

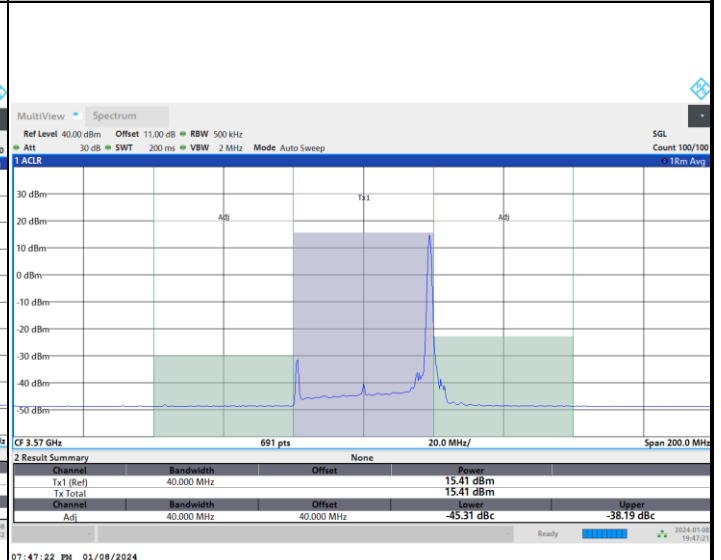
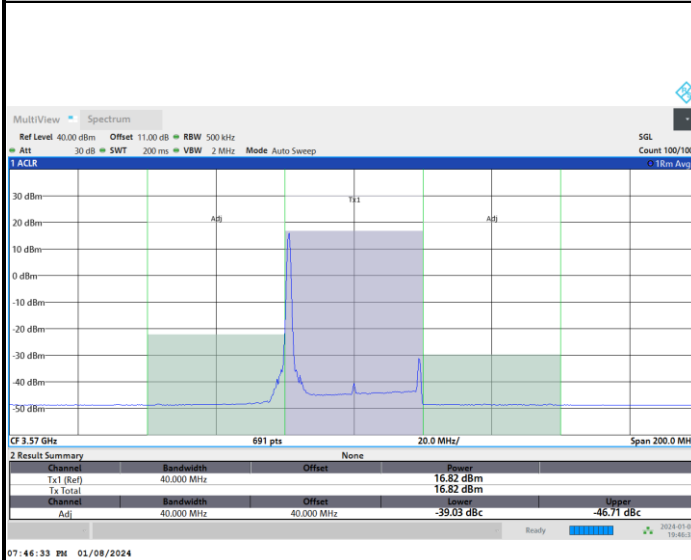


FR1 n48 / 40MHz / DFT-S OFDM / 256QAM

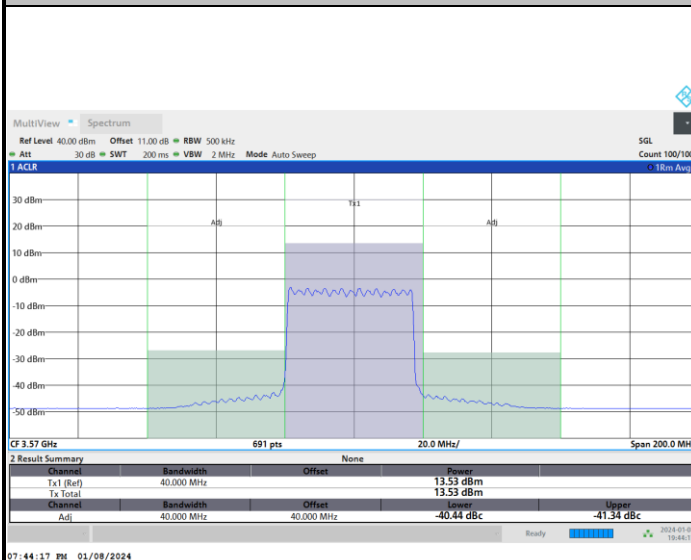
Lowest Channel

1RB0

1RBmax



Full RB



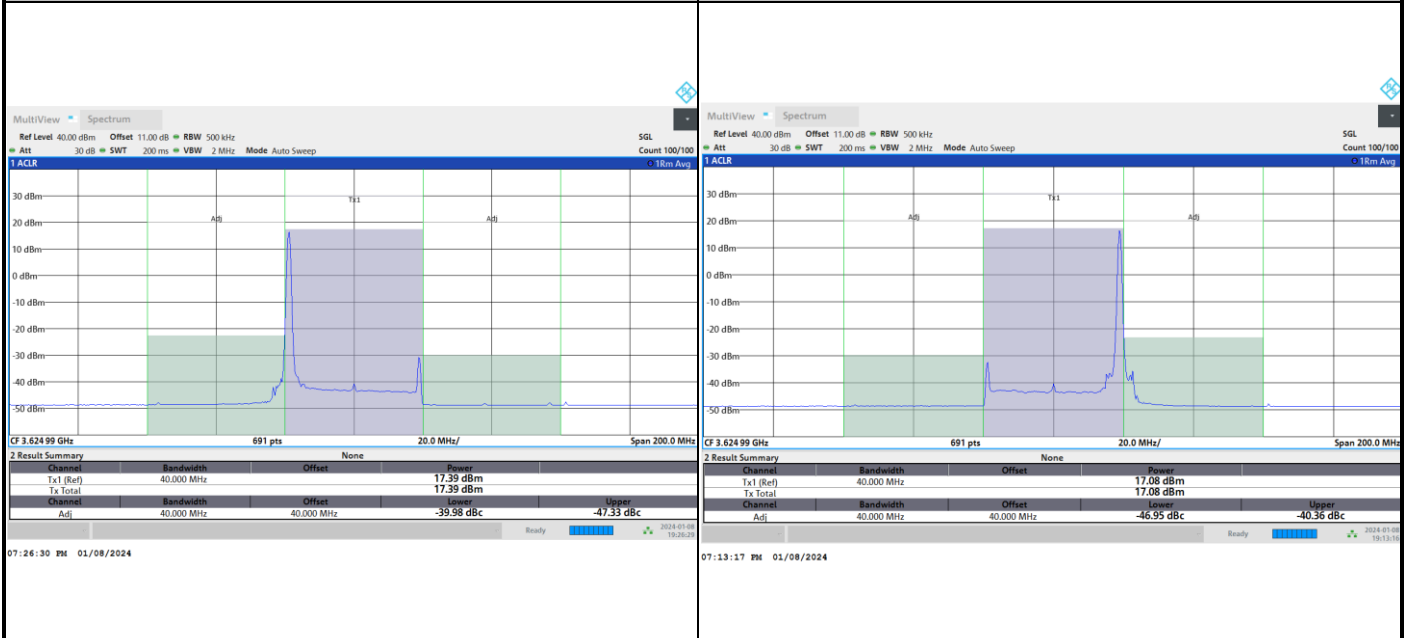


FR1 n48 / 40MHz / DFT-S OFDM / 256QAM

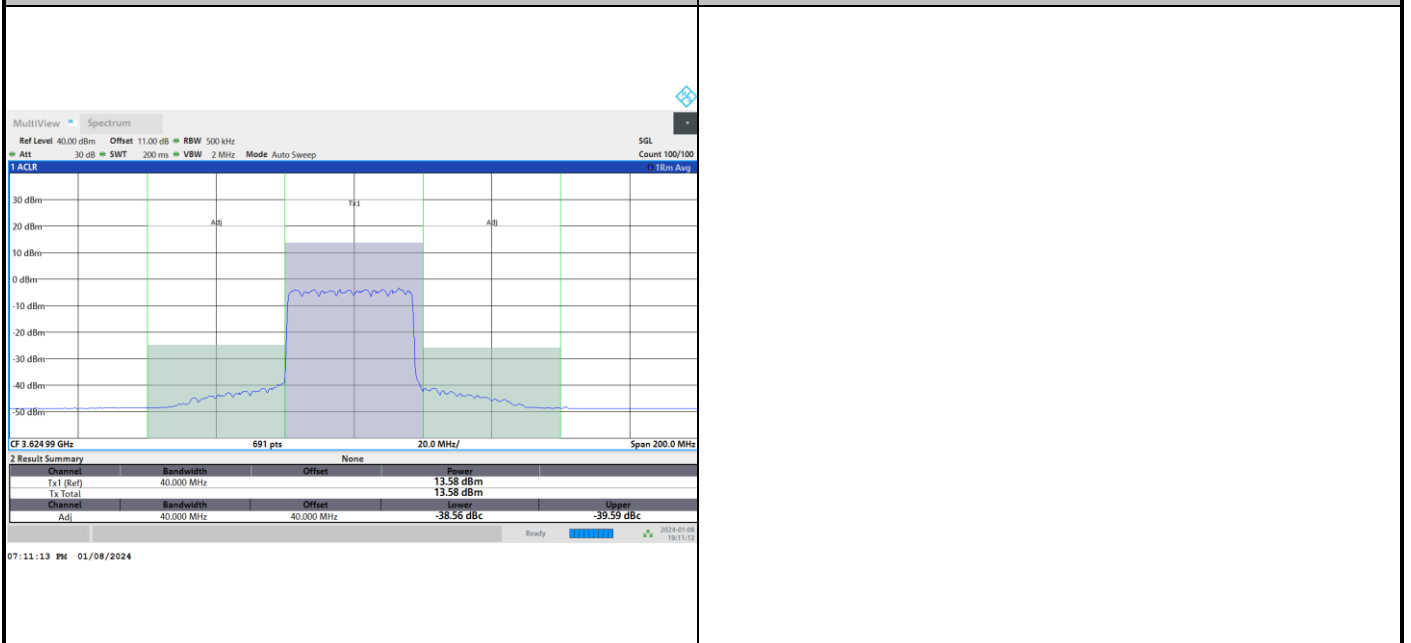
Middle Channel

1RB0

1RBmax



Full RB



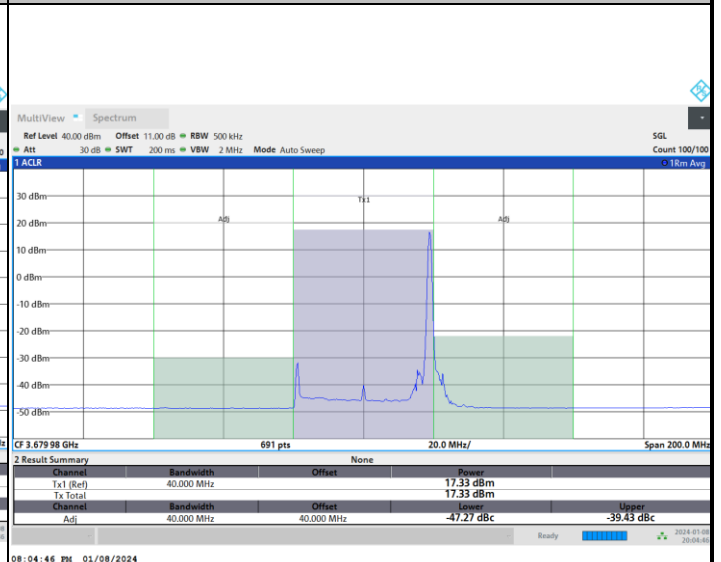
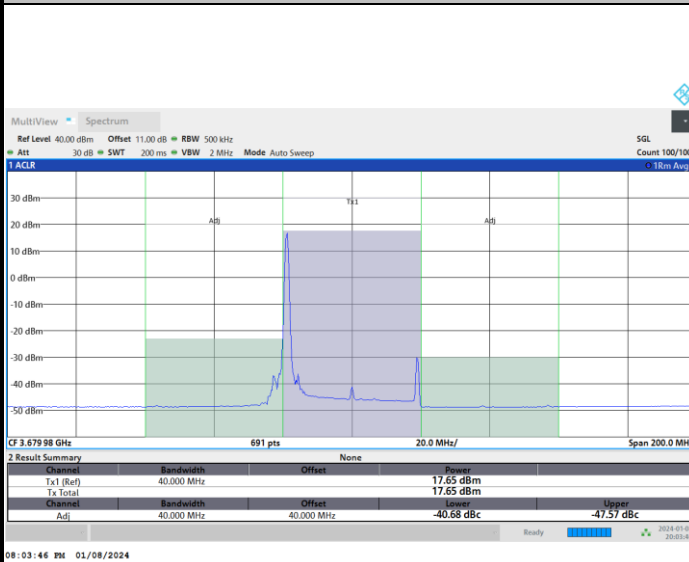


