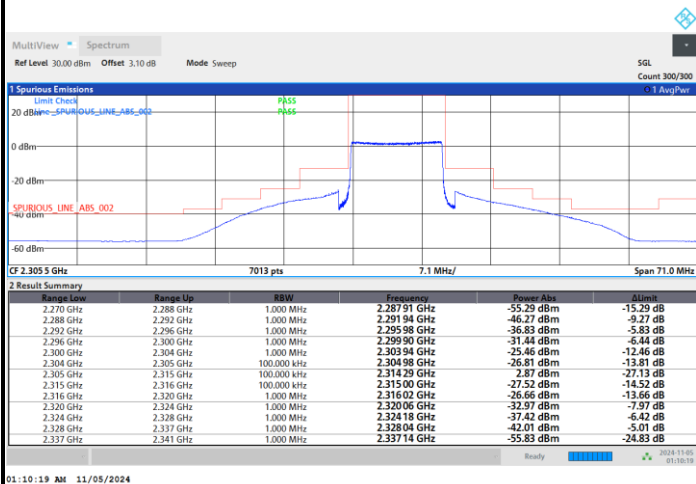




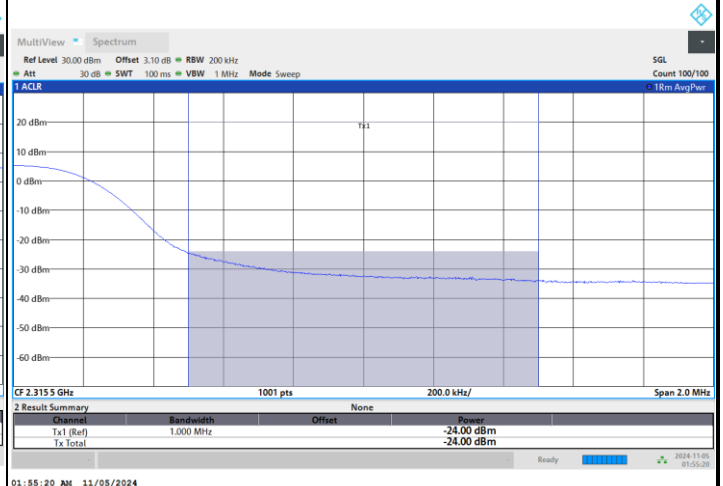
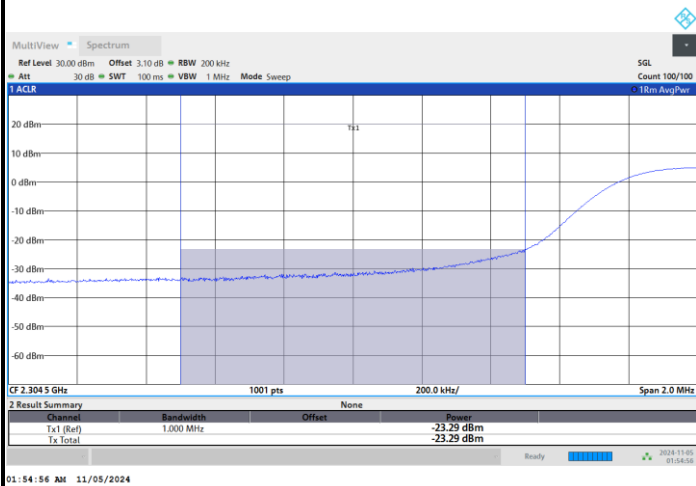
## FR1 n30 / 10MHz / CP OFDM / QPSK / Full RB

## Middle Band Edge / Full RB



## Middle Band Edge / Full RB / Lower zoom in

## Middle Band Edge / Full RB / Upper zoom in

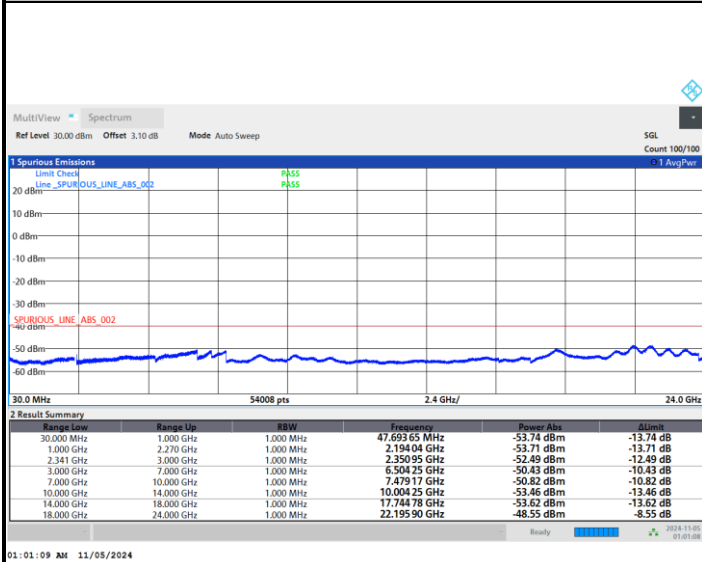




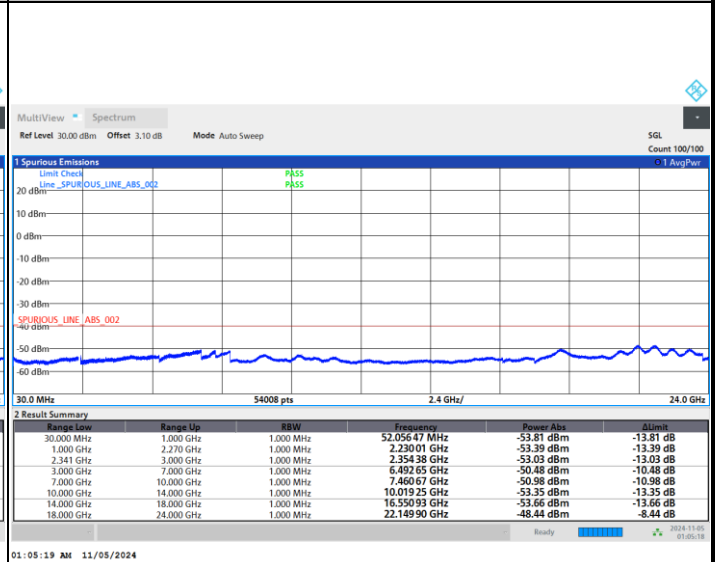
# Conducted Spurious Emission

FR1 n30 / 5MHz / DFT-S OFDM / QPSK / 1RB1

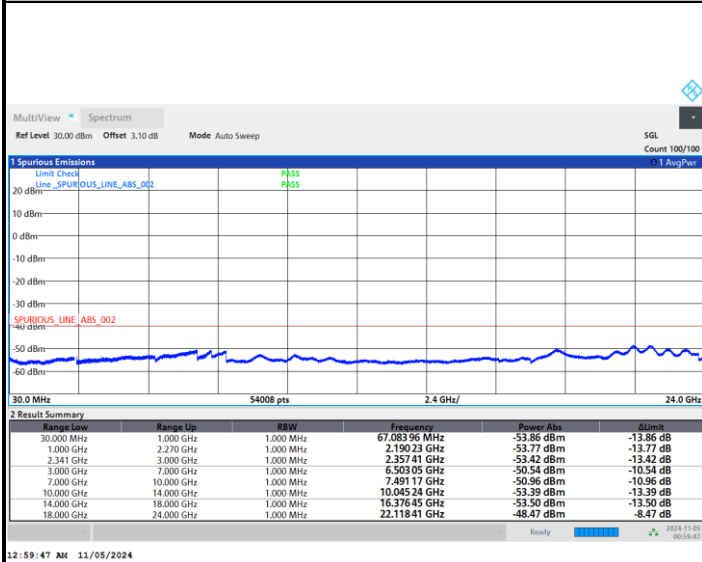
## Lowest Channel



## Middle Channel



## Highest Channel



## Frequency Stability

| Test Conditions     |                   | FR1 n30 (BPSK) / Middle Channel | Limit   |
|---------------------|-------------------|---------------------------------|---------|
| Temperature<br>(°C) | Voltage<br>(Volt) | BW 10MHz                        | Note 2. |
|                     |                   | Deviation (ppm)                 | Result  |
| 50                  | Normal Voltage    | 0.0006                          | PASS    |
| 40                  | Normal Voltage    | 0.0018                          |         |
| 30                  | Normal Voltage    | 0.0013                          |         |
| 20(Ref.)            | Normal Voltage    | 0.0000                          |         |
| 10                  | Normal Voltage    | 0.0052                          |         |
| 0                   | Normal Voltage    | 0.0001                          |         |
| -10                 | Normal Voltage    | 0.0055                          |         |
| -20                 | Normal Voltage    | 0.0010                          |         |
| 20                  | Maximum Voltage   | 0.0039                          |         |
| 20                  | Normal Voltage    | 0.0000                          |         |
| 20                  | Minimum Voltage   | 0.0011                          |         |

**Note:**

1. Normal Voltage = 3.8 V. ; Minimum Voltage = 3.6 V. ; Maximum Voltage = 4.2 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

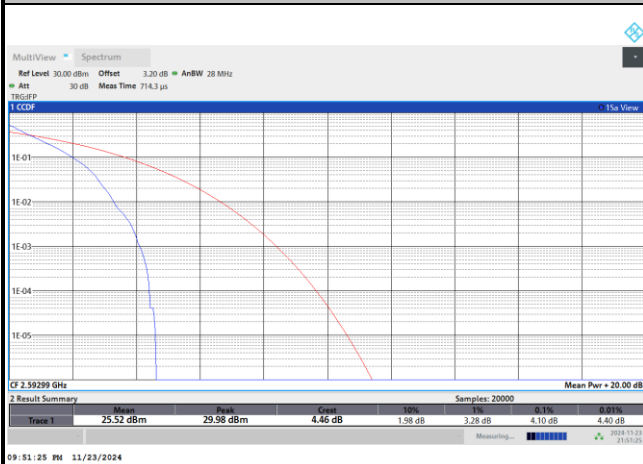
**FR1 n41****Peak-to-Average Ratio**

| Mode      | FR1 n41 / 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 | 4.10                         | 4.64    | 5.64    | 6.04    | <b>PASS</b> |
| Mode      | FR1 n41 / 20MHz / DFT-S OFDM |         |         |         |             |
| Mod.      | 256QAM                       |         |         |         | Limit: 13dB |
| RB Size   | Full RB                      |         |         |         | Result      |
| Middle CH | 6.56                         |         |         |         | <b>PASS</b> |

