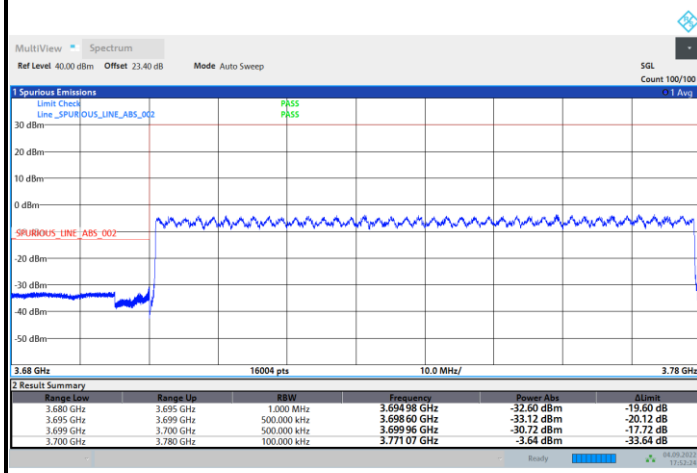


## Highest Band Edge / Full RB

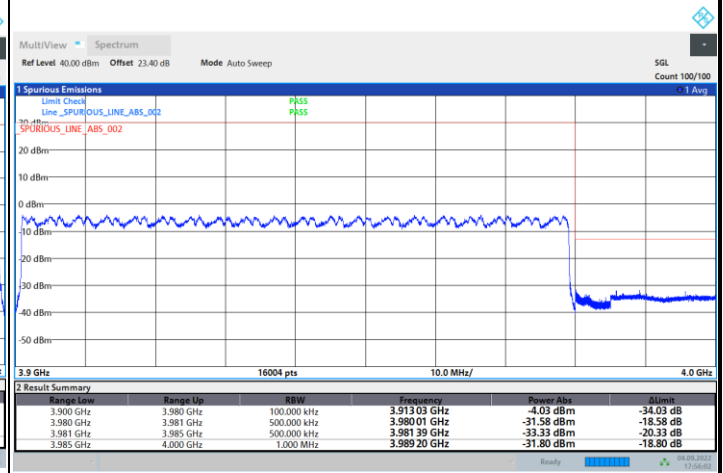


## FR1 n77 / 80MHz / CP OFDM / 16QAM

## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

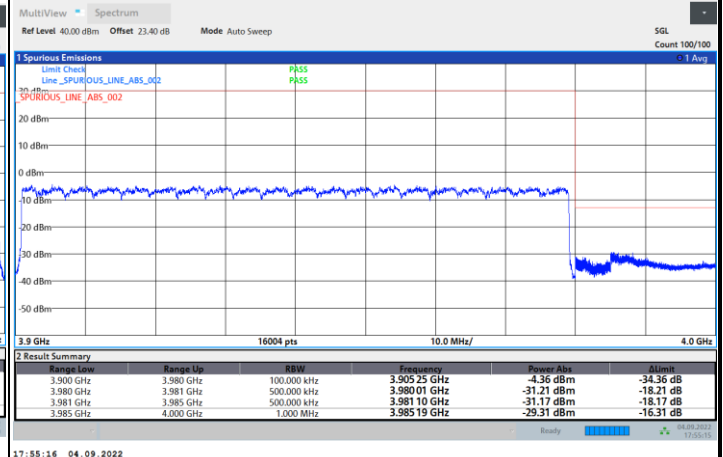
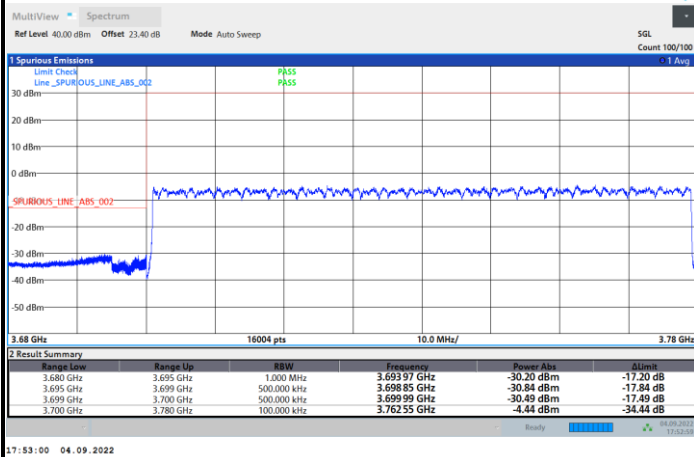