FR1 n48 / 40MHz / DFT-S OFDM / 256QAM

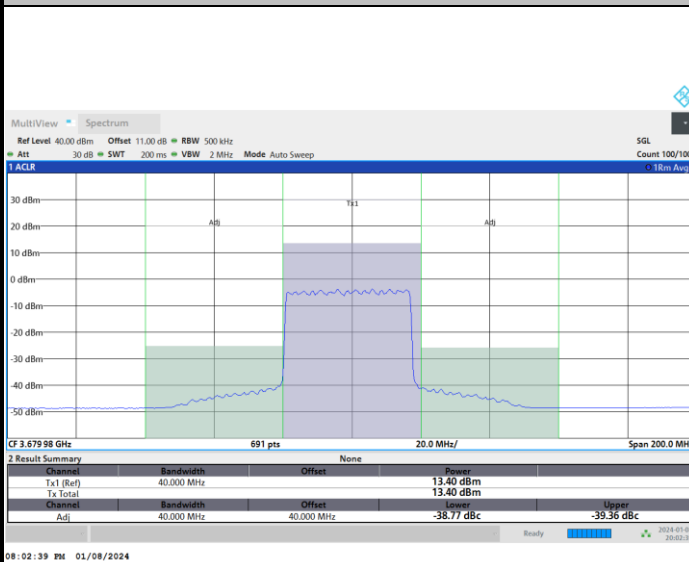
Highest Channel

1RB0

1RBmax



Full RB

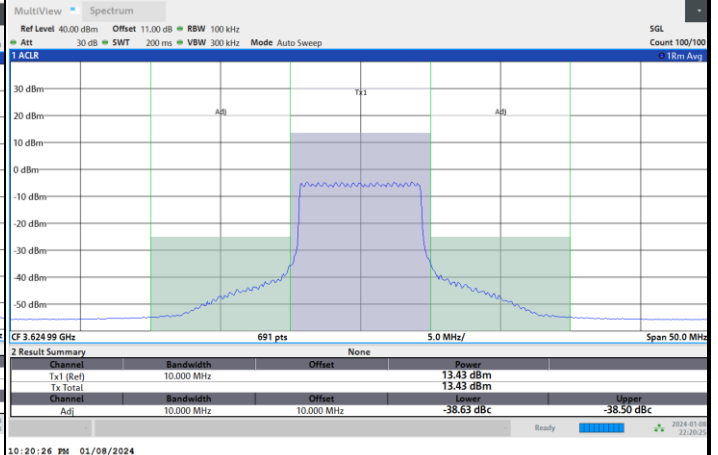
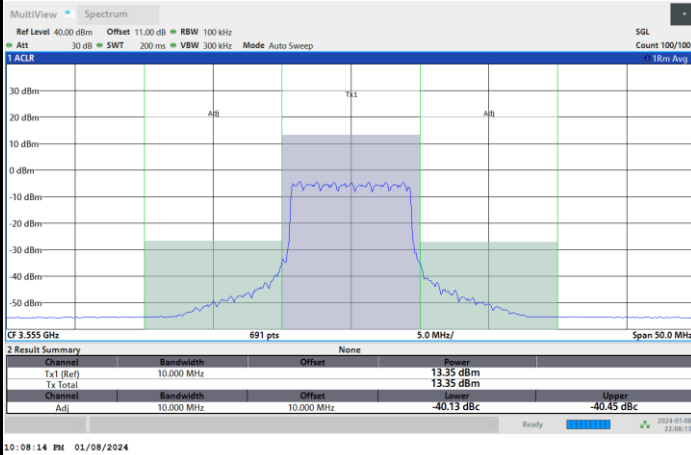




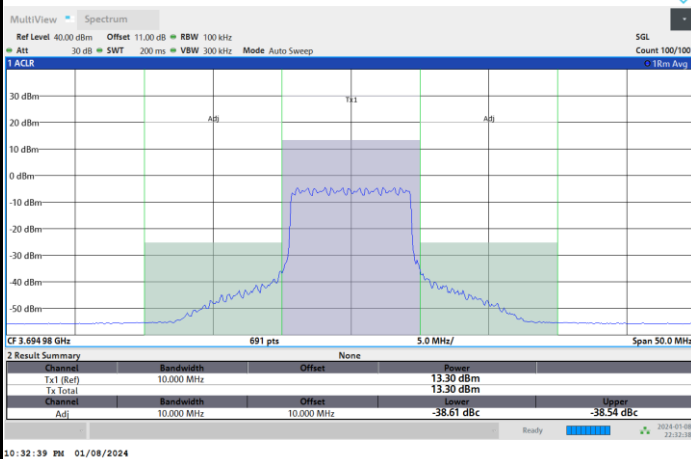
FR1 n48 / 10MHz / CP OFDM / QPSK / Full RB

Lowest Channel

Middle Channel



Highest Channel

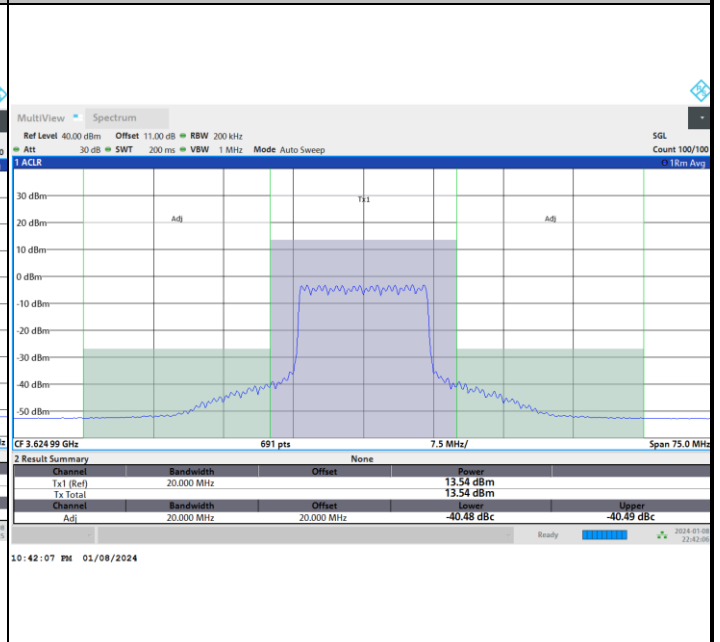
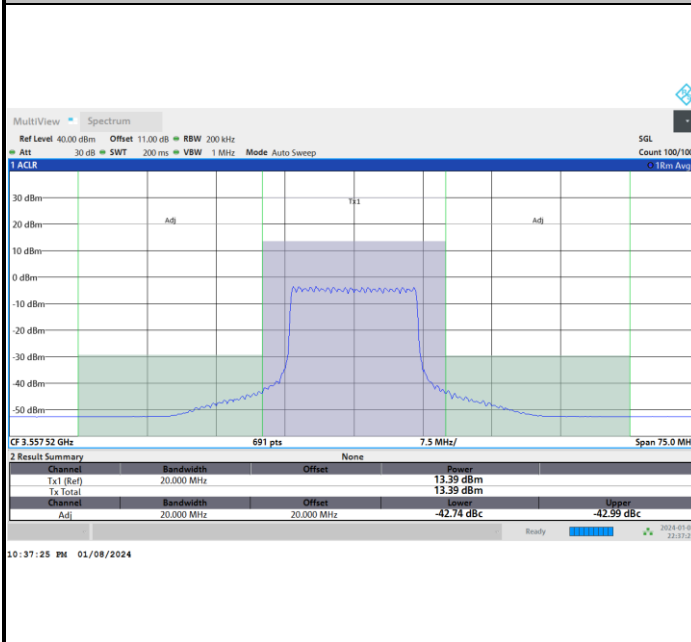




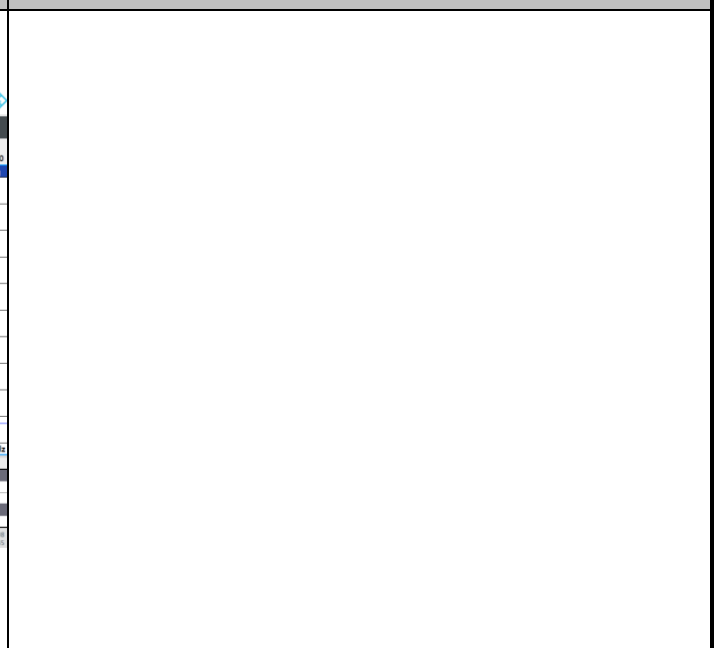
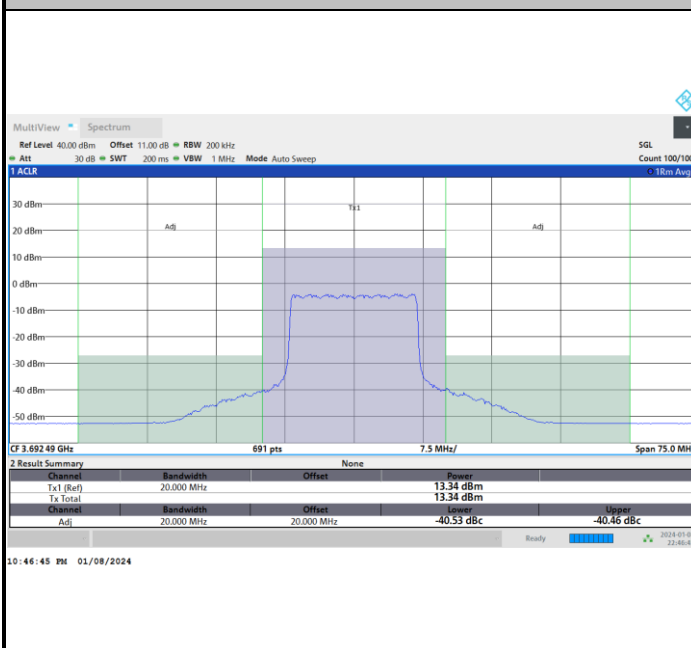
FR1 n48 / 15MHz / CP OFDM / QPSK / Full RB

Lowest Channel

Middle Channel



Highest Channel

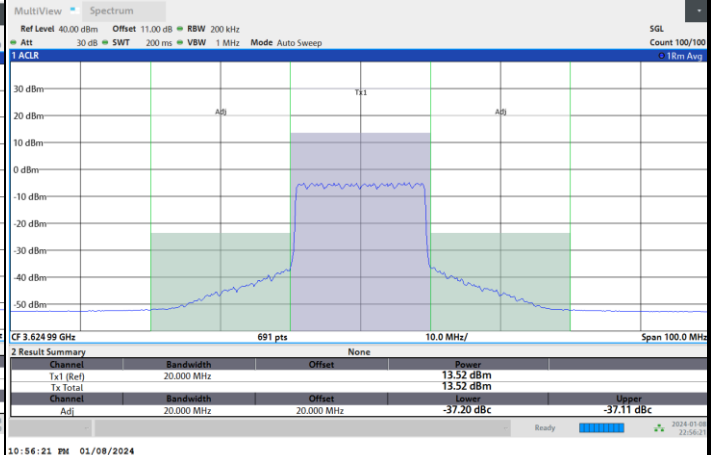
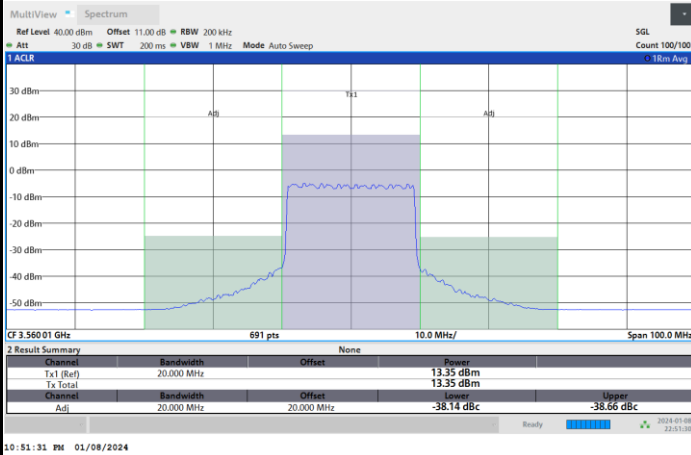




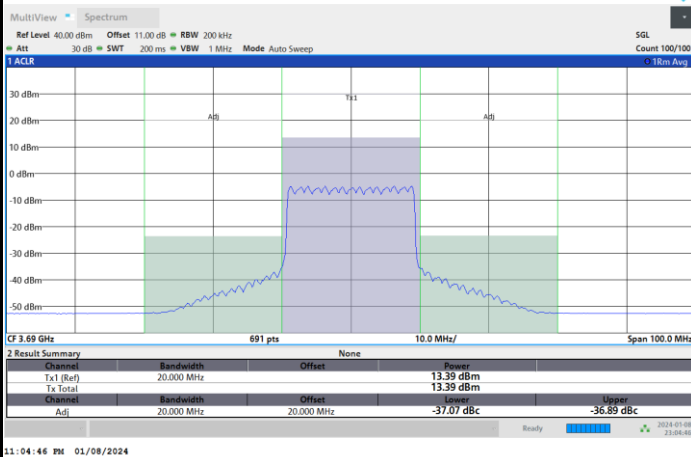
FR1 n48 / 20MHz / CP OFDM / QPSK / Full RB

Lowest Channel

Middle Channel



Highest Channel





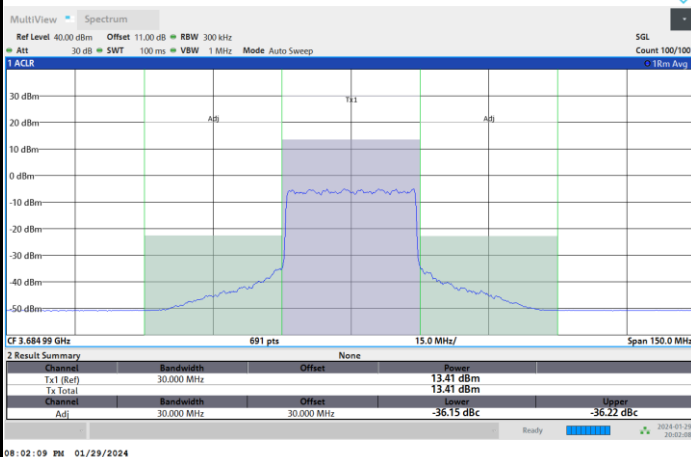
FR1 n48 / 30MHz / CP OFDM / QPSK / Full RB