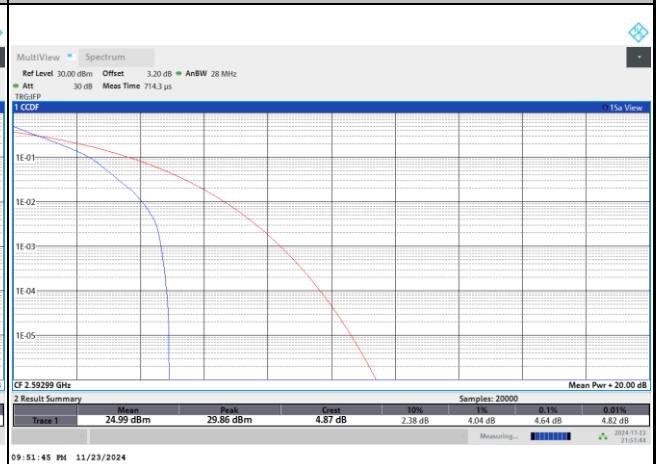


## FR1 n41 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

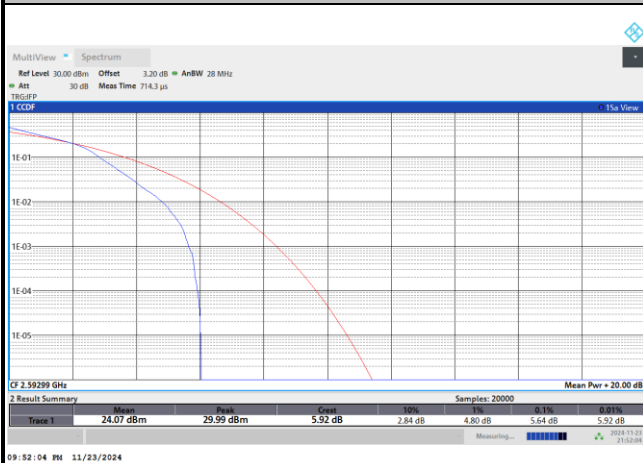
## PI/2 BPSK



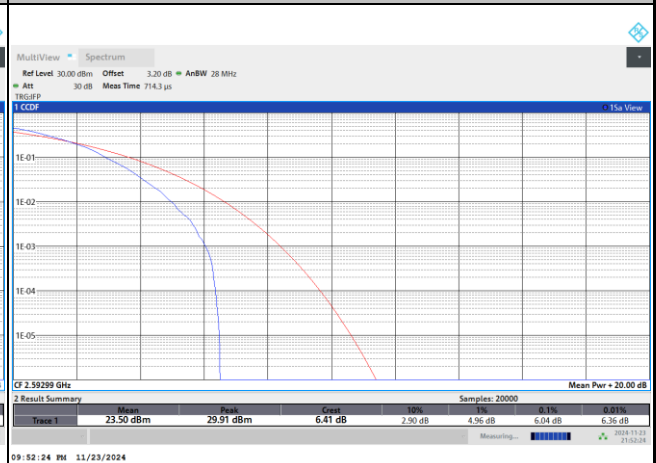
## QPSK



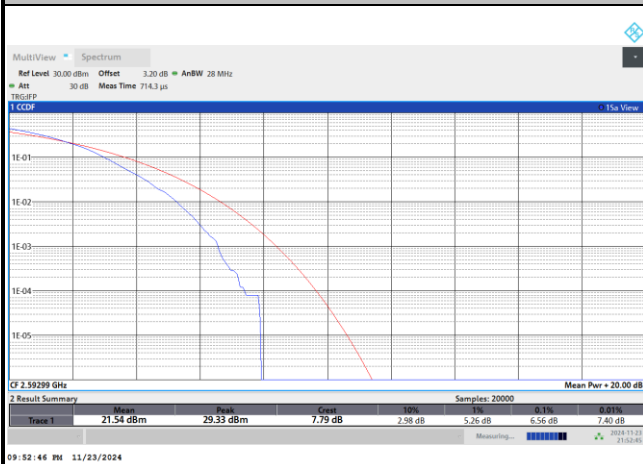
## 16QAM



## 64QAM



## 256QAM



**26dB Bandwidth**

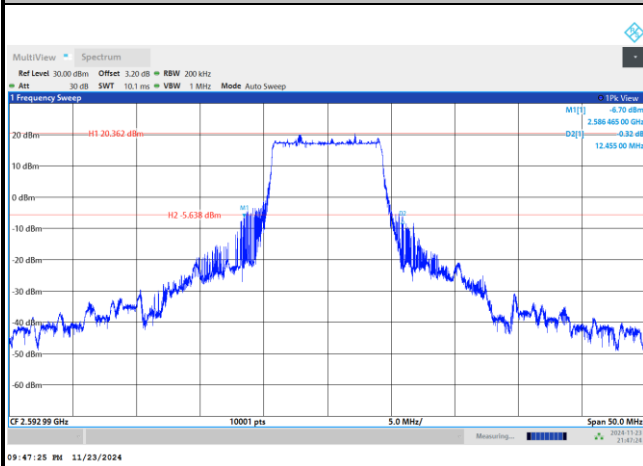
| Mode      | FR1 n41 : 26dB BW(MHz) / DFT-S OFDM |           |           |           |           |           |           |           |
|-----------|-------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| BW        | 10MHz                               | 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 | 12.45                               | 18.15     | 23.04     | -         | 32.07     | 41.86     | 51.02     | 65.64     |
| BW        | 70MHz                               | 80MHz     | 90MHz     | 100MHz    |           |           |           |           |
| Mod.      | PI/2 BPSK                           | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK |           |           |           |           |
| Middle CH | 72.57                               | 83.33     | 93.63     | 104.07    |           |           |           |           |

| Mode      | FR1 n41 : 26dB BW(MHz) / CP OFDM |        |       |        |       |        |        |        |
|-----------|----------------------------------|--------|-------|--------|-------|--------|--------|--------|
| BW        | 10MHz                            |        | 15MHz |        | 20MHz |        | 25MHz  |        |
| Mod.      | QPSK                             | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | 11.87                            | 12.42  | 18.96 | 18.95  | 23.63 | 22.39  | -      | -      |
| Mod.      | 64QAM                            | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | 12.67                            | 12.68  | 17.25 | 15.97  | 24.28 | 23.14  | -      | -      |
| BW        | 30MHz                            |        | 40MHz |        | 50MHz |        | 60MHz  |        |
| Mod.      | QPSK                             | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | 34.00                            | 34.18  | 43.18 | 45.47  | 52.59 | 51.75  | 65.54  | 65.62  |
| Mod.      | 64QAM                            | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | 33.29                            | 33.22  | 43.93 | 43.92  | 53.92 | 51.94  | 64.03  | 63.97  |
| BW        | 70MHz                            |        | 80MHz |        | 90MHz |        | 100MHz |        |
| Mod.      | QPSK                             | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | 74.62                            | 76.72  | 82.76 | 83.21  | 93.11 | 95.46  | 105.15 | 104.18 |
| Mod.      | 64QAM                            | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | 72.84                            | 75.31  | 83.16 | 83.65  | 96.64 | 94.41  | 104.51 | 103.73 |



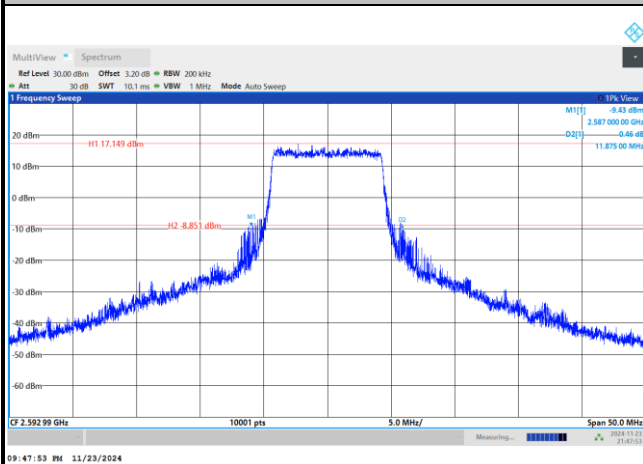
## FR1 n41 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

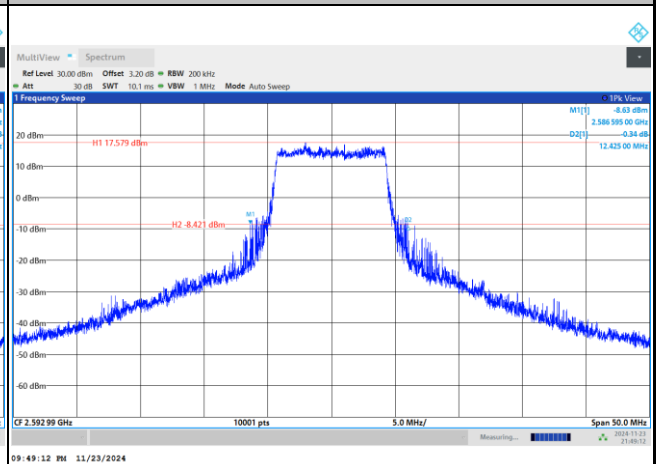


## FR1 n41 / 10MHz / CP OFDM / Middle Channel / Full RB

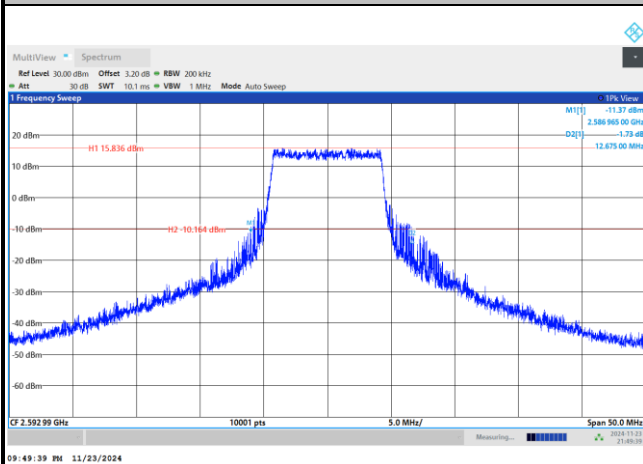
## QPSK



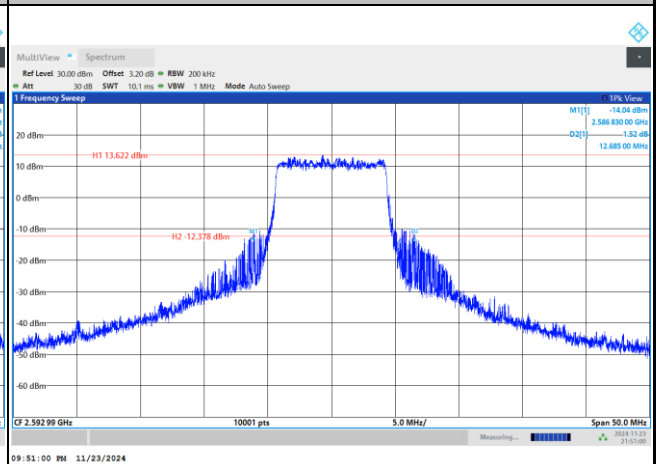
## 16QAM



## 64QAM



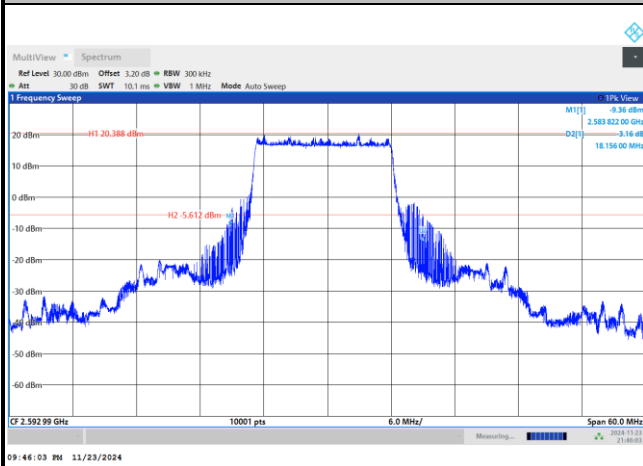
## 256QAM





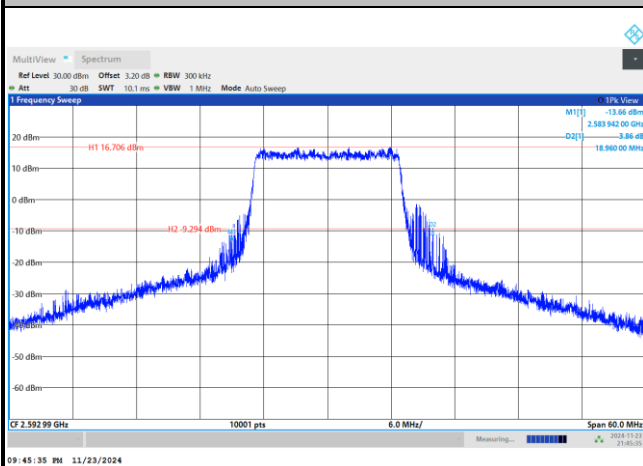
## FR1 n41 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