## FR1 n77 / 80MHz / CP OFDM / 64QAM

## Lowest Band Edge / Full RB

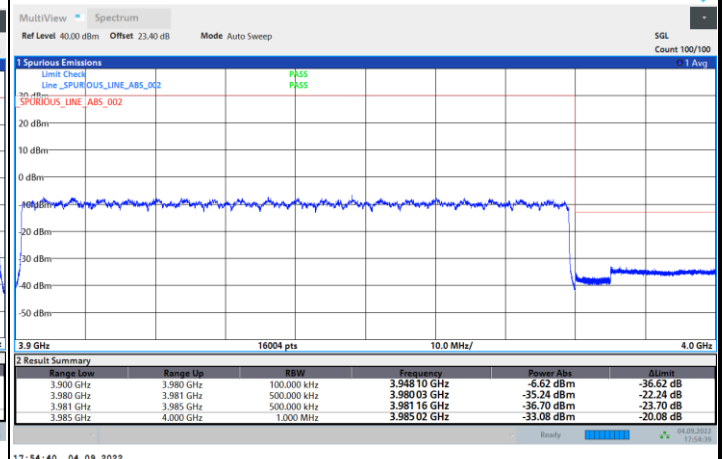
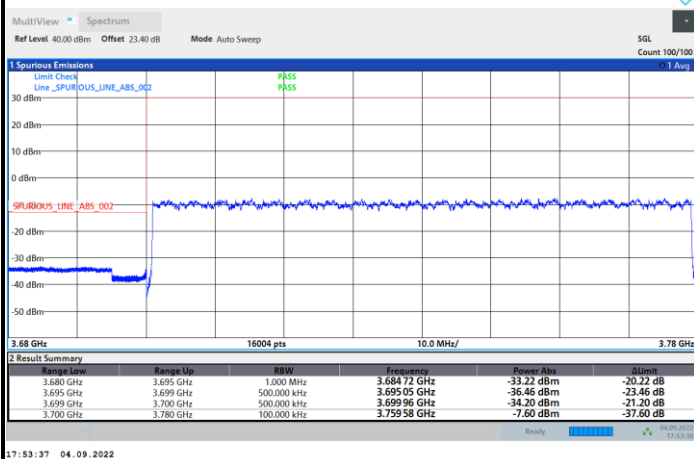
## Highest Band Edge / Full RB