Lowest Channel

Middle Channel



Highest Channel

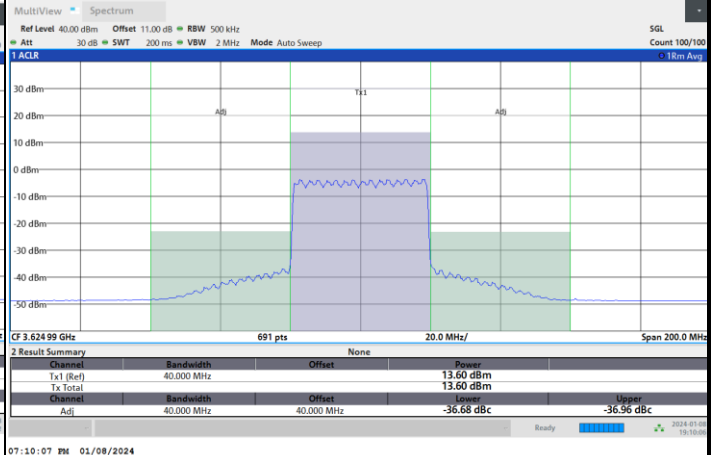
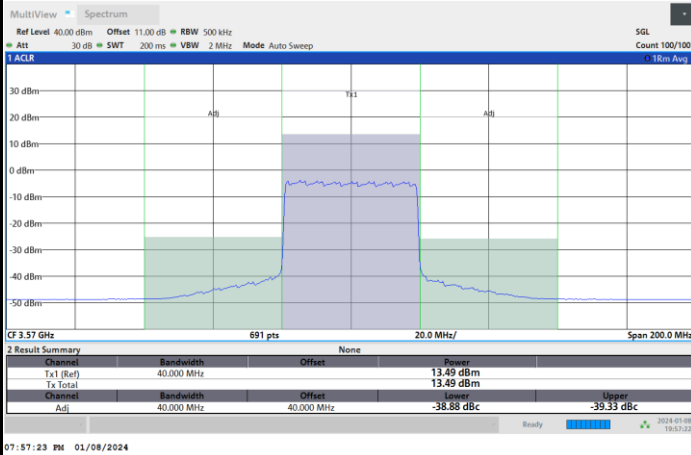




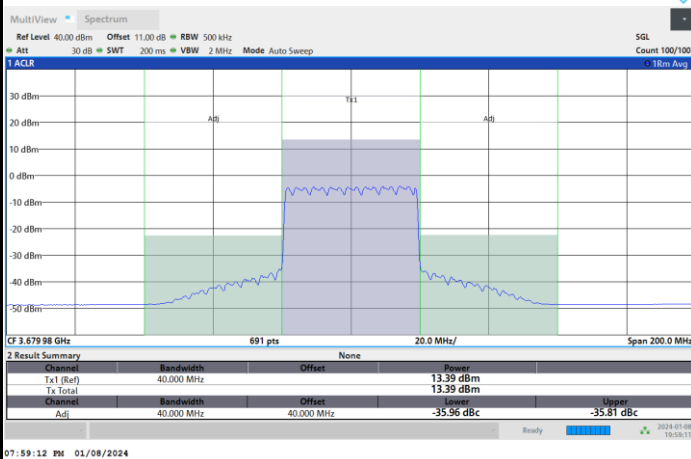
FR1 n48 / 40MHz / CP OFDM / QPSK / Full RB

Lowest Channel

Middle Channel



Highest Channel

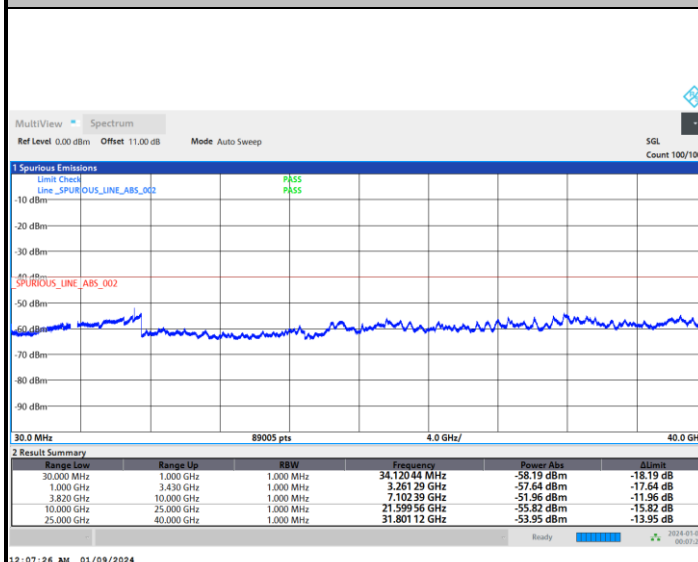




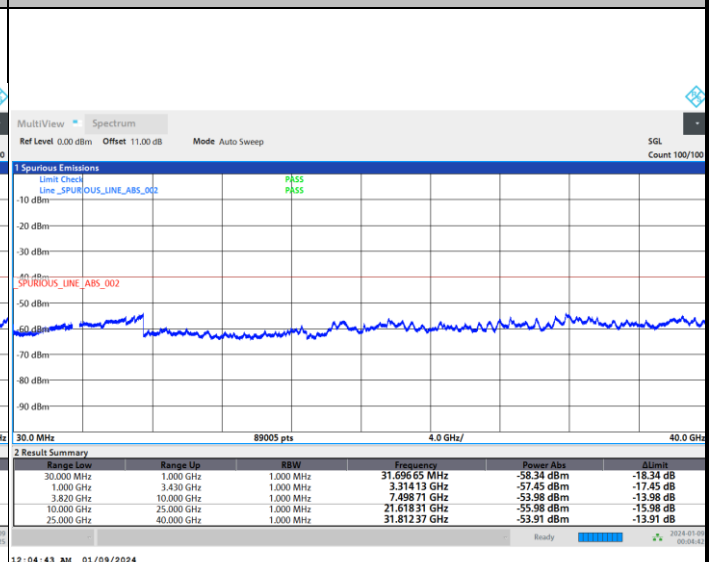
# Conducted Spurious Emission

FR1 n48 / 10MHz / DFT-S OFDM / QPSK / 1RB1

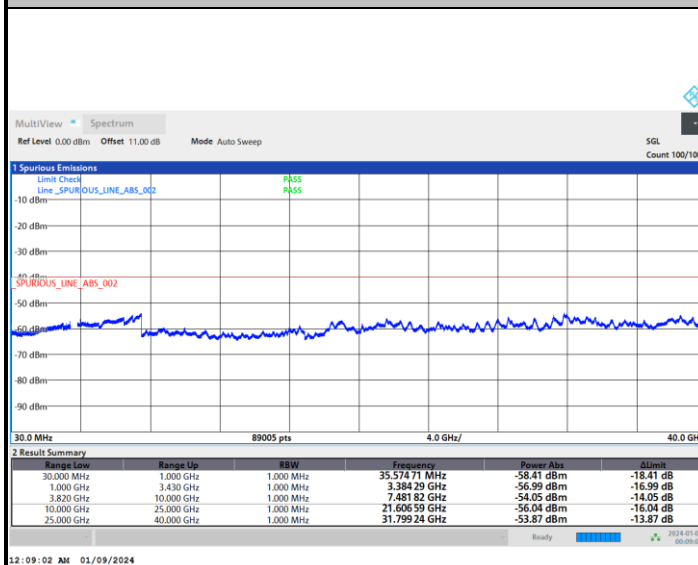
## Lowest Channel



## Middle Channel



## Highest Channel

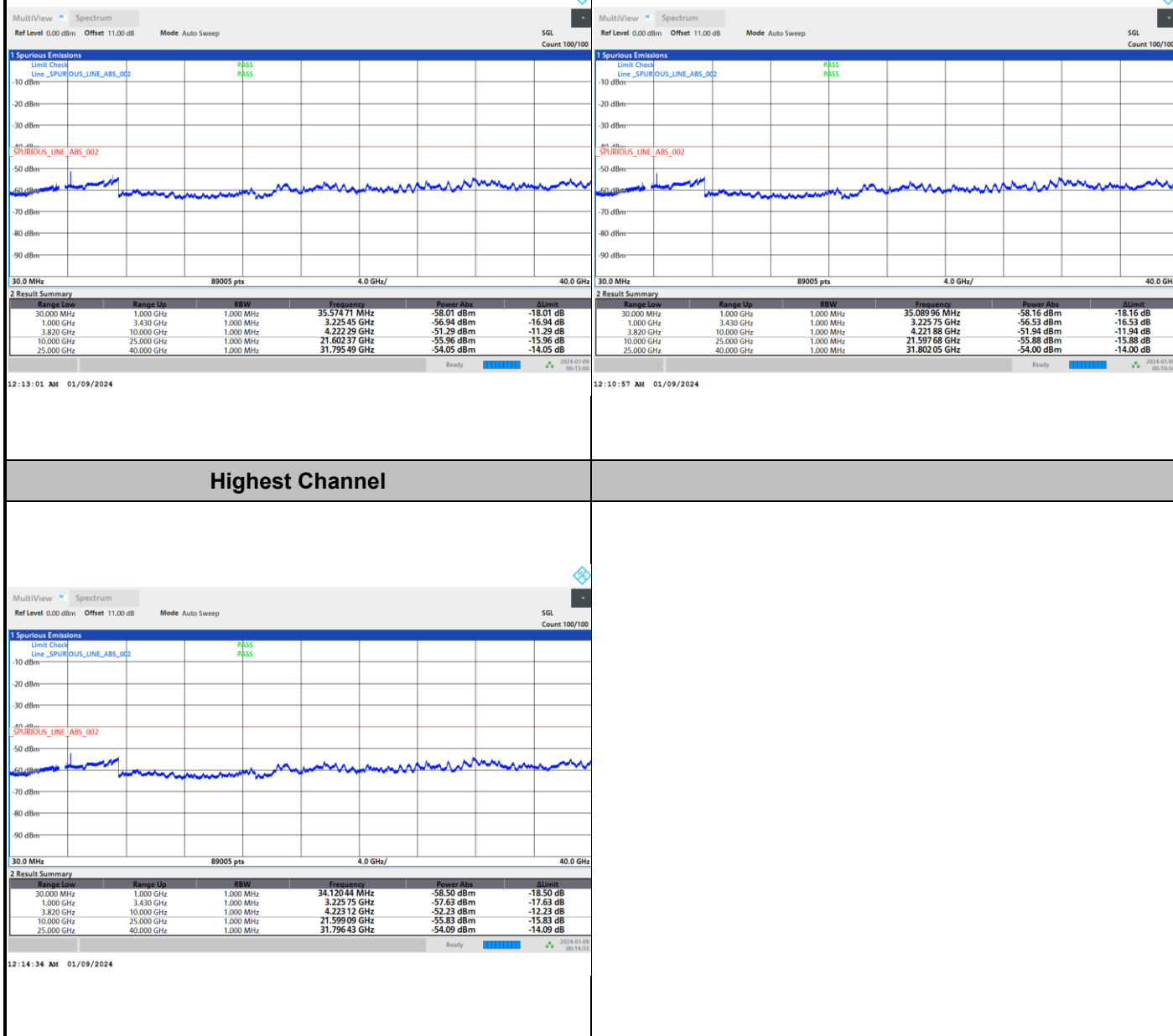




## FR1 n48 / 40MHz / DFT-S OFDM / QPSK / 1RB1

## Lowest Channel

## Middle Channel



## Frequency Stability

| Test Conditions     |                   | FR1 n48 (BPSK) / Middle Channel | Limit   |
|---------------------|-------------------|---------------------------------|---------|
| Temperature<br>(°C) | Voltage<br>(Volt) | BW 20MHz                        | Note 2. |
|                     |                   | Deviation (ppm)                 | Result  |
| 50                  | Normal Voltage    | 0.0032                          | PASS    |
| 40                  | Normal Voltage    | 0.0026                          |         |
| 30                  | Normal Voltage    | 0.0008                          |         |
| 20(Ref.)            | Normal Voltage    | 0.0000                          |         |
| 10                  | Normal Voltage    | 0.0027                          |         |
| 0                   | Normal Voltage    | 0.0046                          |         |
| -10                 | Normal Voltage    | 0.0002                          |         |
| -20                 | Normal Voltage    | 0.0000                          |         |
| -30                 | Normal Voltage    | 0.0005                          |         |
| 20                  | Maximum Voltage   | 0.0038                          |         |
| 20                  | Normal Voltage    | 0.0006                          |         |
| 20                  | Battery End Point | 0.0030                          |         |

**Note:**

1. Normal Voltage = 3.8 V. ; Battery End Point (BEP) = 3.6 V. ; Maximum Voltage = 4.2 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

**FR1 n77**

&lt;SISO Mode&gt;

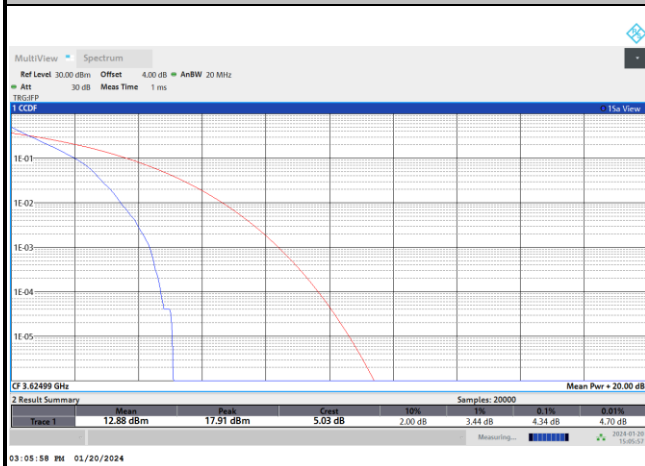
**Peak-to-Average Ratio**

| Mode      | FR1 n77 / 20MHz / DFT-S OFDM |         |         |         |             |
|-----------|------------------------------|---------|---------|---------|-------------|
| Mod.      | PI/2 BPSK                    | QPSK    | 16QAM   | 64QAM   | Limit: 13dB |
| RB Size   | Full RB                      | Full RB | Full RB | Full RB | Result      |
| Middle CH | 4.34                         | 5.12    | 5.94    | 6.38    | <b>PASS</b> |
| Mode      | FR1 n77 / 20MHz / DFT-S OFDM |         |         |         |             |
| Mod.      | 256QAM                       |         |         |         | Limit: 13dB |
| RB Size   | Full RB                      |         |         |         | Result      |
| Middle CH | 6.34                         |         |         |         | <b>PASS</b> |