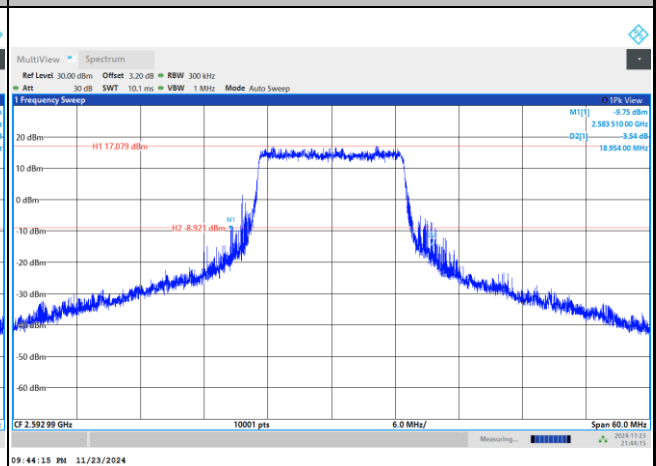


## FR1 n41 / 15MHz / CP OFDM / Middle Channel / Full RB

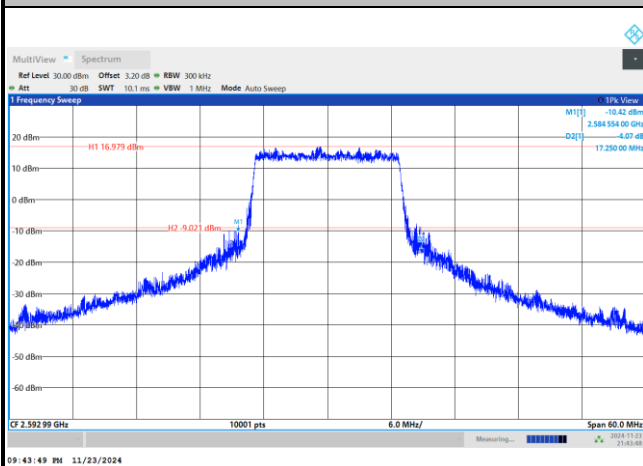
## QPSK



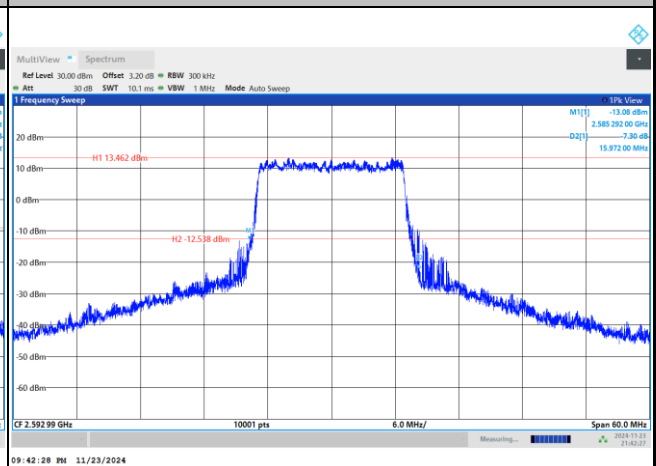
## 16QAM



## 64QAM



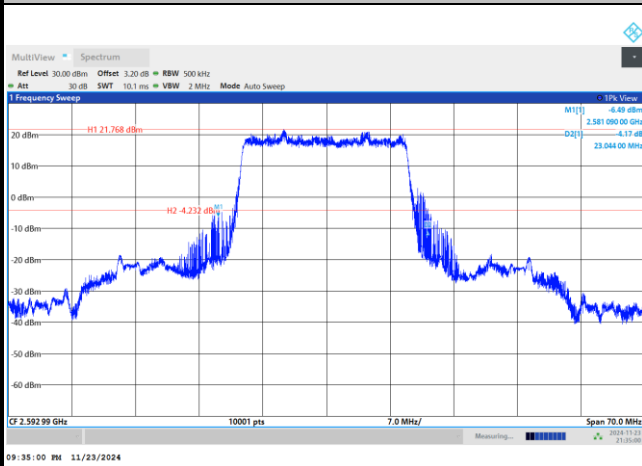
## 256QAM





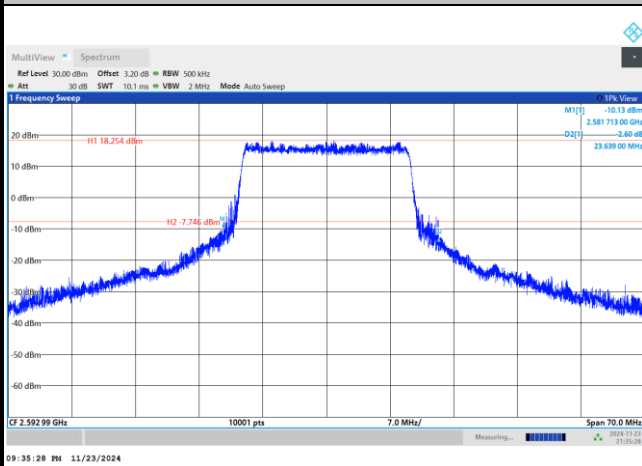
FR1 n41 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

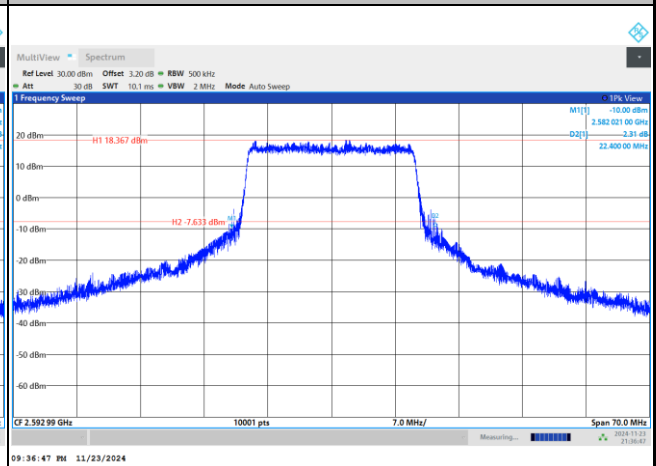


FR1 n41 / 20MHz / CP OFDM / Middle Channel / Full RB

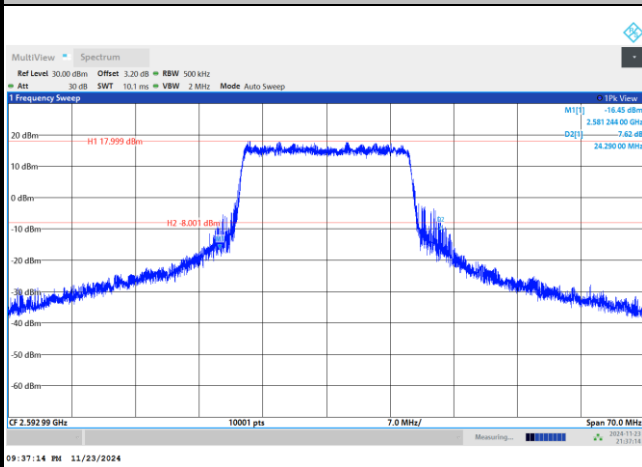
QPSK



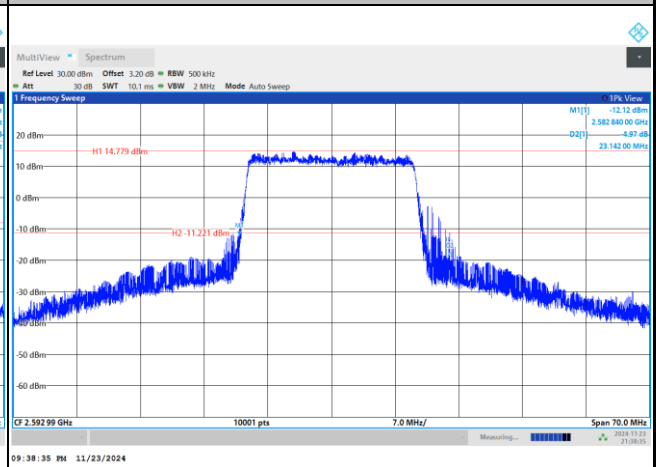
16QAM



64QAM



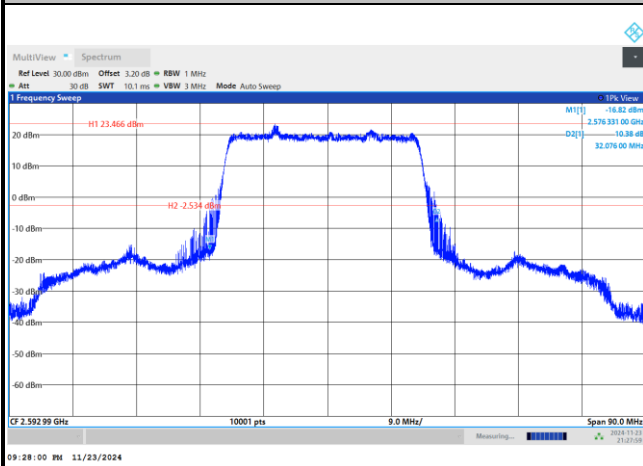
256QAM





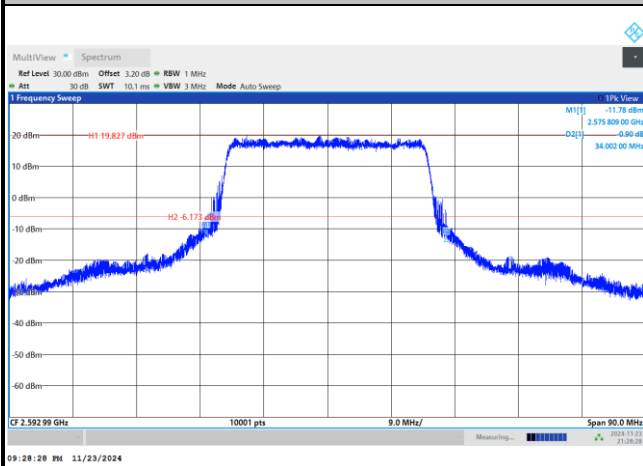
## FR1 n41 / 30MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