## FR1 n77 / 80MHz / CP OFDM / 256QAM

## Lowest Band Edge / Full RB

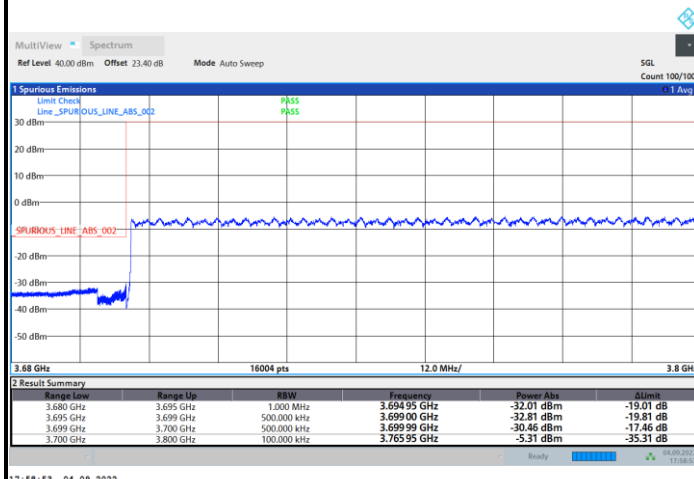
## Highest Band Edge / Full RB



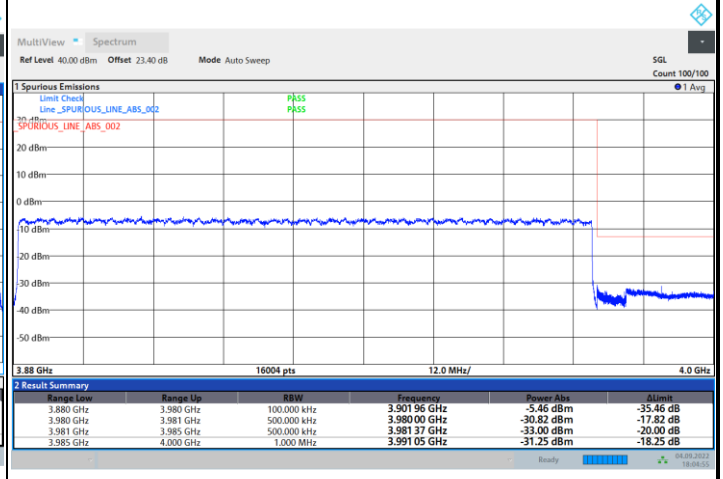


## FR1 n77 / 100MHz / CP OFDM / QPSK

## Lowest Band Edge / Full RB

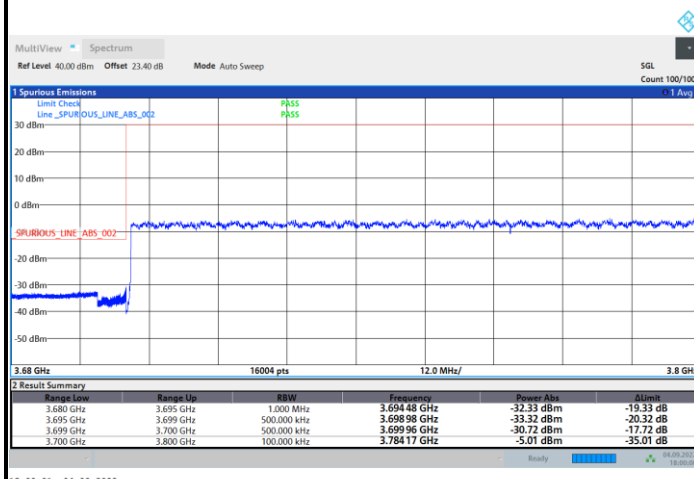


## Highest Band Edge / Full RB

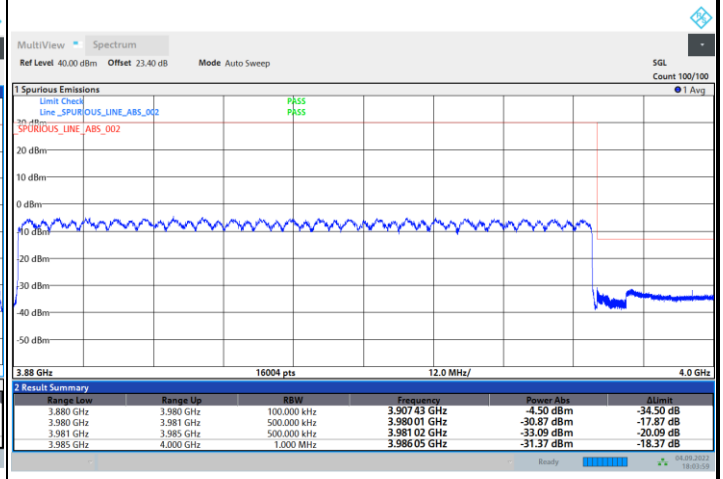


## FR1 n77 / 100MHz / CP OFDM / 16QAM

## Lowest Band Edge / Full RB



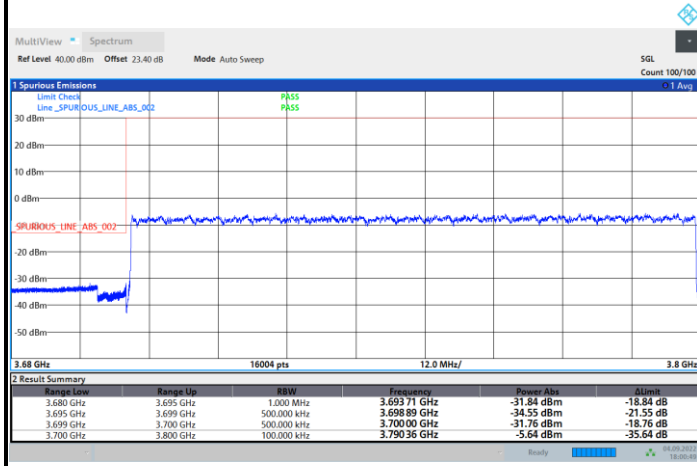
## Highest Band Edge / Full RB



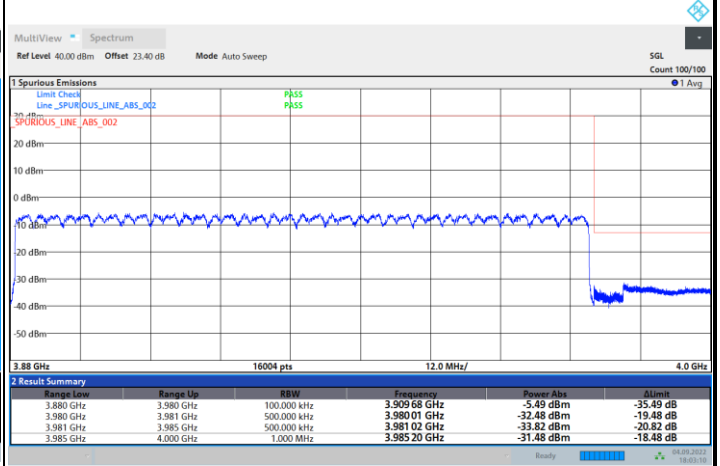


## FR1 n77 / 100MHz / CP OFDM / 64QAM

## Lowest Band Edge / Full RB

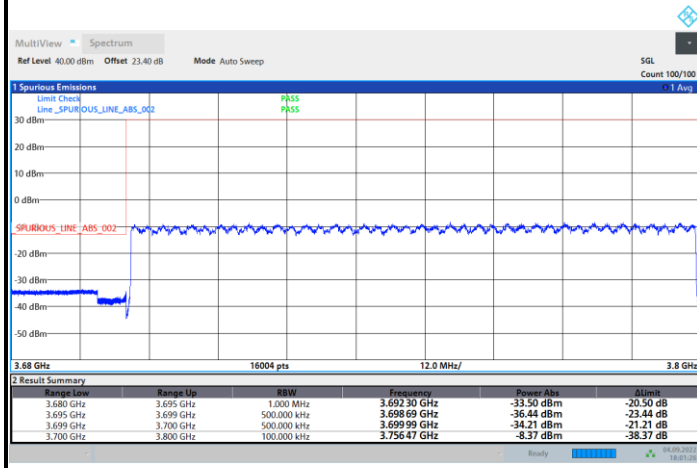


## Highest Band Edge / Full RB

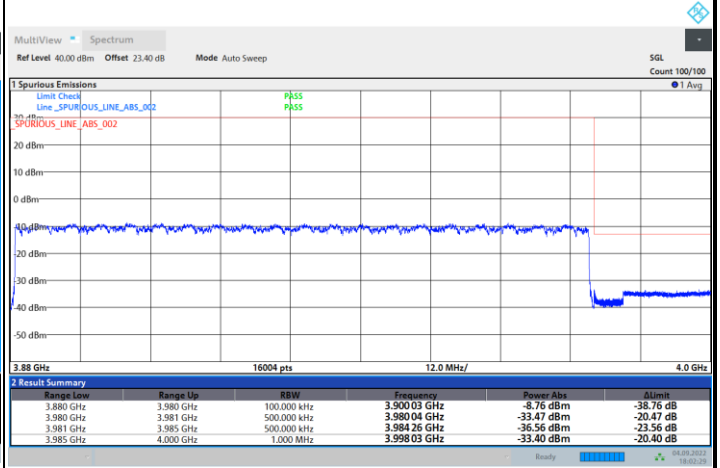


## FR1 n77 / 100MHz / CP OFDM / 256QAM

## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

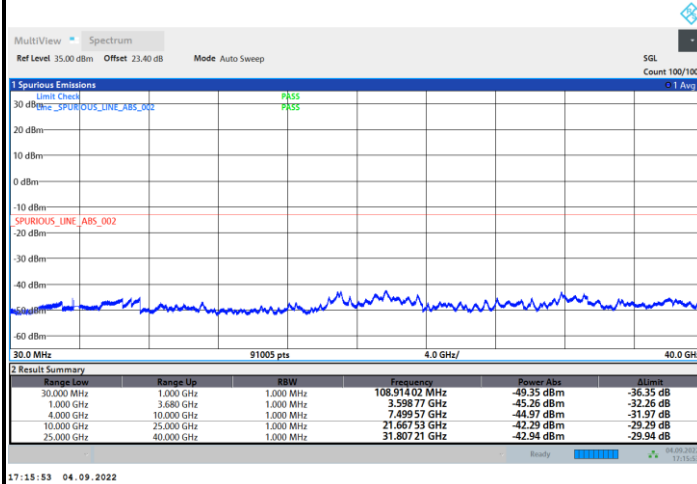




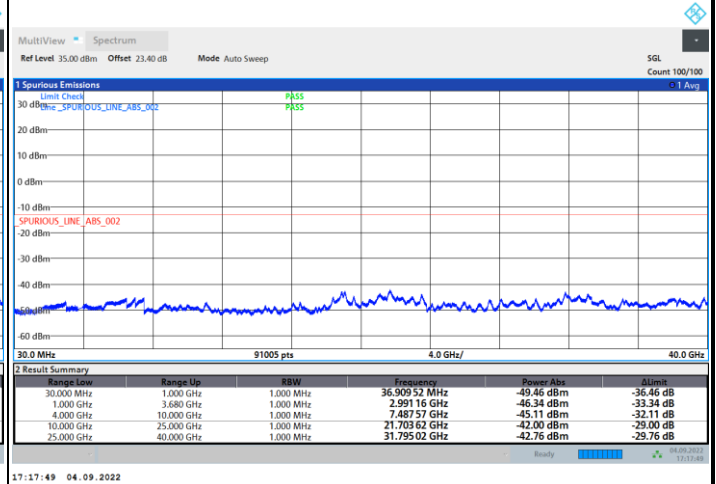
# Conducted Spurious Emission

FR1 n77 / 20MHz / CP OFDM / QPSK / 1RB1

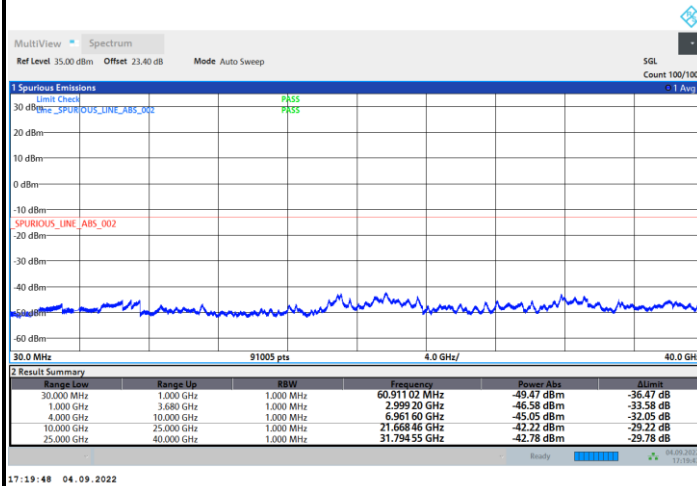
## Lowest Channel



## Middle Channel



## Highest Channel



## Frequency Stability

| Test Conditions     |                   | FR1 n77 (QPSK) / Middle Channel | Limit   |
|---------------------|-------------------|---------------------------------|---------|
| Temperature<br>(°C) | Voltage<br>(Volt) | BW 20MHz                        | Note 2. |
|                     |                   | Deviation (ppm)                 | Result  |