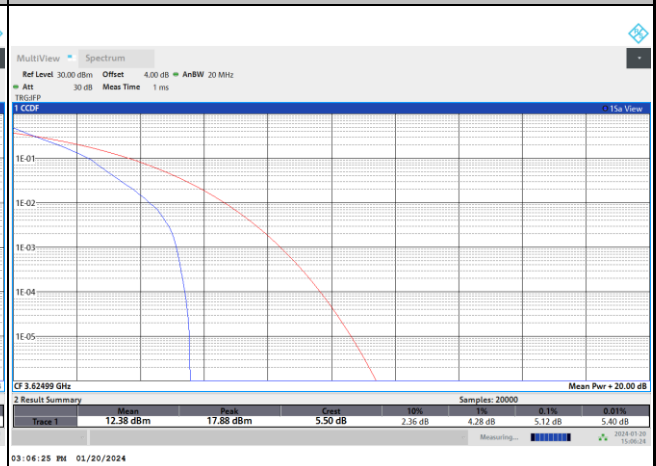


## FR1 n77 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

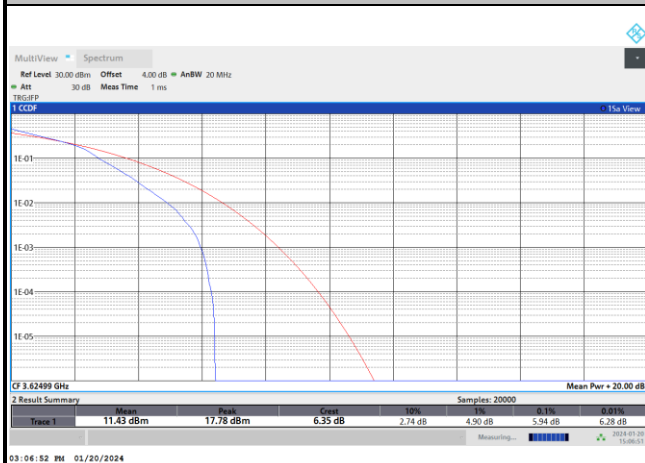
## PI/2 BPSK



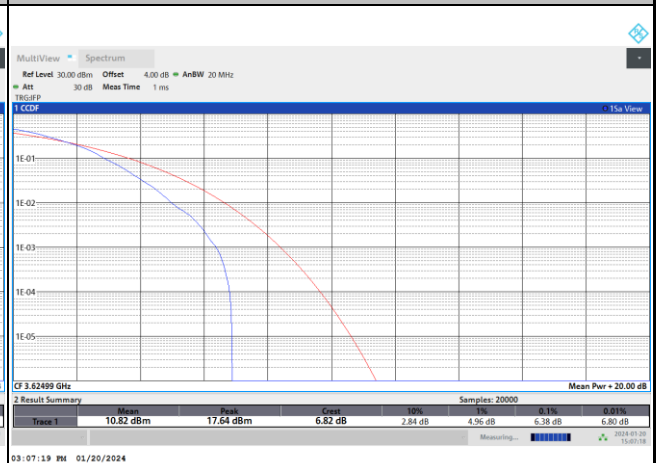
## QPSK



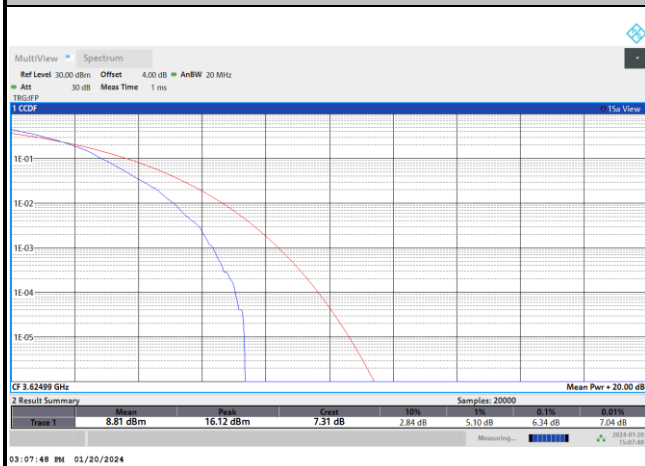
## 16QAM



## 64QAM



## 256QAM



**26dB Bandwidth**

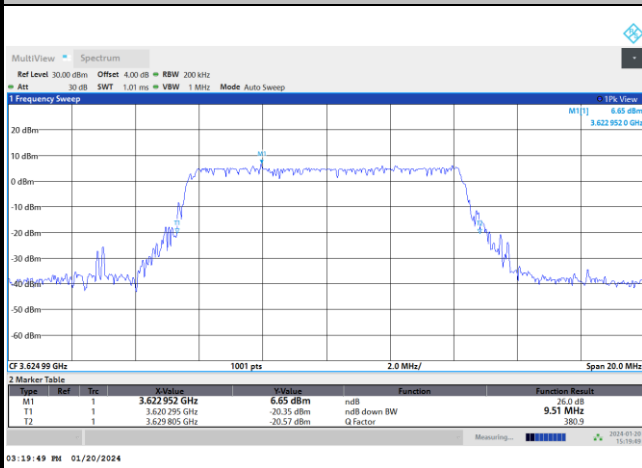
| Mode      | FR1 n77 : 26dB BW(MHz) / DFT-S OFDM |           |           |           |           |           |           |           |
|-----------|-------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| BW        | 10MHz                               | 15MHz     | 20MHz     | 25MHz     | 30MHz     | 40MHz     | 50MHz     | 60MHz     |
| 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 | 9.51                                | 14.36     | 19.50     | -         | 29.43     | 38.68     | 48.75     | 62.94     |
| BW        | 70MHz                               | 80MHz     | 90MHz     | 100MHz    |           |           |           |           |
| Mod.      | PI/2 BPSK                           | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK |           |           |           |           |
| Middle CH | 69.23                               | 80.08     | 91.71     | 101.70    |           |           |           |           |

| Mode      | FR1 n77 : 26dB BW(MHz) / CP OFDM |        |       |        |       |        |        |        |
|-----------|----------------------------------|--------|-------|--------|-------|--------|--------|--------|
| BW        | 10MHz                            |        | 15MHz |        | 20MHz |        | 25MHz  |        |
| Mod.      | QPSK                             | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | 9.79                             | 9.57   | 14.74 | 15.02  | 20.14 | 20.14  | -      | -      |
| Mod.      | 64QAM                            | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | 9.65                             | 9.75   | 15.11 | 14.84  | 19.70 | 19.74  | -      | -      |
| BW        | 30MHz                            |        | 40MHz |        | 50MHz |        | 60MHz  |        |
| Mod.      | QPSK                             | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | 30.45                            | 30.69  | 40.44 | 40.52  | 50.15 | 50.45  | 62.82  | 62.94  |
| Mod.      | 64QAM                            | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | 30.57                            | 30.63  | 40.68 | 40.60  | 50.55 | 50.35  | 62.70  | 62.70  |
| BW        | 70MHz                            |        | 80MHz |        | 90MHz |        | 100MHz |        |
| Mod.      | QPSK                             | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | 72.87                            | 73.01  | 80.56 | 80.88  | 92.79 | 92.79  | 102.70 | 102.90 |
| Mod.      | 64QAM                            | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | 72.59                            | 72.45  | 80.56 | 80.72  | 92.97 | 92.79  | 102.90 | 103.50 |



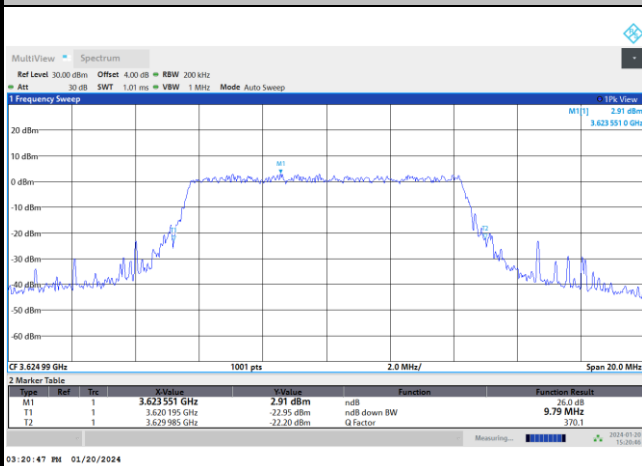
## FR1 n77 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

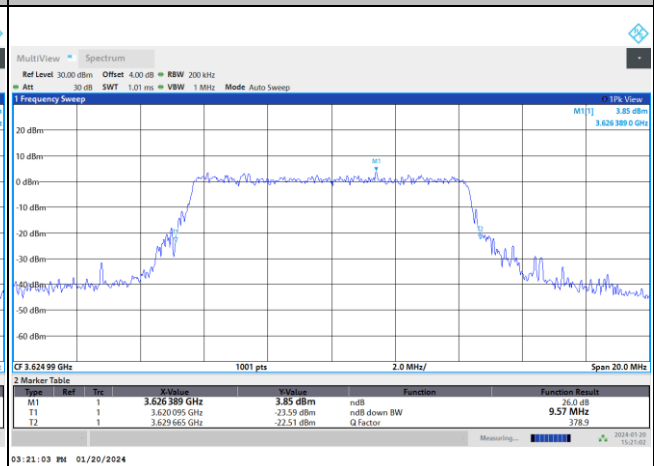


## FR1 n77 / 10MHz / CP OFDM / Middle Channel / Full RB

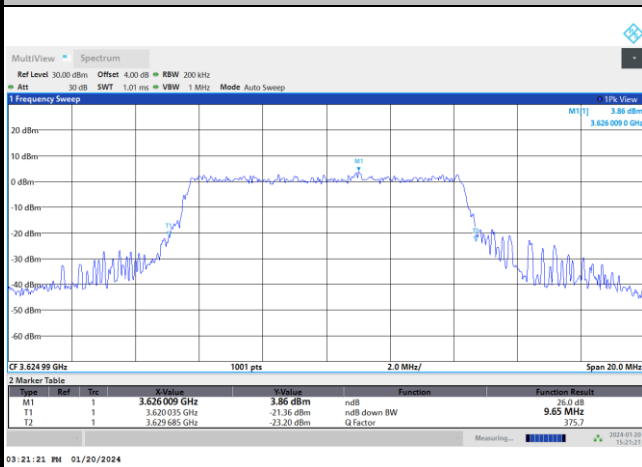
## QPSK



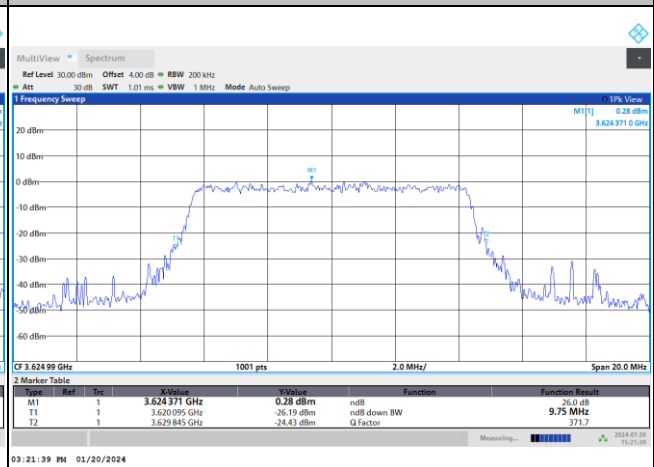
## 16QAM



## 64QAM



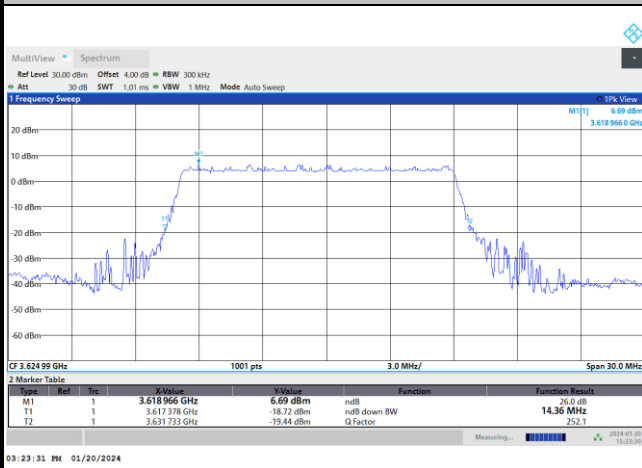
## 256QAM





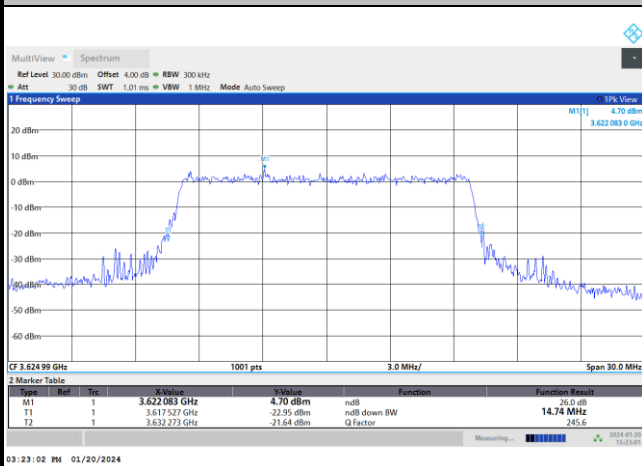
## FR1 n77 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