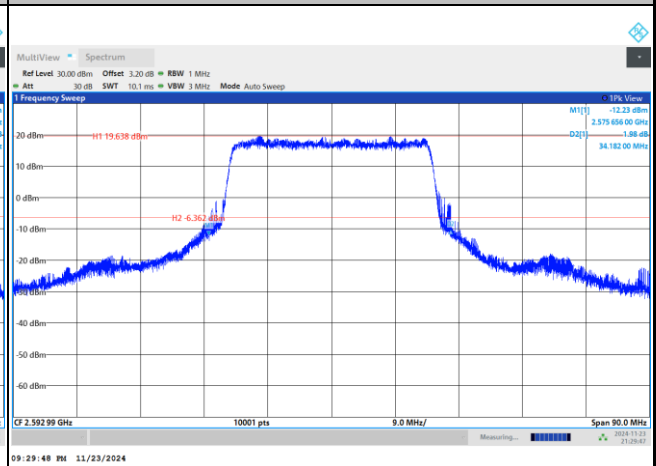


## FR1 n41 / 30MHz / CP OFDM / Middle Channel / Full RB

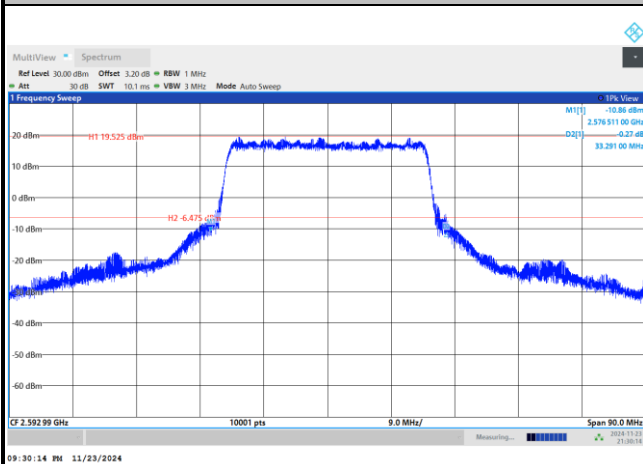
## QPSK



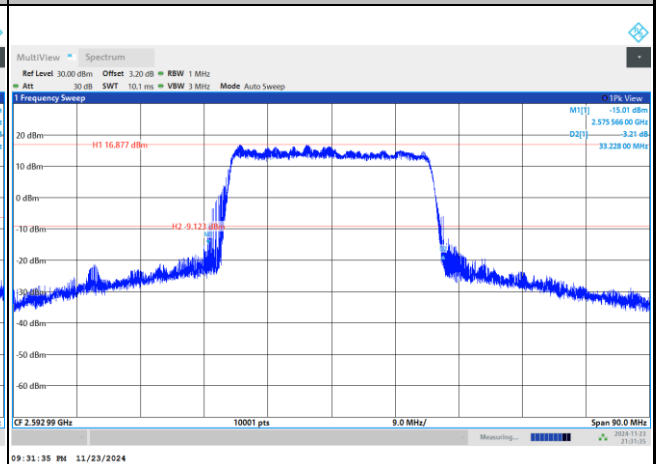
## 16QAM



## 64QAM



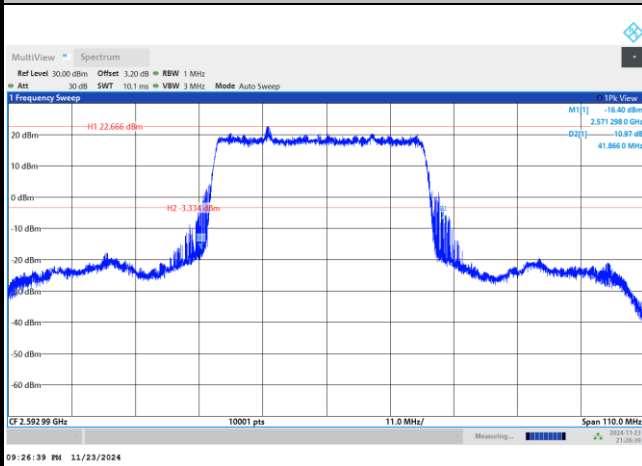
## 256QAM





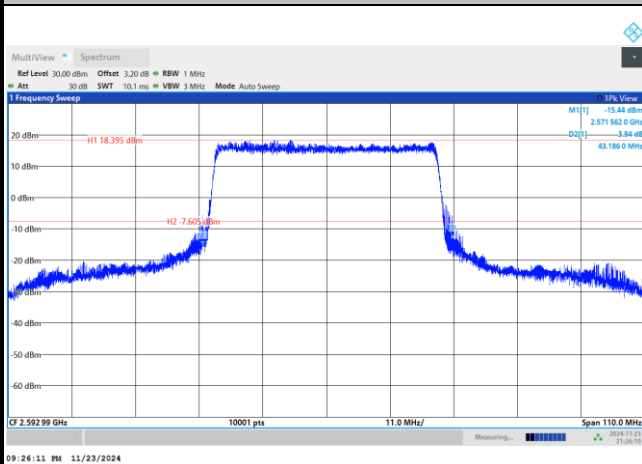
## FR1 n41 / 40MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

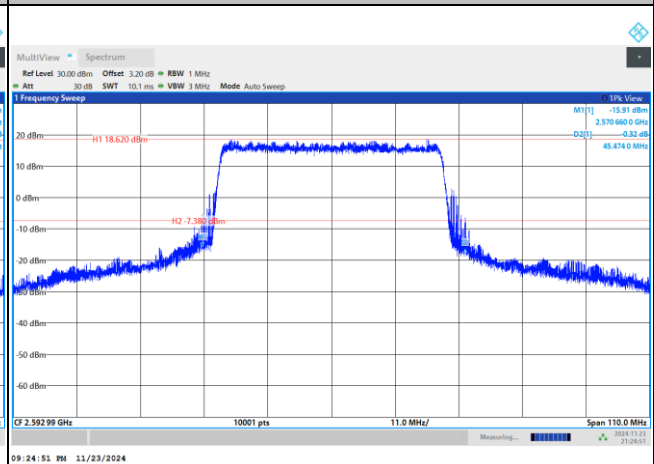


## FR1 n41 / 40MHz / CP OFDM / Middle Channel / Full RB

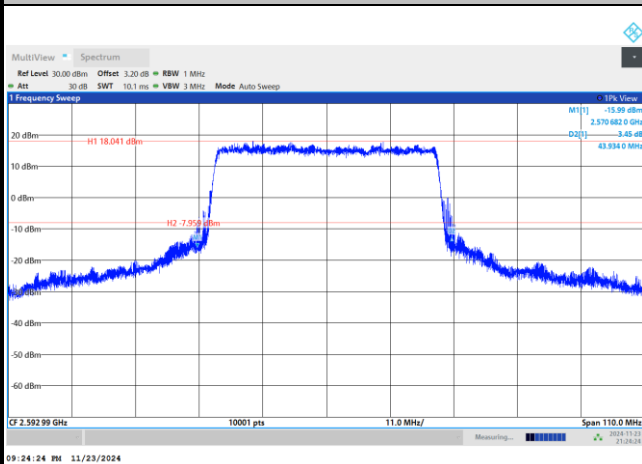
## QPSK



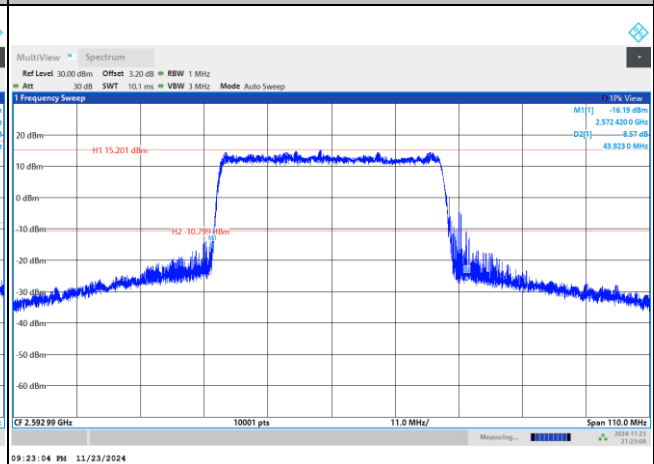
## 16QAM



## 64QAM



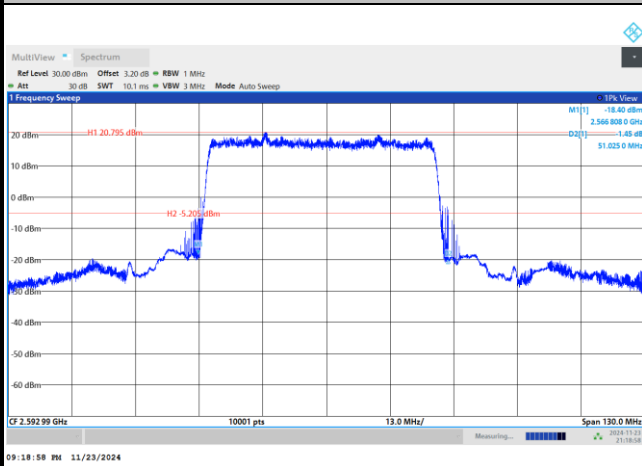
## 256QAM





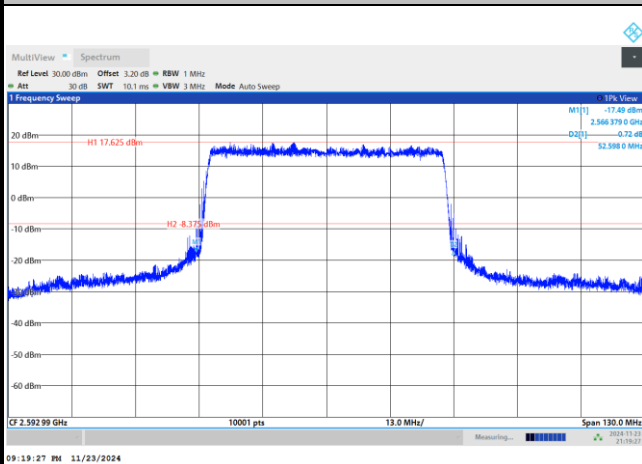
## FR1 n41 / 50MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