| 50                  | Normal Voltage    | 0.0004                          | PASS    |
| 40                  | Normal Voltage    | 0.0043                          |         |
| 30                  | Normal Voltage    | 0.0040                          |         |
| 20(Ref.)            | Normal Voltage    | 0.0000                          |         |
| 10                  | Normal Voltage    | 0.0021                          |         |
| 0                   | Normal Voltage    | 0.0057                          |         |
| -10                 | Normal Voltage    | 0.0010                          |         |
| -20                 | Normal Voltage    | 0.0002                          |         |
| -30                 | Normal Voltage    | 0.0004                          |         |
| 20                  | Maximum Voltage   | 0.0034                          |         |
| 20                  | Normal Voltage    | 0.0000                          |         |
| 20                  | Battery End Point | 0.0052                          |         |

**Note:**

1. Normal Voltage = 3.3 V. ; Battery End Point (BEP) = 3.135 V. ; Maximum Voltage = 4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



## FR1 n78 (HPUE)

&lt;SISO Mode&gt;

**26dB Bandwidth**

| Mode      | FR1 n78 (HPUE) : 26dB BW(MHz) / DFT-S OFDM |           |           |           |           |           |           |           |
|-----------|--------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| BW        | 20MHz                                      | 25MHz     | 30MHz     | 40MHz     | 50MHz     | 60MHz     | 70MHz     | 80MHz     |
| Mod.      | PI/2 BPSK                                  | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK |
| Middle CH | -                                          | -         | -         | -         | 48.15     | -         | 67.13     | -         |
| BW        | 90MHz                                      | 100MHz    |           |           |           |           |           |           |
| Mod.      | PI/2 BPSK                                  | PI/2 BPSK |           |           |           |           |           |           |
| Middle CH | 89.73                                      | -         |           |           |           |           |           |           |

| Mode      | FR1 n78 (HPUE) : 26dB BW(MHz) / CP OFDM |        |        |        |       |        |       |        |
|-----------|-----------------------------------------|--------|--------|--------|-------|--------|-------|--------|
| BW        | 20MHz                                   |        | 25MHz  |        | 30MHz |        | 40MHz |        |
| Mod.      | QPSK                                    | 16QAM  | QPSK   | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  |
| Middle CH | -                                       | -      | -      | -      | -     | -      | -     | -      |
| Mod.      | 64QAM                                   | 256QAM | 64QAM  | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM |
| Middle CH | -                                       | -      | -      | -      | -     | -      | -     | -      |
| BW        | 50MHz                                   |        | 60MHz  |        | 70MHz |        | 80MHz |        |
| Mod.      | QPSK                                    | 16QAM  | QPSK   | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  |
| Middle CH | 50.15                                   | 50.25  | -      | -      | 70.35 | 70.63  | -     | -      |
| Mod.      | 64QAM                                   | 256QAM | 64QAM  | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM |
| Middle CH | 50.15                                   | 50.05  | -      | -      | 70.21 | 70.35  | -     | -      |
| BW        | 90MHz                                   |        | 100MHz |        |       |        |       |        |
| Mod.      | QPSK                                    | 16QAM  | QPSK   | 16QAM  |       |        |       |        |
| Middle CH | 90.63                                   | 90.63  | -      | -      |       |        |       |        |
| Mod.      | 64QAM                                   | 256QAM | 64QAM  | 256QAM |       |        |       |        |
| Middle CH | 90.63                                   | 90.63  | -      | -      |       |        |       |        |