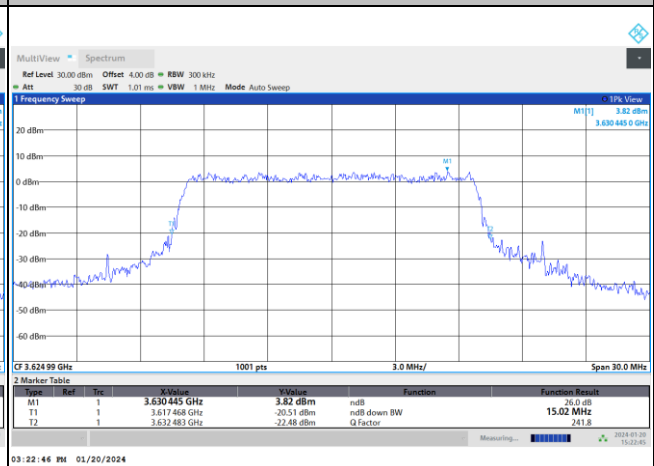


## FR1 n77 / 15MHz / CP OFDM / Middle Channel / Full RB

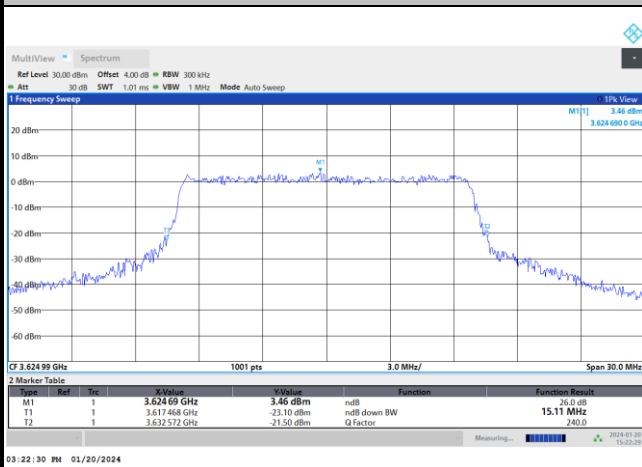
## QPSK



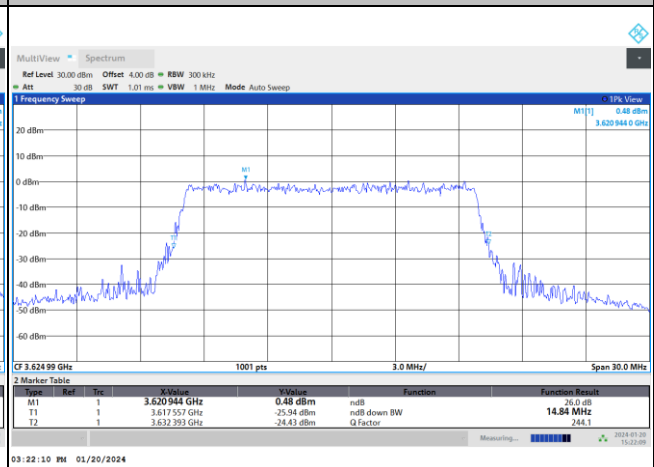
## 16QAM



## 64QAM



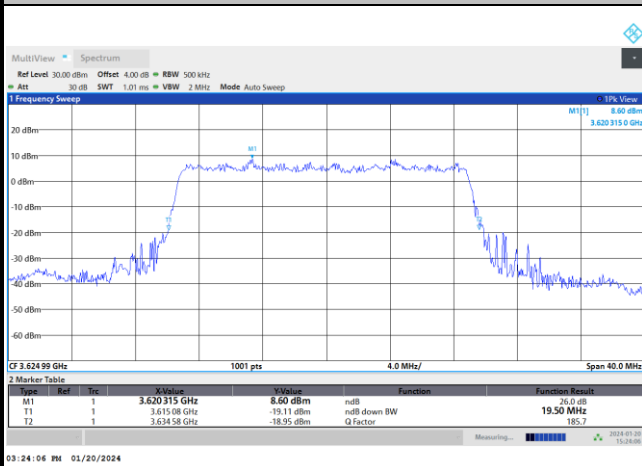
## 256QAM





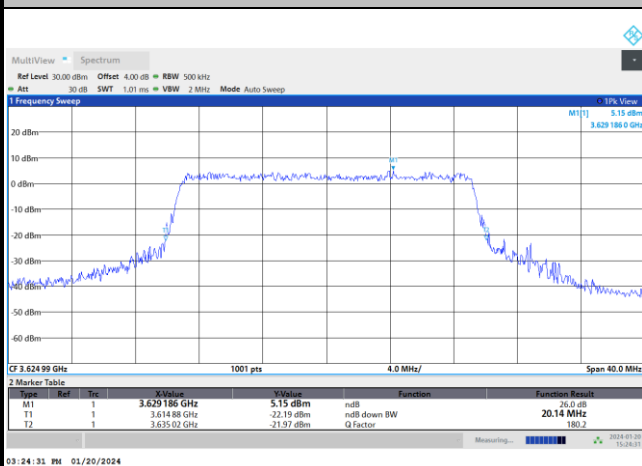
## FR1 n77 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

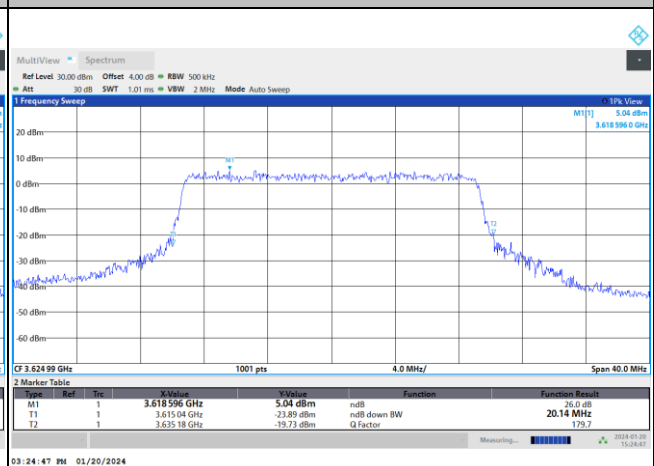


## FR1 n77 / 20MHz / CP OFDM / Middle Channel / Full RB

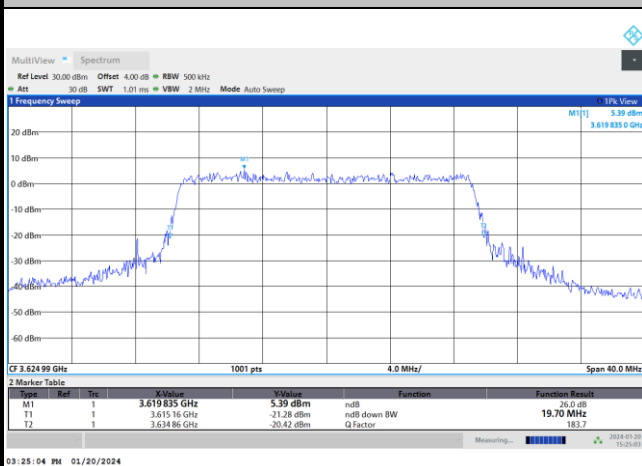
## QPSK



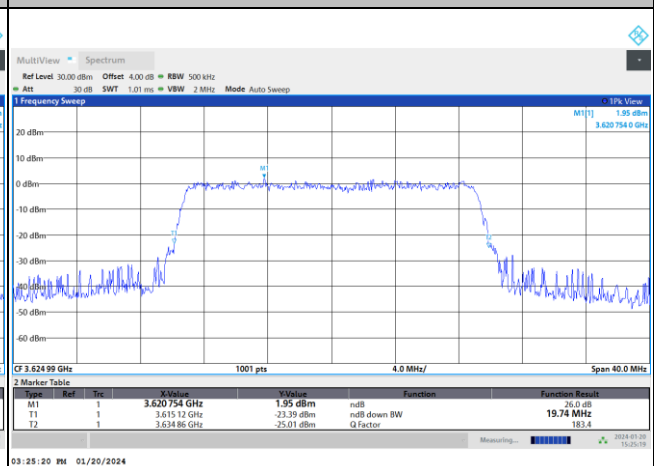
## 16QAM



## 64QAM



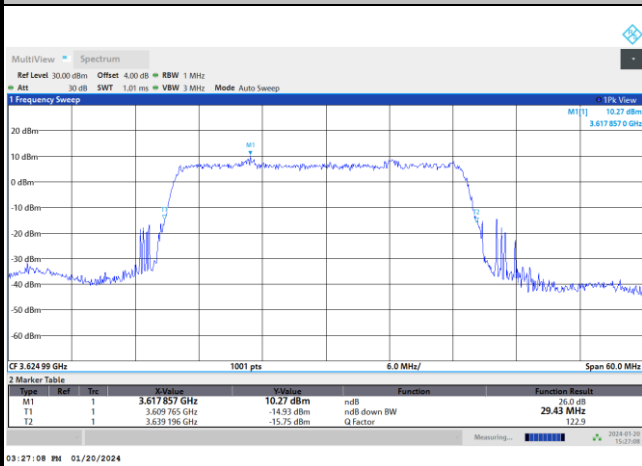
## 256QAM





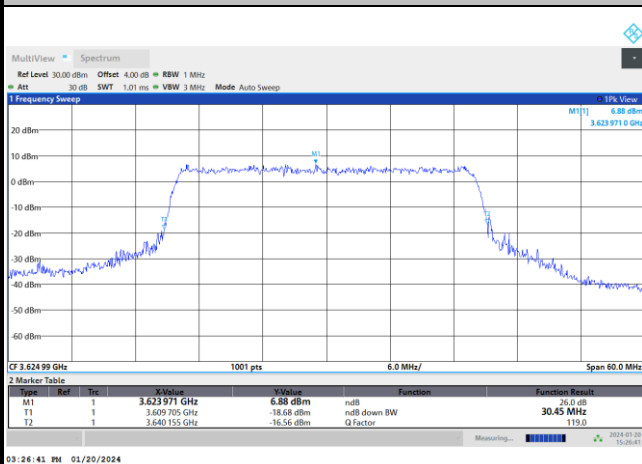
## FR1 n77 / 30MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

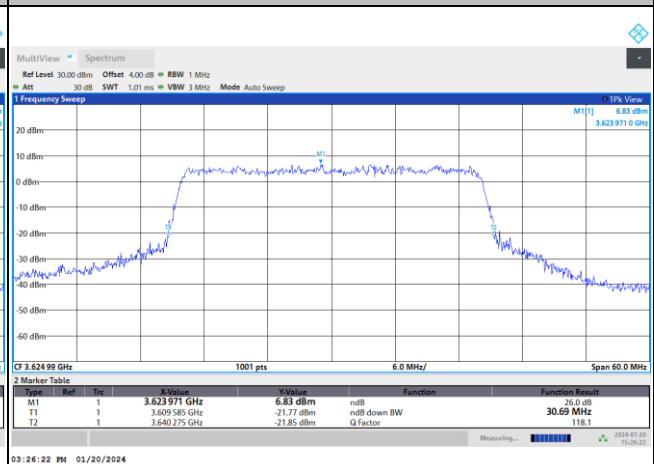


## FR1 n77 / 30MHz / CP OFDM / Middle Channel / Full RB

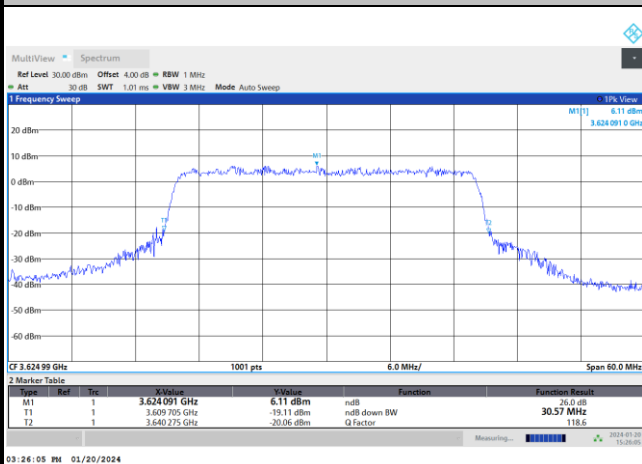
## QPSK



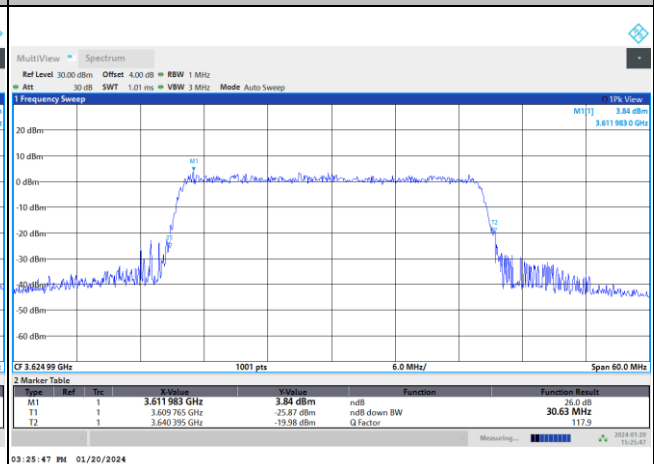
## 16QAM



## 64QAM



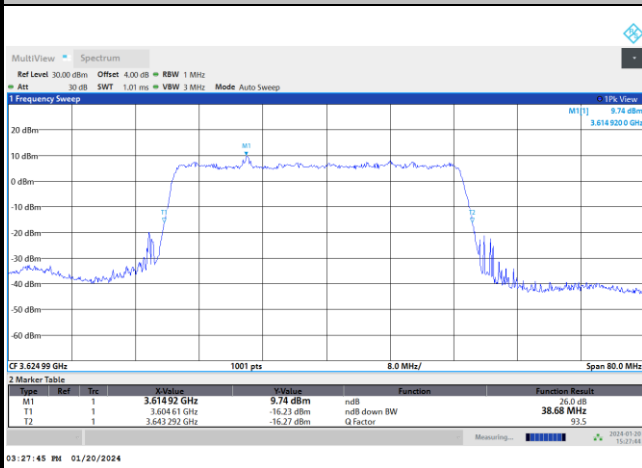
## 256QAM





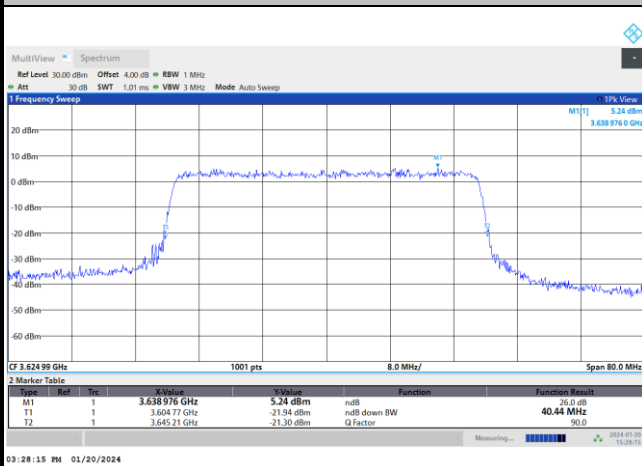
## FR1 n77 / 40MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