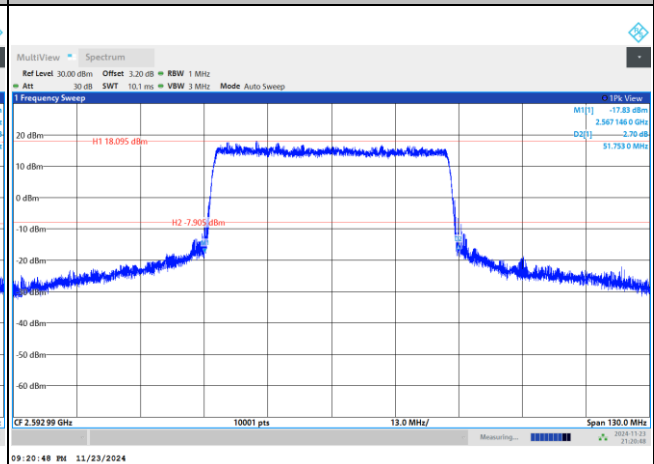


## FR1 n41 / 50MHz / CP OFDM / Middle Channel / Full RB

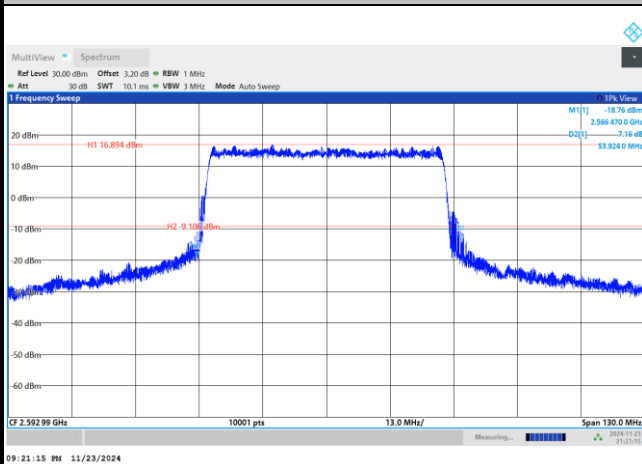
## QPSK



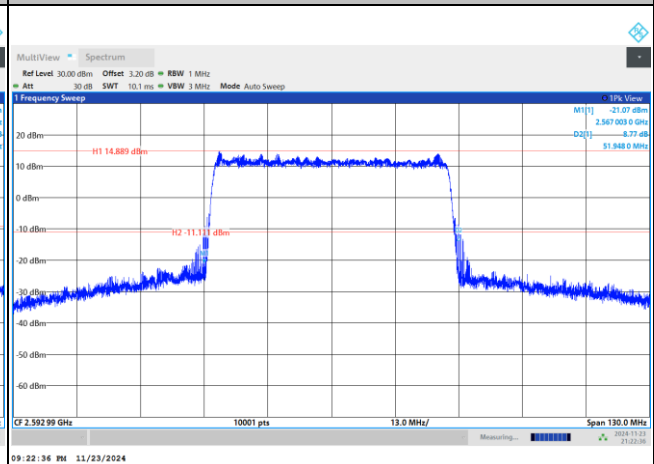
## 16QAM



## 64QAM



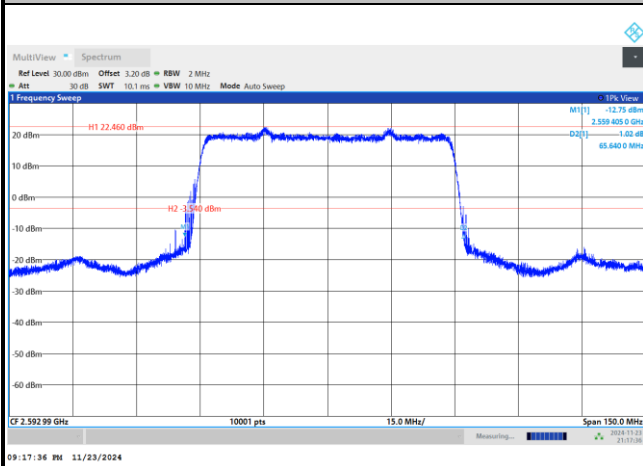
## 256QAM





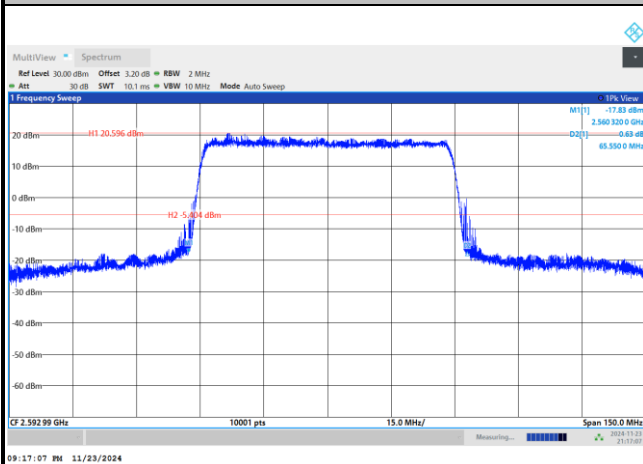
## FR1 n41 / 60MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

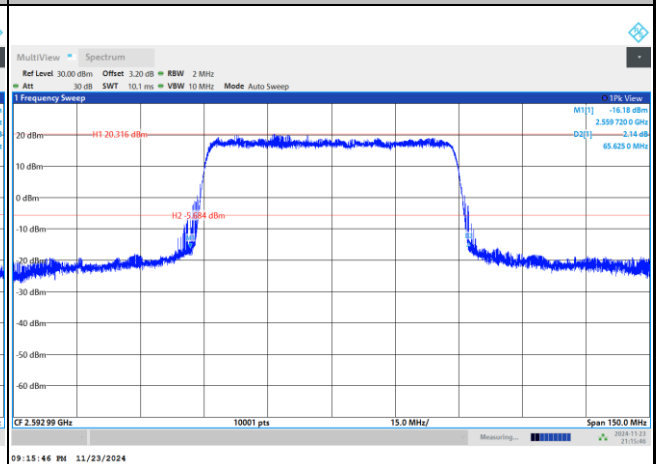


## FR1 n41 / 60MHz / CP OFDM / Middle Channel / Full RB

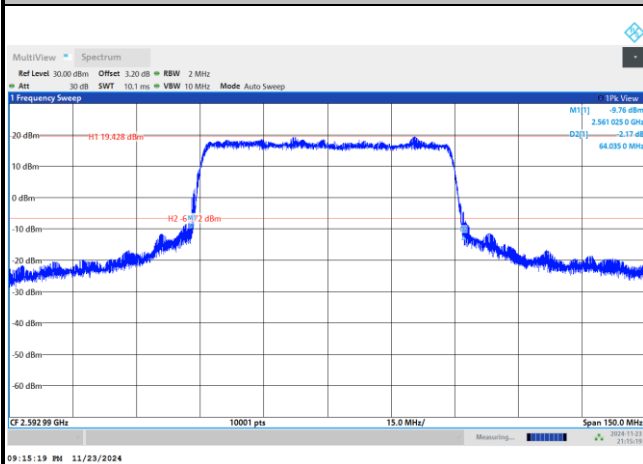
## QPSK



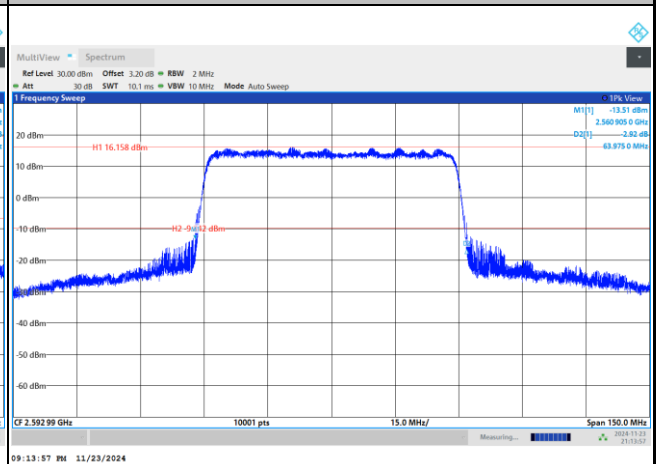
## 16QAM

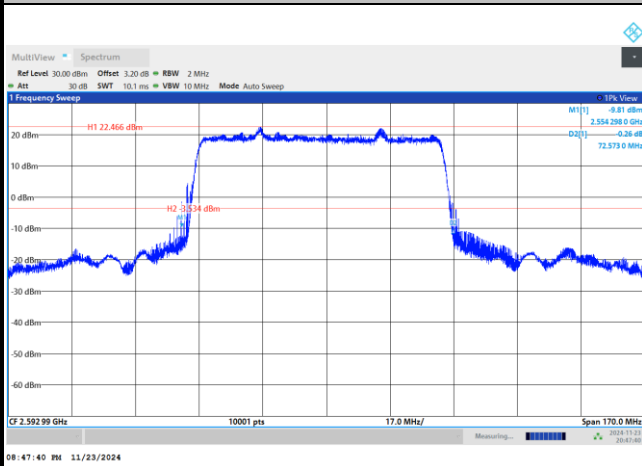
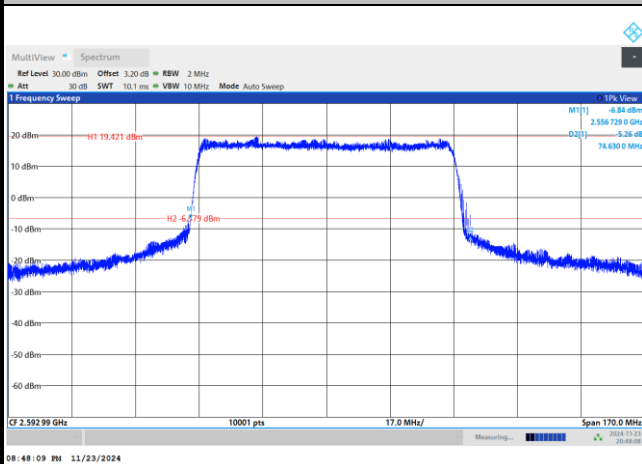
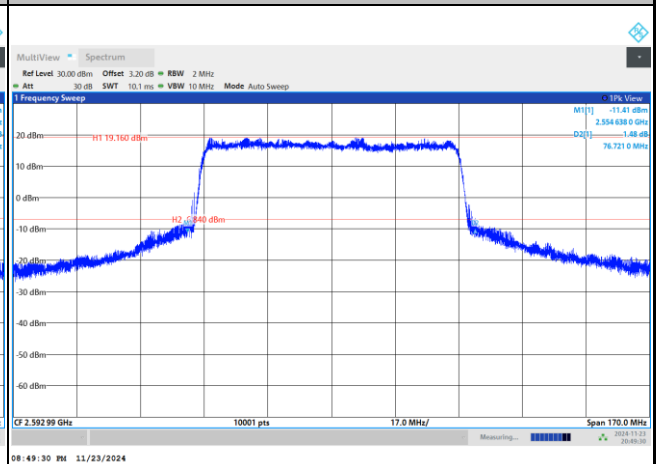
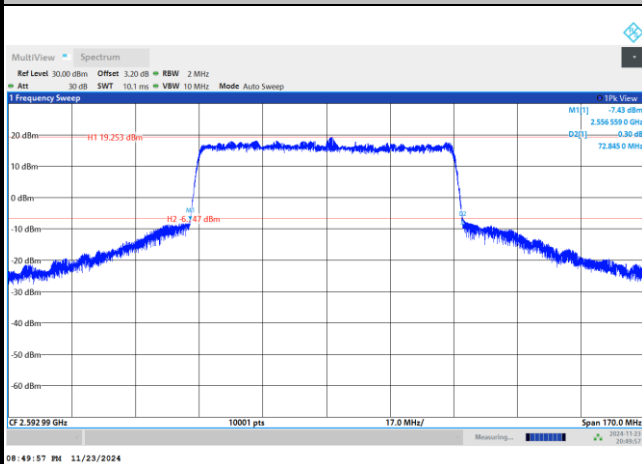
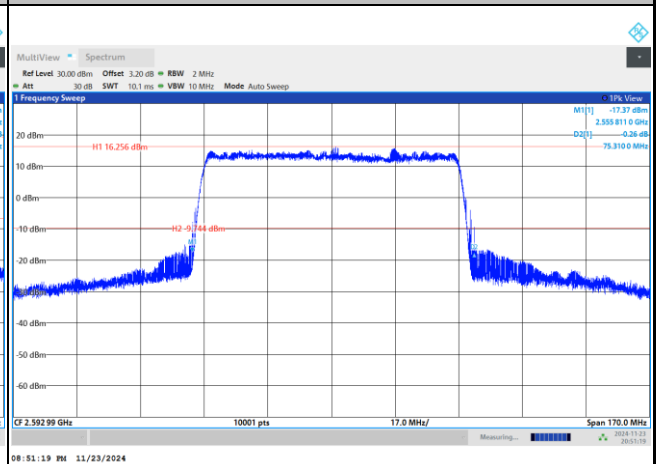


## 64QAM



## 256QAM

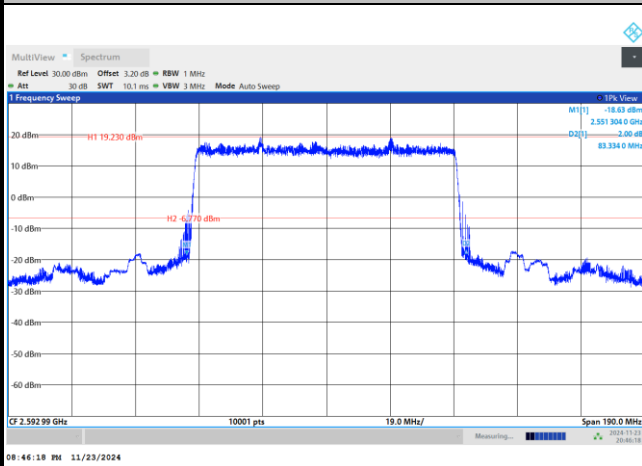


**FR1 n41 / 70MHz / DFT-S OFDM / Middle Channel / Full RB**
**PI/2 BPSK**

**FR1 n41 / 70MHz / CP OFDM / Middle Channel / Full RB**
**QPSK**

**16QAM**

**64QAM**

**256QAM**




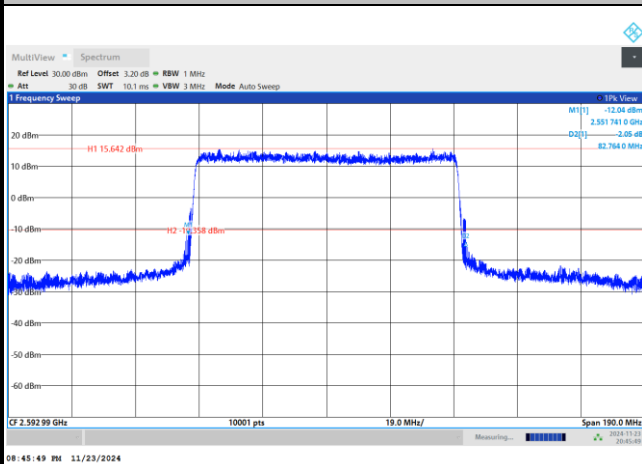
## FR1 n41 / 80MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

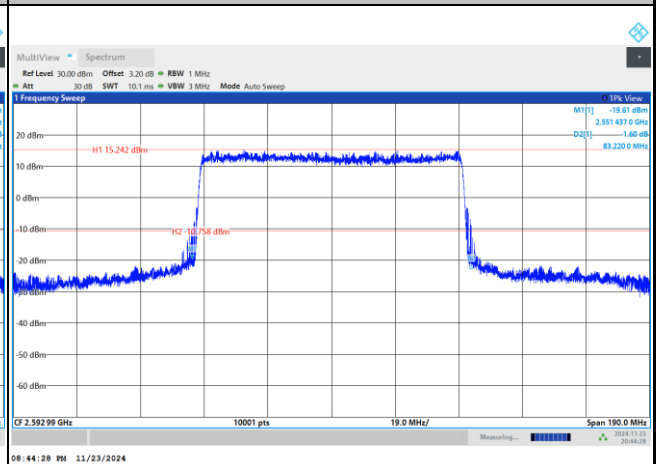


## FR1 n41 / 80MHz / CP OFDM / Middle Channel / Full RB

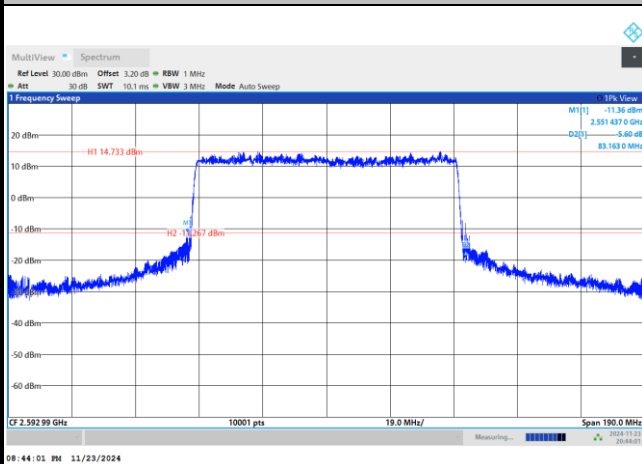
## QPSK



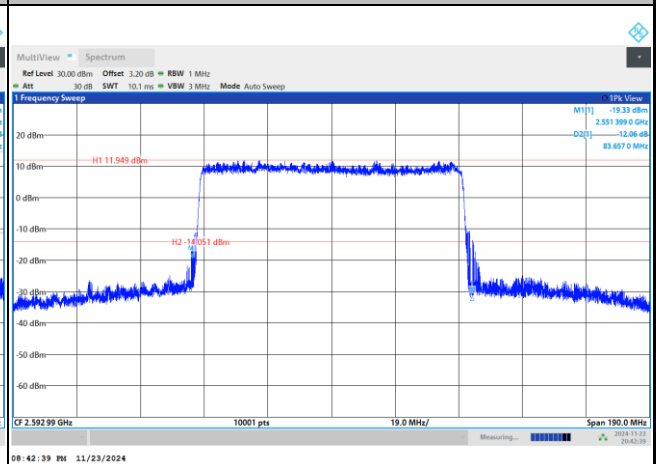
## 16QAM



## 64QAM



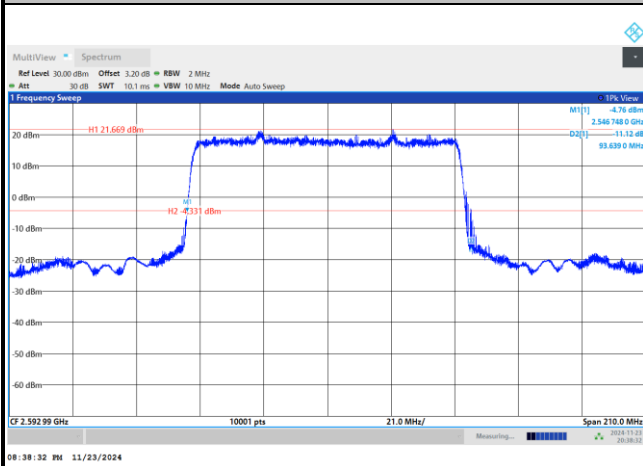
## 256QAM





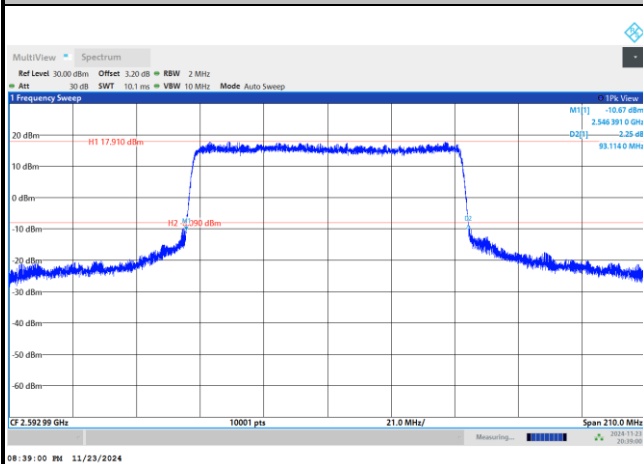
FR1 n41 / 90MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

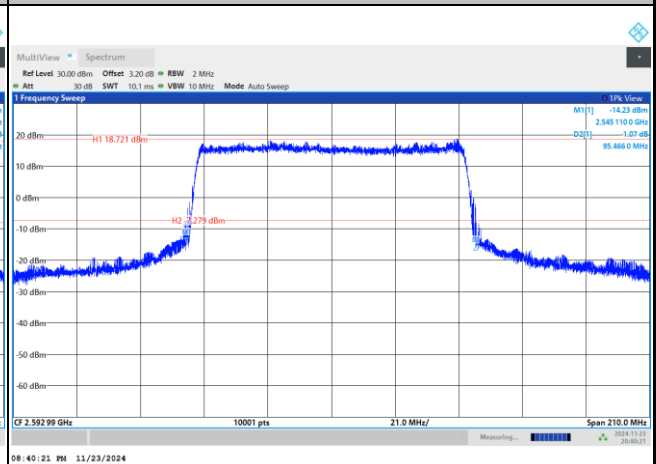


FR1 n41 / 90MHz / CP OFDM / Middle Channel / Full RB

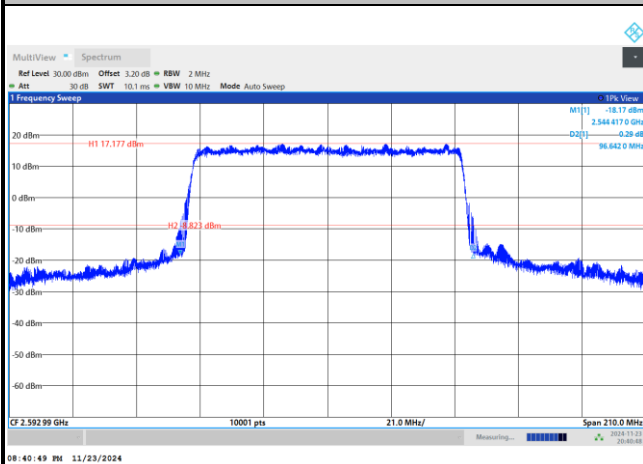
QPSK



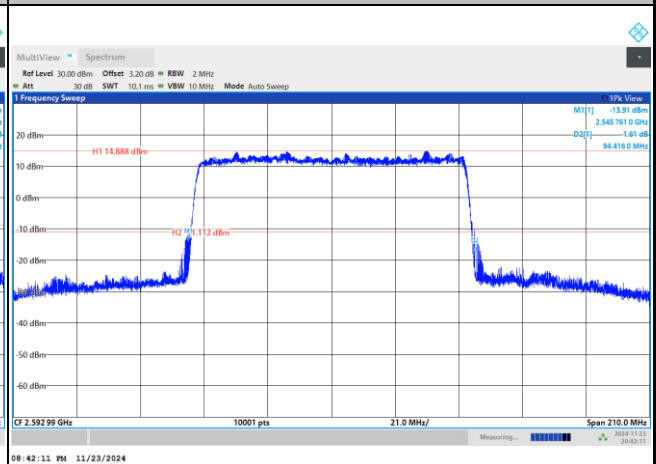
16QAM



64QAM



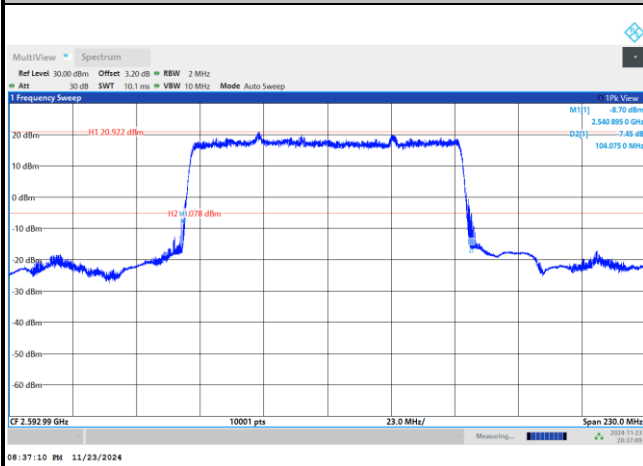
256QAM





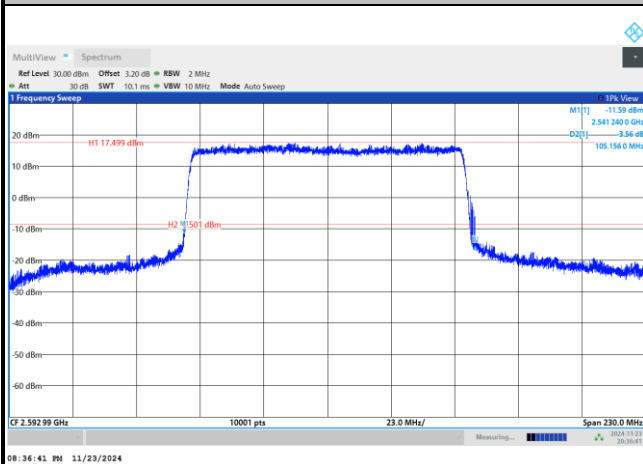
## FR1 n41 / 100MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