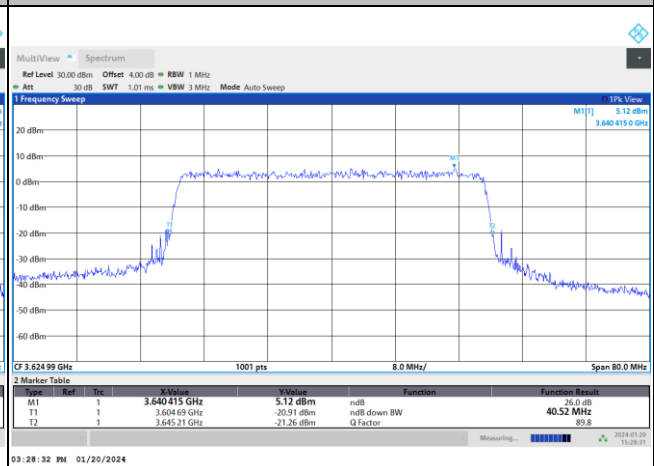


## FR1 n77 / 40MHz / CP OFDM / Middle Channel / Full RB

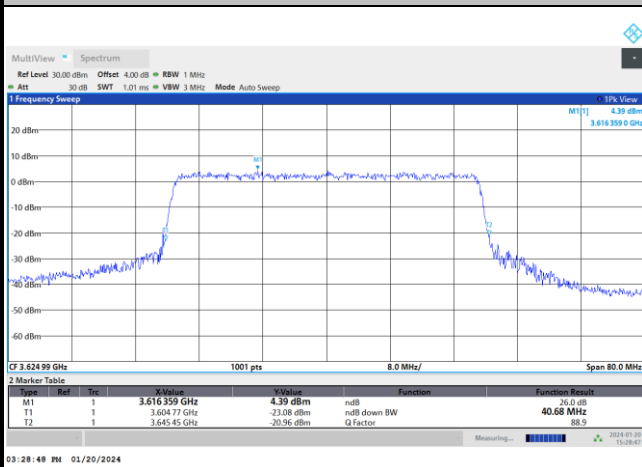
## QPSK



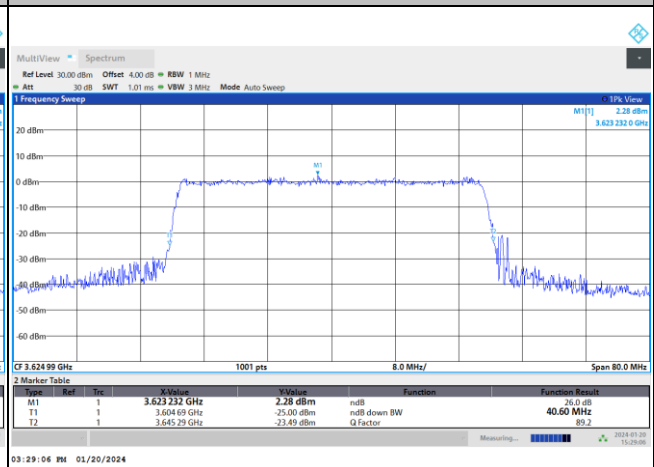
## 16QAM



## 64QAM



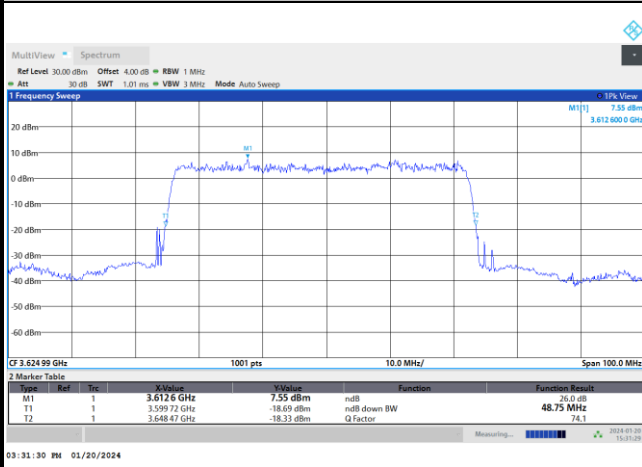
## 256QAM





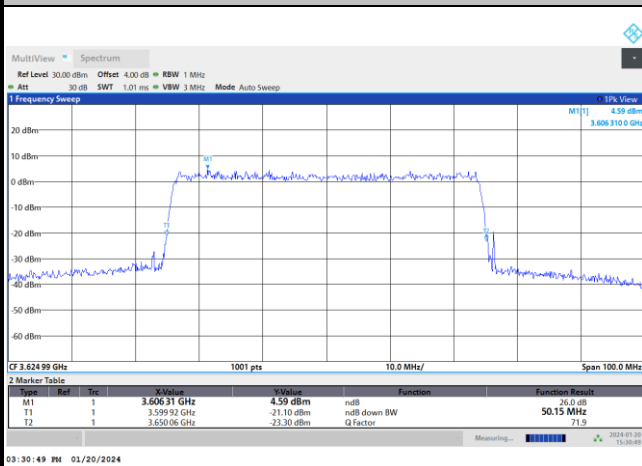
## FR1 n77 / 50MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

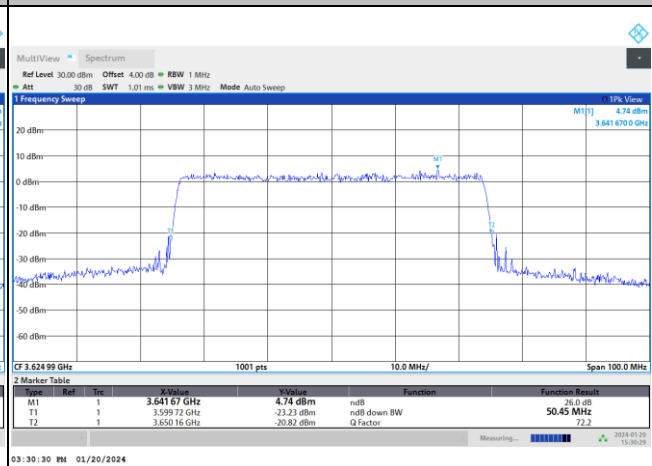


## FR1 n77 / 50MHz / CP OFDM / Middle Channel / Full RB

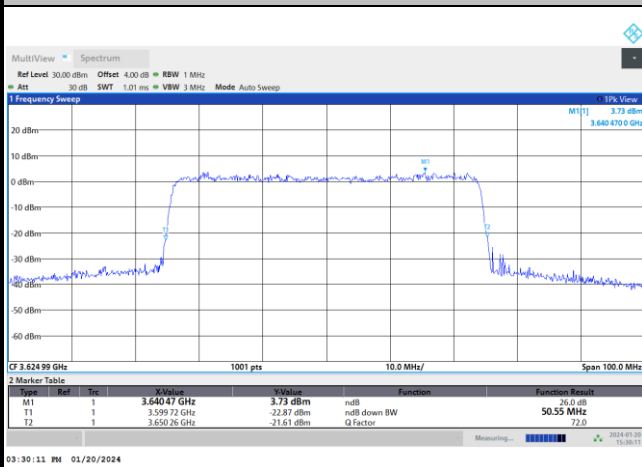
## QPSK



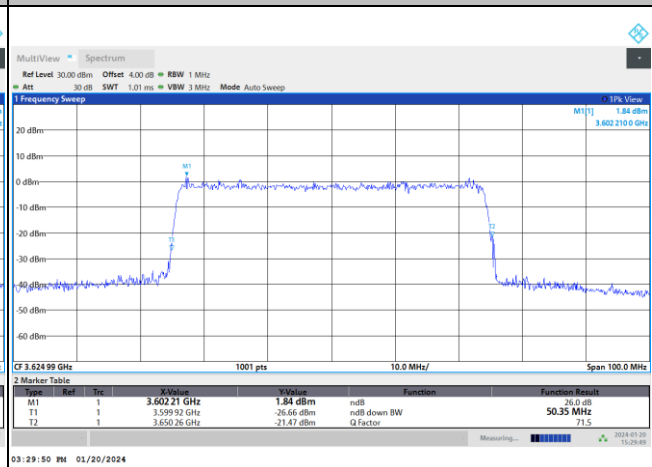
## 16QAM



## 64QAM



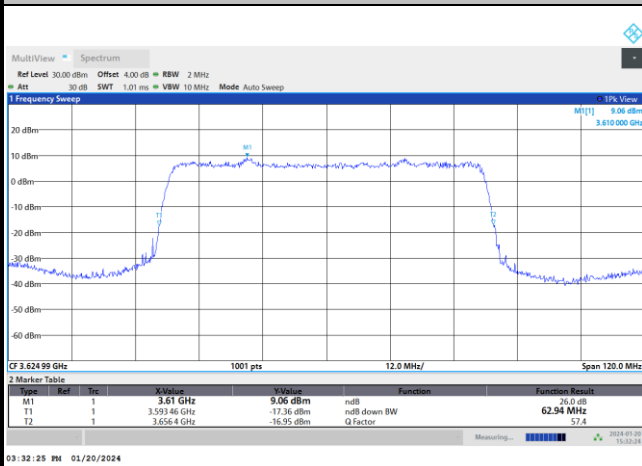
## 256QAM





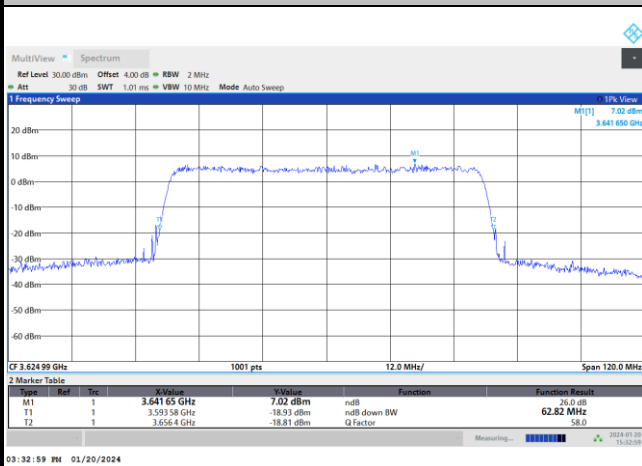
## FR1 n77 / 60MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