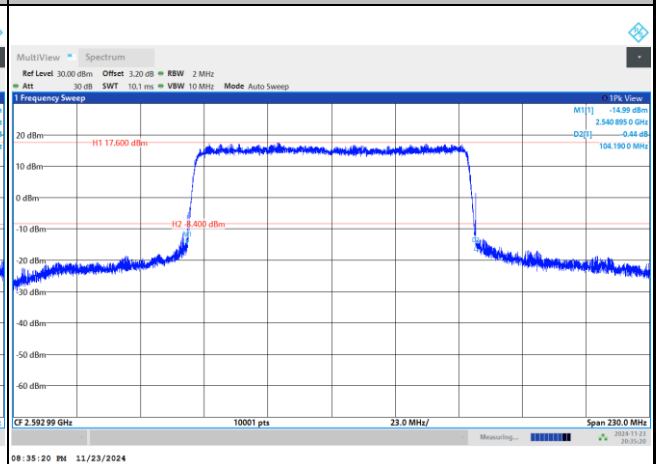


## FR1 n41 / 100MHz / CP OFDM / Middle Channel / Full RB

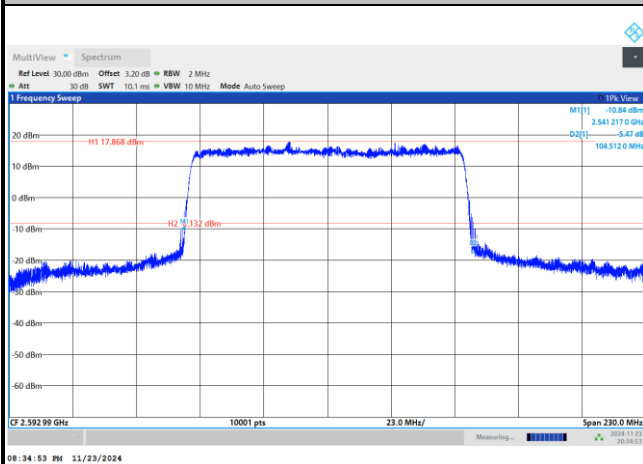
## QPSK



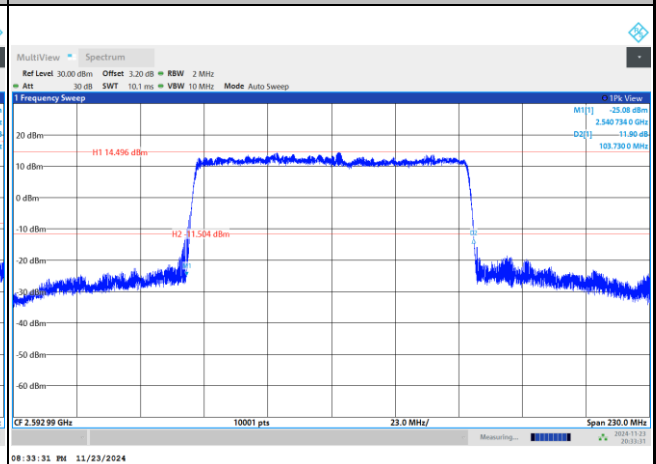
## 16QAM



## 64QAM



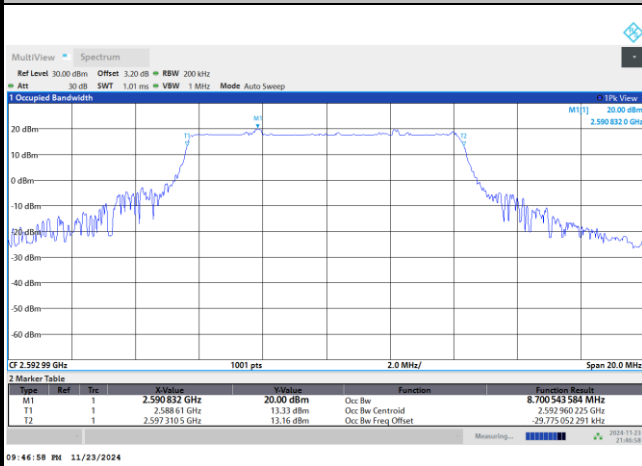
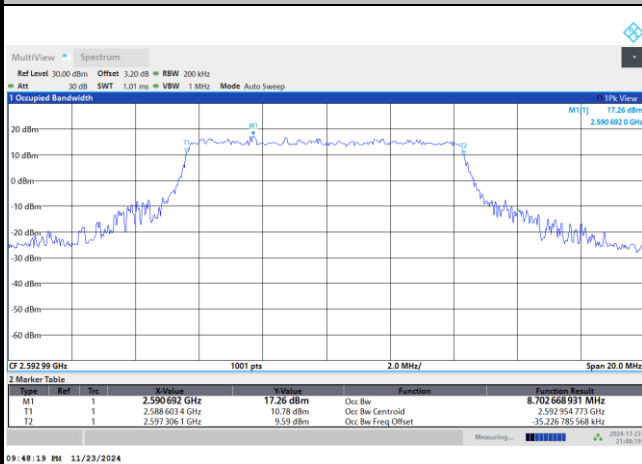
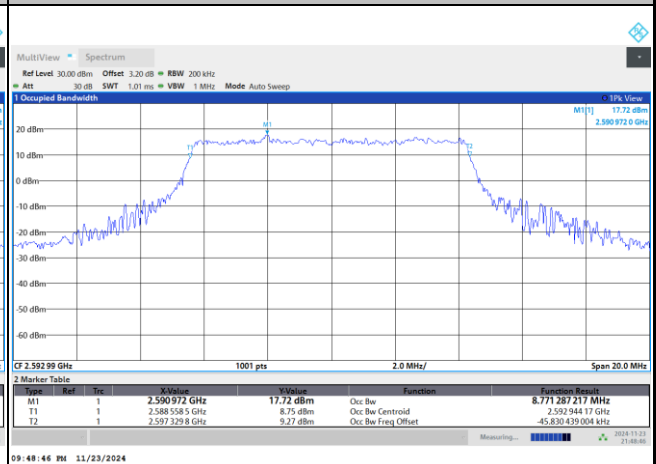
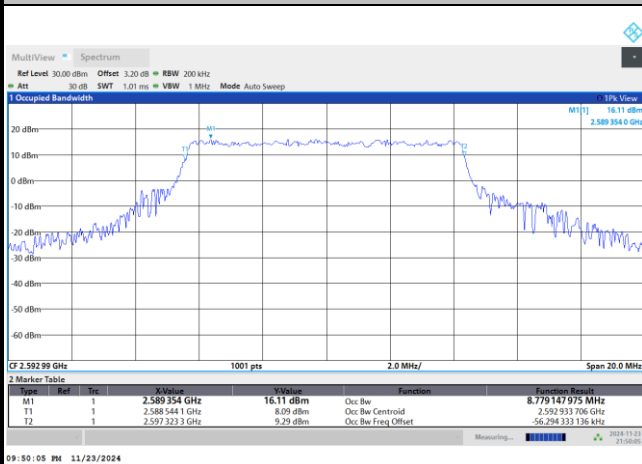
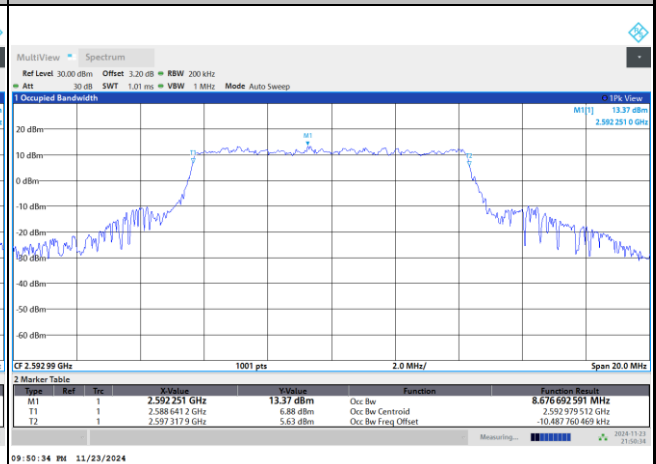
## 256QAM



**Occupied Bandwidth**

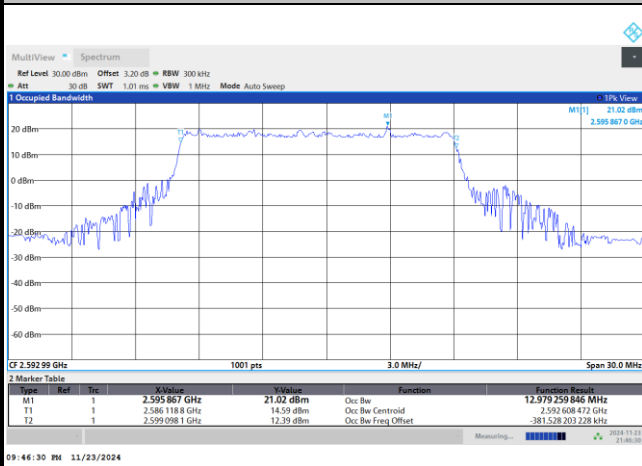
| Mode      | FR1 n41 : OB BW(MHz) / DFT-S OFDM |           |           |           |           |           |           |           |
|-----------|-----------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| BW        | 10MHz                             | 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 | 8.70                              | 12.97     | 18.06     | -         | 27.27     | 36.00     | 45.89     | 58.65     |
| BW        | 70MHz                             | 80MHz     | 90MHz     | 100MHz    |           |           |           |           |
| Mod.      | PI/2 BPSK                         | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK |           |           |           |           |
| Middle CH | 64.98                             | 77.54     | 87.01     | 96.80     |           |           |           |           |

| Mode      | FR1 n41 : OB BW(MHz) / CP OFDM |        |       |        |       |        |        |        |
|-----------|--------------------------------|--------|-------|--------|-------|--------|--------|--------|
| BW        | 10MHz                          |        | 15MHz |        | 20MHz |        | 25MHz  |        |
| Mod.      | QPSK                           | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | 8.70                           | 8.77   | 13.76 | 13.72  | 18.41 | 18.40  | -      | -      |
| Mod.      | 64QAM                          | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | 8.77                           | 8.67   | 13.70 | 13.72  | 18.44 | 18.37  | -      | -      |
| BW        | 30MHz                          |        | 40MHz |        | 50MHz |        | 60MHz  |        |
| Mod.      | QPSK                           | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | 28.29                          | 28.29  | 38.17 | 38.12  | 47.67 | 47.66  | 58.51  | 58.34  |
| Mod.      | 64QAM                          | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | 28.21                          | 28.46  | 38.15 | 38.27  | 47.62 | 47.66  | 58.68  | 58.54  |
| BW        | 70MHz                          |        | 80MHz |        | 90MHz |        | 100MHz |        |
| Mod.      | QPSK                           | 16QAM  | QPSK  | 16QAM  | QPSK  | 16QAM  | QPSK   | 16QAM  |
| Middle CH | 68.16                          | 68.14  | 77.70 | 78.06  | 87.78 | 87.66  | 97.87  | 97.93  |
| Mod.      | 64QAM                          | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM  | 256QAM |
| Middle CH | 68.27                          | 67.88  | 77.95 | 77.76  | 87.79 | 87.98  | 97.58  | 97.87  |

**FR1 n41 / 10MHz / DFT-S OFDM / Middle Channel / Full RB**
**PI/2 BPSK**

**FR1 n41 / 10MHz / CP OFDM / Middle Channel / Full RB**
**QPSK**

**16QAM**

**64QAM**

**256QAM**


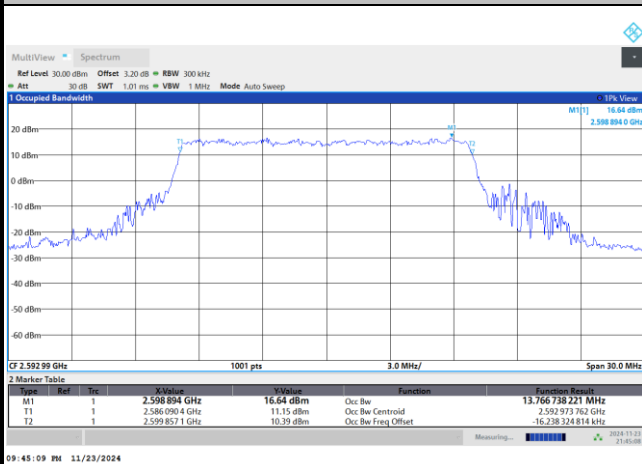
## FR1 n41 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