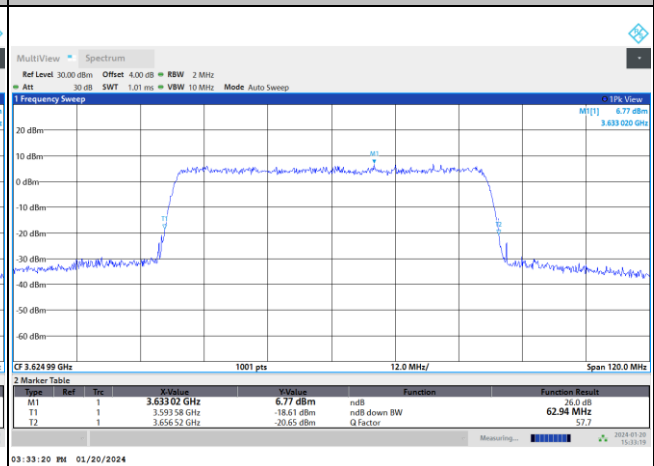


## FR1 n77 / 60MHz / CP OFDM / Middle Channel / Full RB

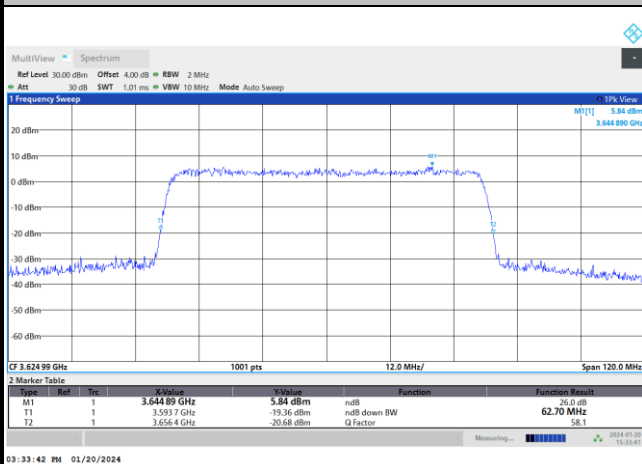
## QPSK



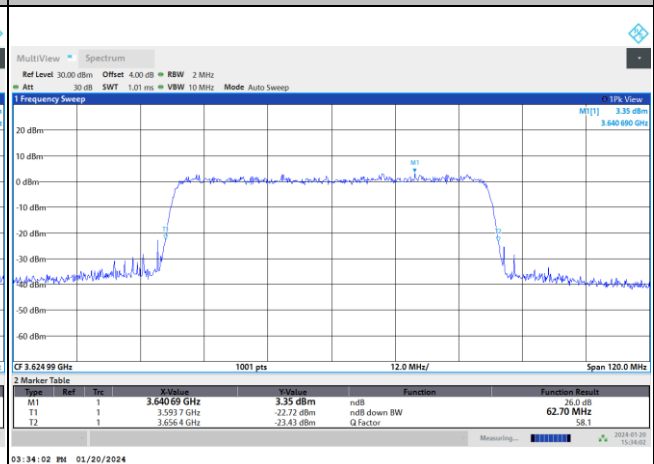
## 16QAM



## 64QAM



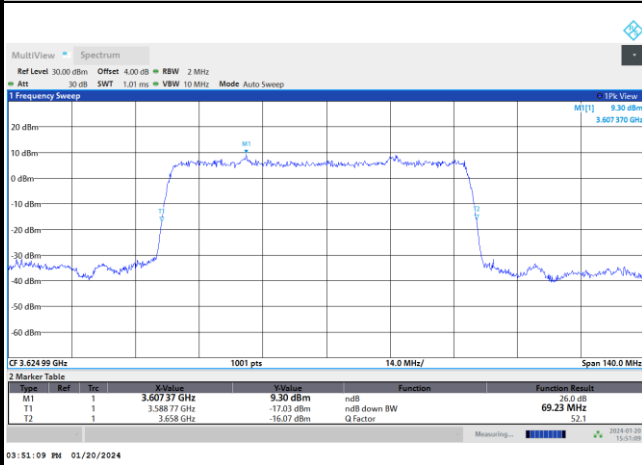
## 256QAM





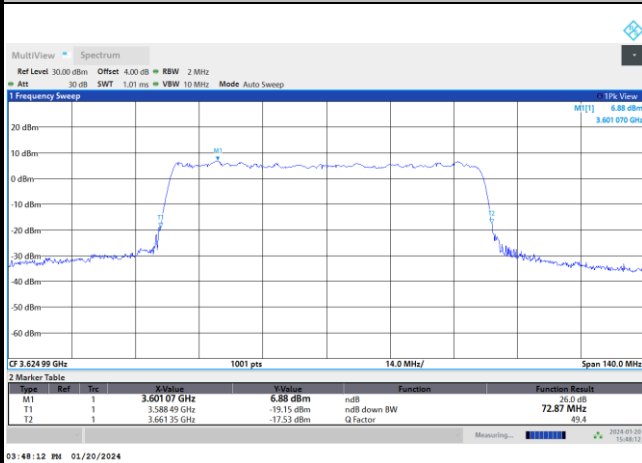
## FR1 n77 / 70MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

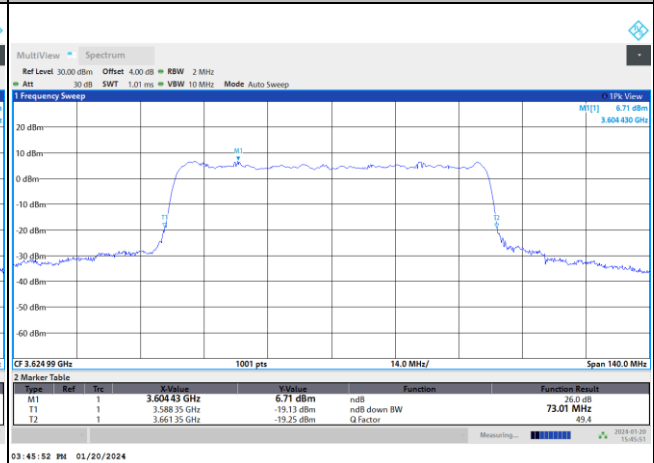


## FR1 n77 / 70MHz / CP OFDM / Middle Channel / Full RB

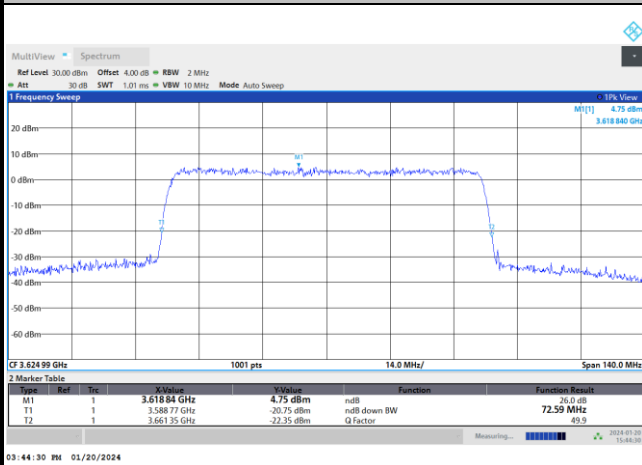
## QPSK



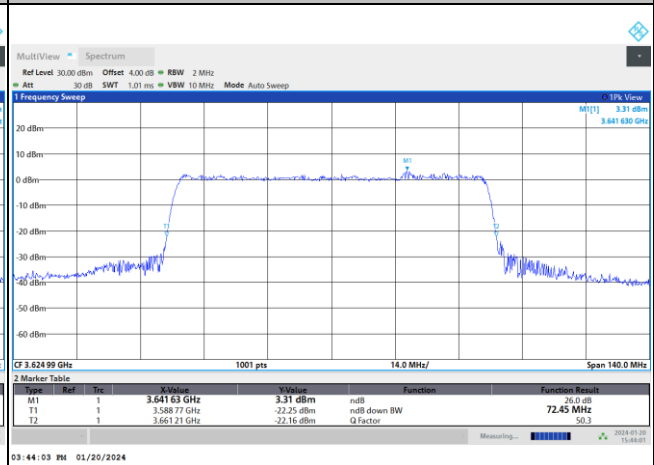
## 16QAM

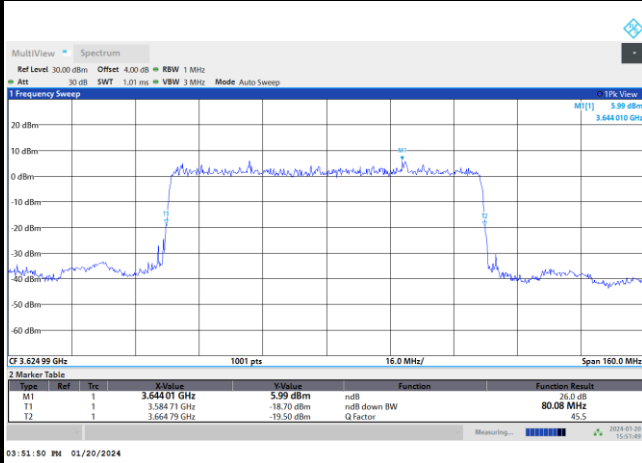
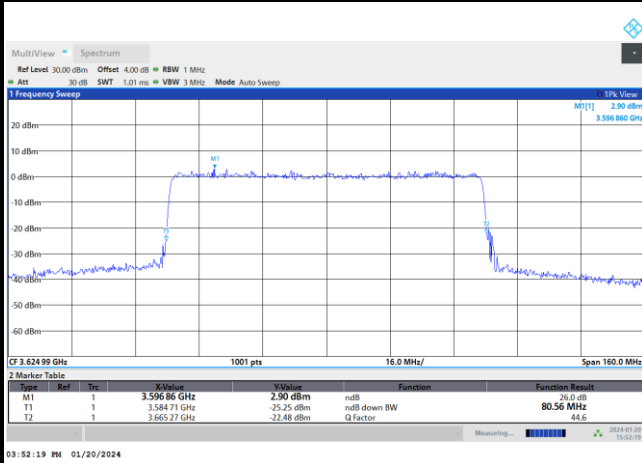
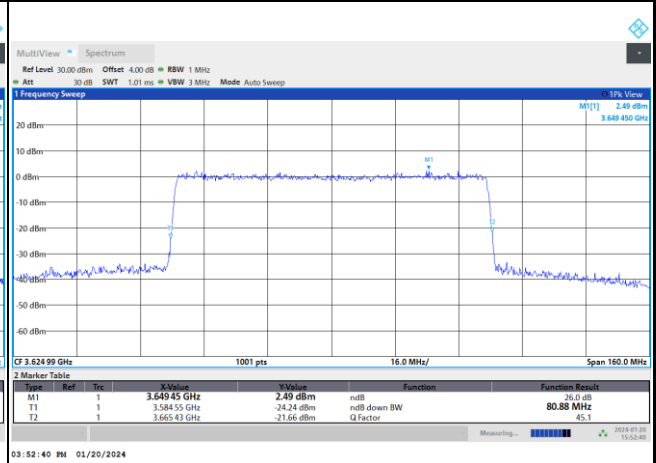
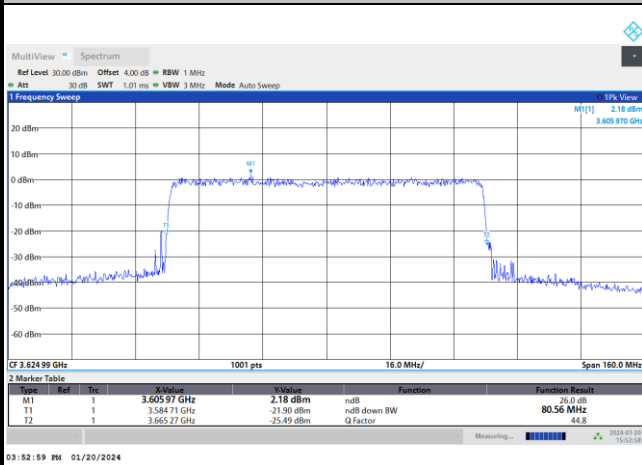
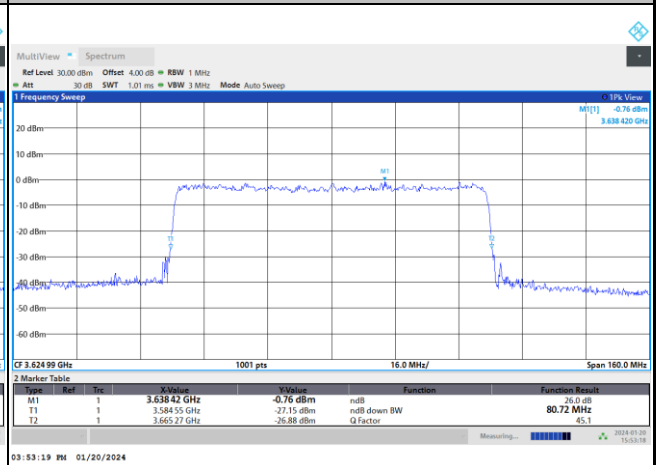


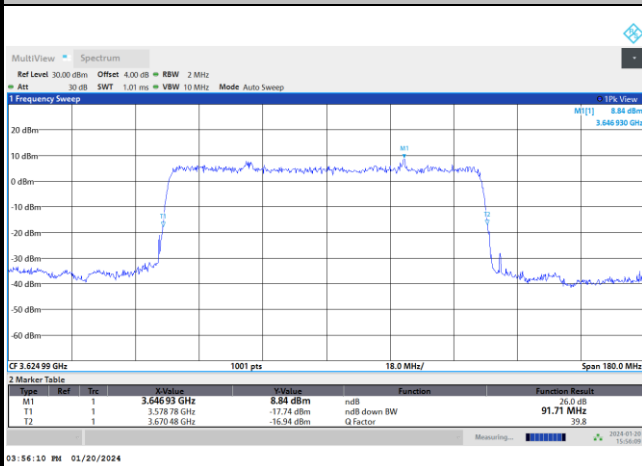
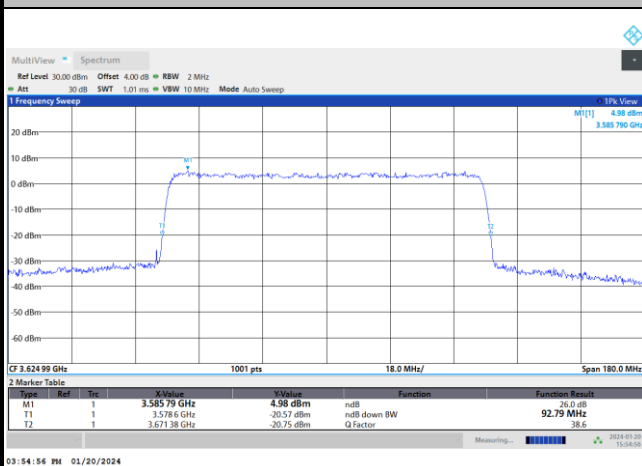
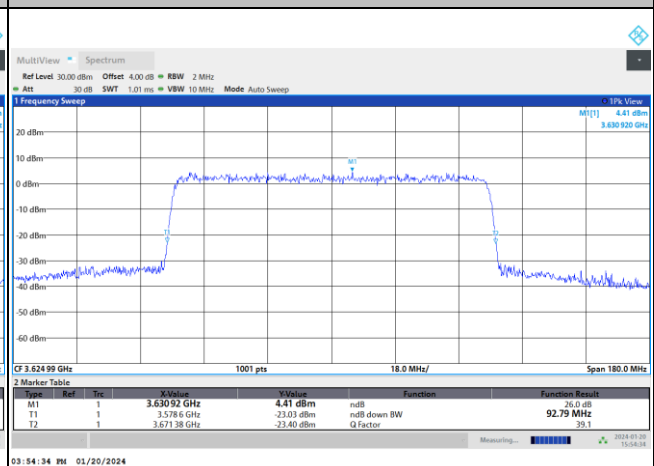
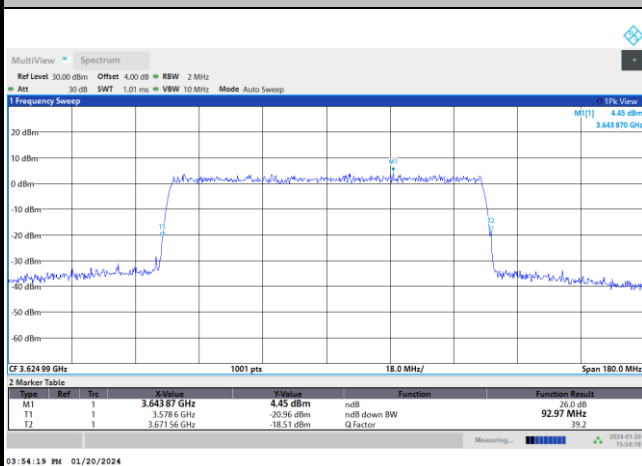
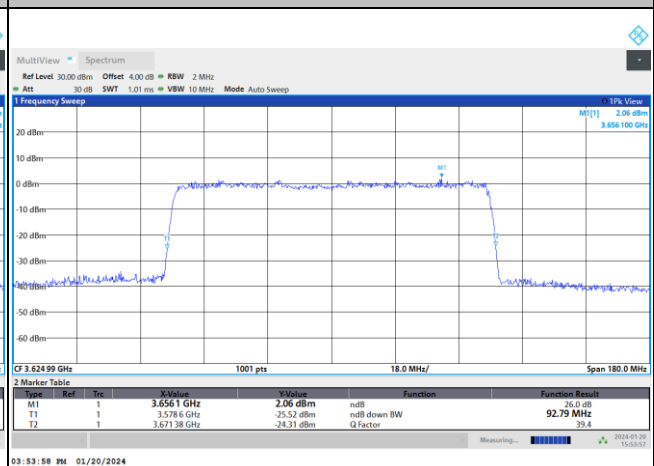
## 64QAM



## 256QAM



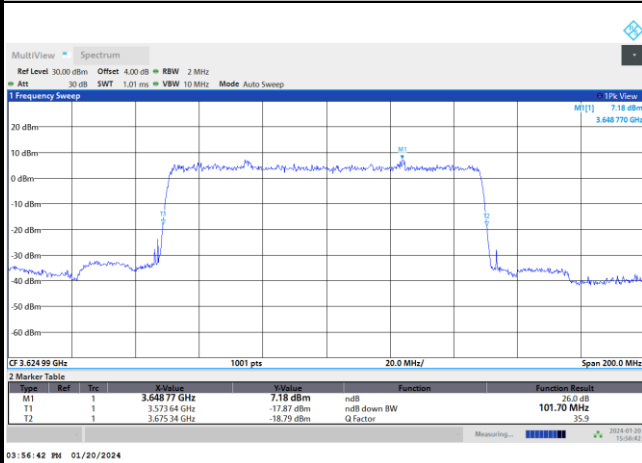
**FR1 n77 / 80MHz / DFT-S OFDM / Middle Channel / Full RB**
**PI/2 BPSK**

**FR1 n77 / 80MHz / CP OFDM / Middle Channel / Full RB**
**QPSK**

**16QAM**

**64QAM**

**256QAM**


**FR1 n77 / 90MHz / DFT-S OFDM / Middle Channel / Full RB**
**PI/2 BPSK**

**FR1 n77 / 90MHz / CP OFDM / Middle Channel / Full RB**
**QPSK**

**16QAM**

**64QAM**

**256QAM**




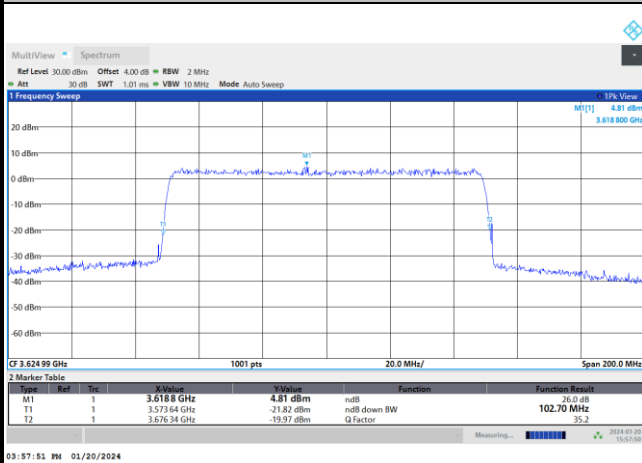
## FR1 n77 / 100MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

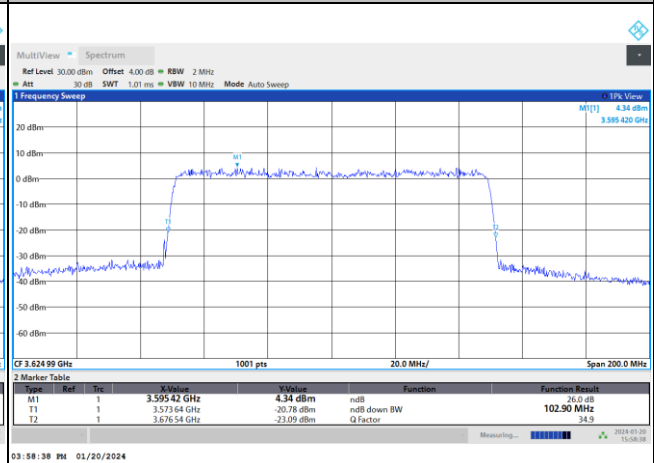


## FR1 n77 / 100MHz / CP OFDM / Middle Channel / Full RB

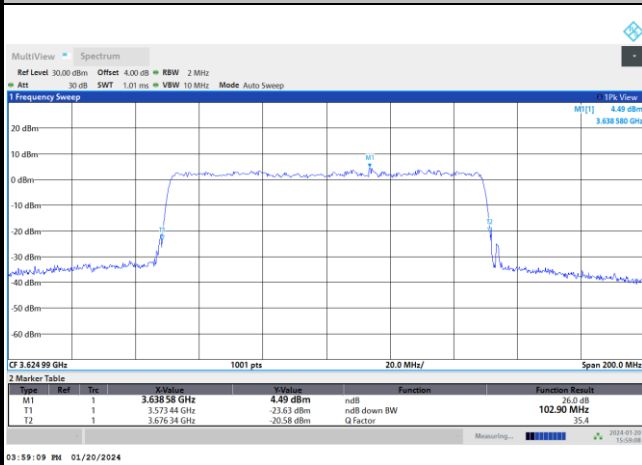
## QPSK



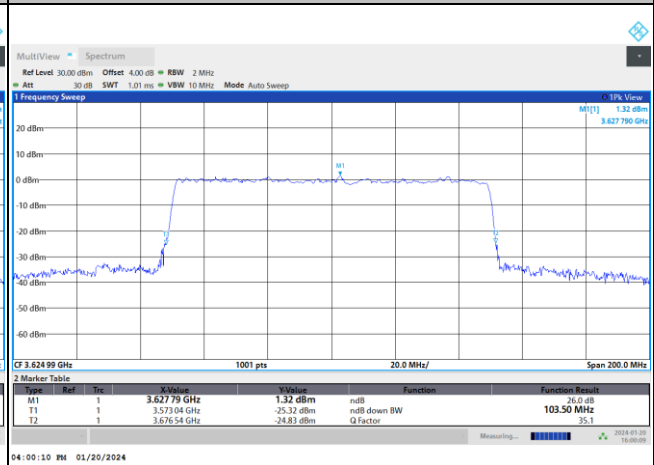
## 16QAM



## 64QAM



## 256QAM



**Occupied Bandwidth**

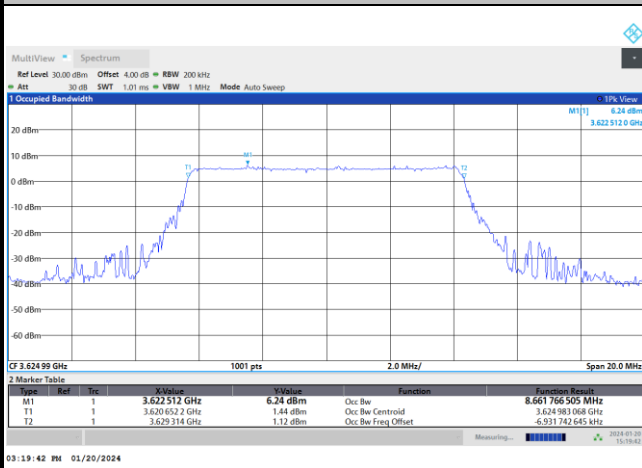
| Mode      | FR1 n77 : OB BW(MHz) / DFT-S OFDM |           |           |           |           |           |           |           |
|-----------|-----------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| BW        | 10MHz                             | 15MHz     | 20MHz     | 25MHz     | 30MHz     | 40MHz     | 50MHz     | 60MHz     |
| 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 | 8.66                              | 12.96     | 18.01     | -         | 27.17     | 35.92     | 45.95     | 58.61     |
| BW        | 70MHz                             | 80MHz     | 90MHz     | 100MHz    |           |           |           |           |
| Mod.      | PI/2 BPSK                         | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK |           |           |           |           |
| Middle CH | 65.04                             | 77.52     | 87.08     | 96.89     |           |           |           |           |

| Mode      | FR1 n77 : OB BW(MHz) / CP OFDM |        |       |        |       |        |        |        |
|-----------|--------------------------------|--------|-------|--------|-------|--------|--------|--------|
| BW        | 10MHz                          |        | 15MHz |        | 20MHz |        | 25MHz  |        |
| Mod.      | QPSK                           | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | 8.67                           | 8.66   | 13.65 | 13.69  | 18.32 | 18.31  | -      | -      |
| Mod.      | 64QAM                          | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | 8.71                           | 8.66   | 13.67 | 13.67  | 18.40 | 18.36  | -      | -      |
| BW        | 30MHz                          |        | 40MHz |        | 50MHz |        | 60MHz  |        |
| Mod.      | QPSK                           | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | 28.17                          | 28.20  | 38.02 | 38.14  | 47.63 | 47.61  | 58.51  | 58.47  |
| Mod.      | 64QAM                          | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | 28.14                          | 28.16  | 38.07 | 38.18  | 47.62 | 47.69  | 58.51  | 58.52  |
| BW        | 70MHz                          |        | 80MHz |        | 90MHz |        | 100MHz |        |
| Mod.      | QPSK                           | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | 68.04                          | 68.09  | 77.80 | 77.89  | 87.77 | 87.74  | 97.77  | 97.73  |
| Mod.      | 64QAM                          | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | 67.94                          | 67.94  | 77.76 | 77.87  | 87.70 | 87.92  | 97.67  | 97.69  |



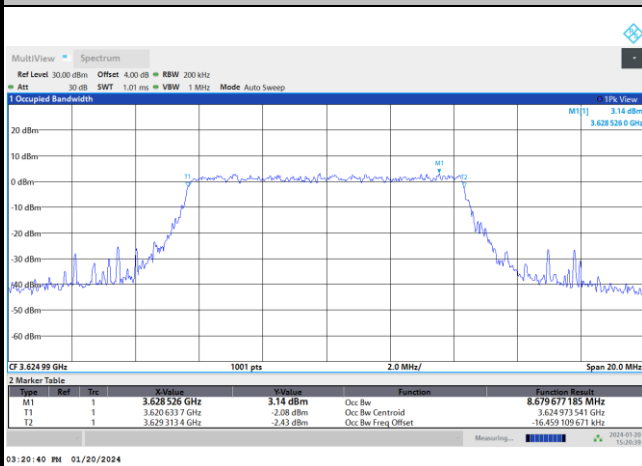
## FR1 n77 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

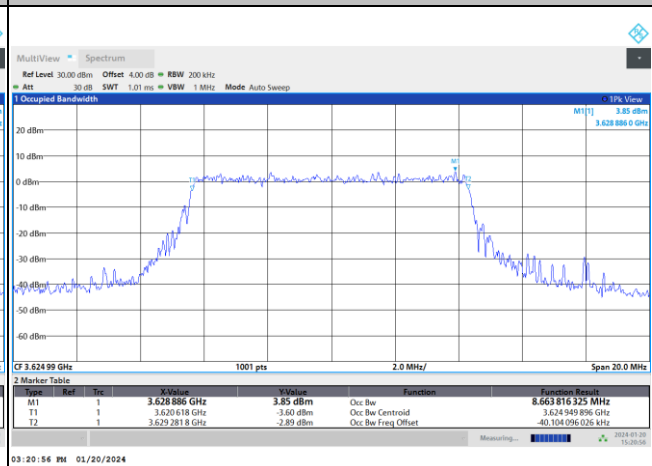


## FR1 n77 / 10MHz / CP OFDM / Middle Channel / Full RB

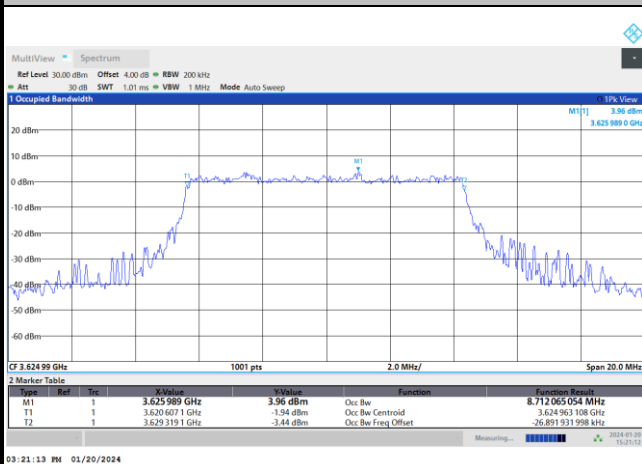
## QPSK



## 16QAM



## 64QAM



## 256QAM