### PI/2 BPSK

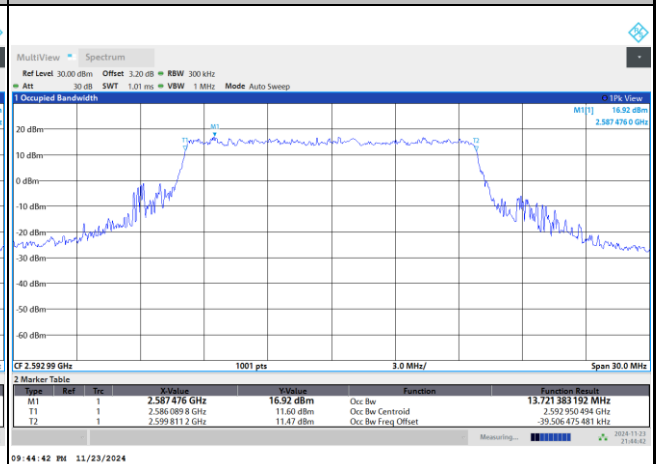


## FR1 n41 / 15MHz / CP OFDM / Middle Channel / Full RB

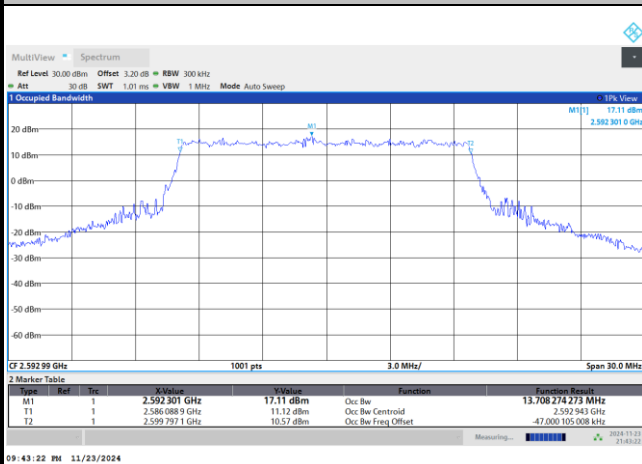
### QPSK



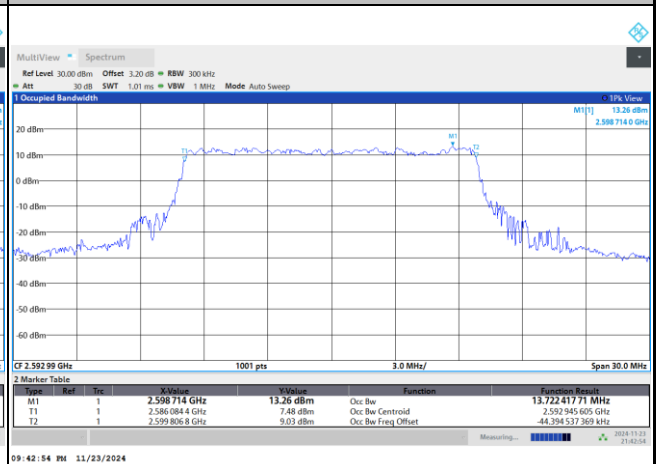
### 16QAM



### 64QAM

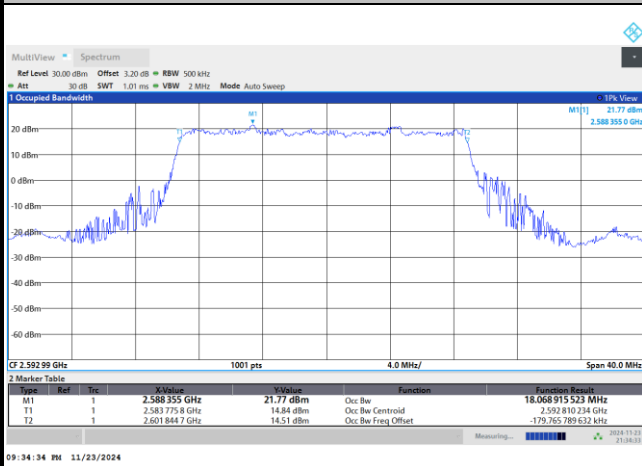


### 256QAM



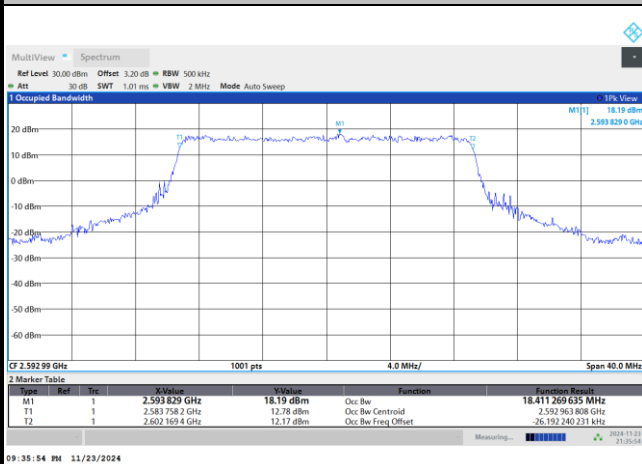
## FR1 n41 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

### PI/2 BPSK

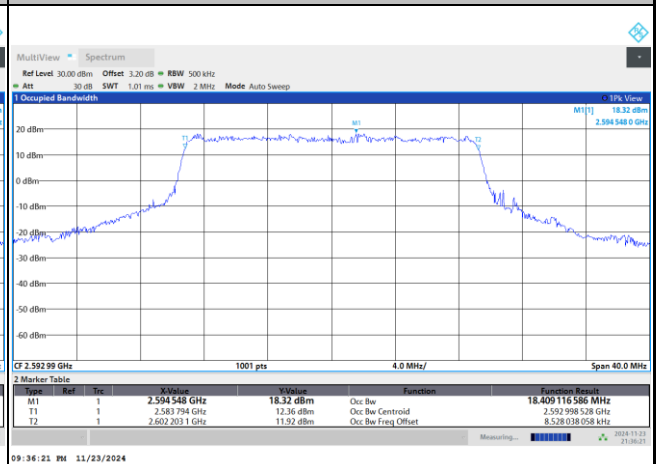


## FR1 n41 / 20MHz / CP OFDM / Middle Channel / Full RB

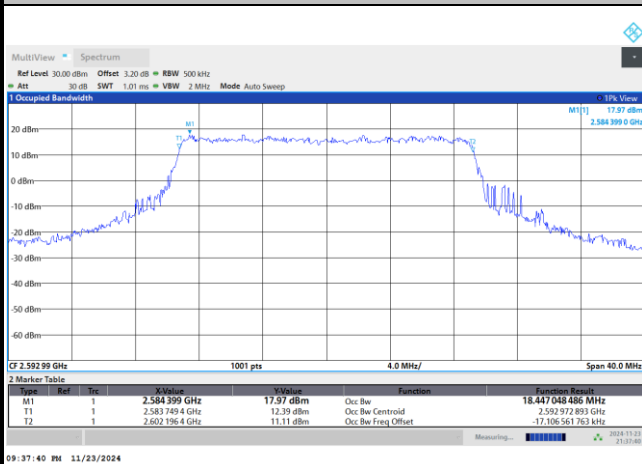
### QPSK



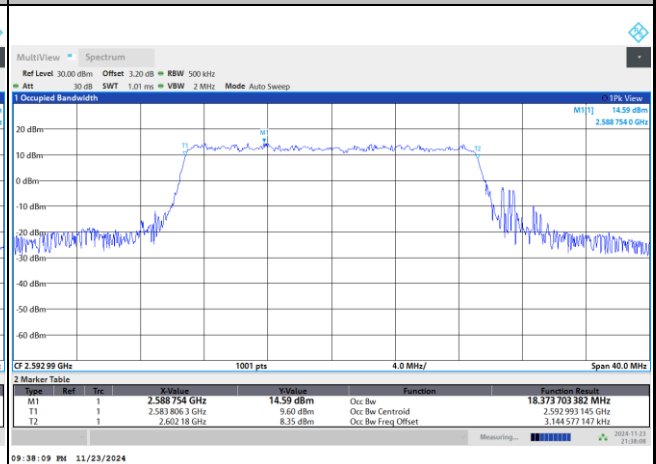
### 16QAM



### 64QAM

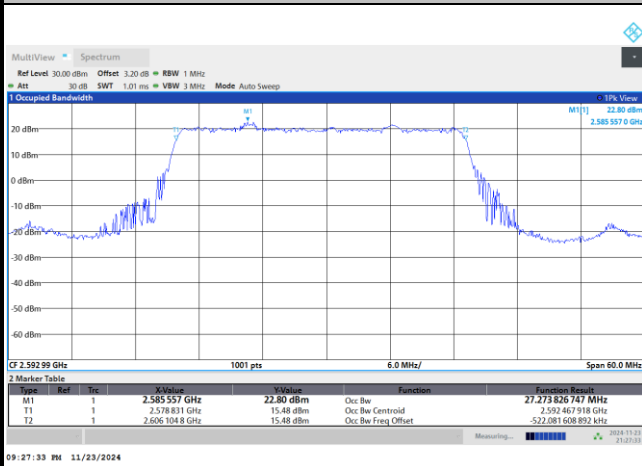


### 256QAM



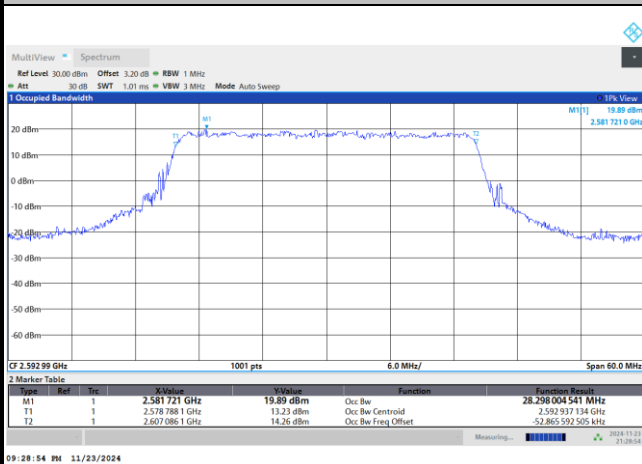
## FR1 n41 / 30MHz / DFT-S OFDM / Middle Channel / Full RB

### PI/2 BPSK

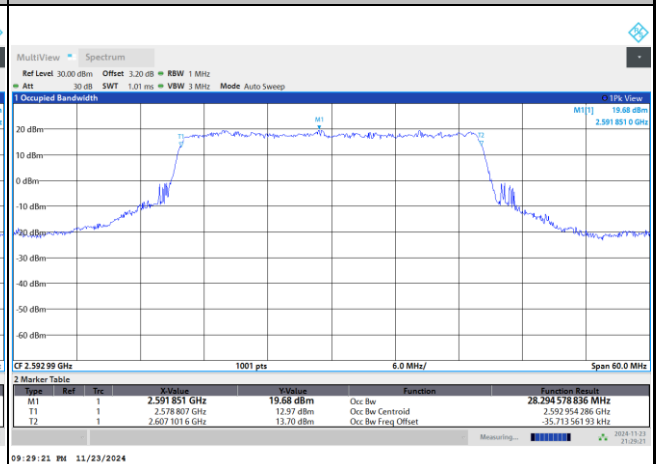


## FR1 n41 / 30MHz / CP OFDM / Middle Channel / Full RB

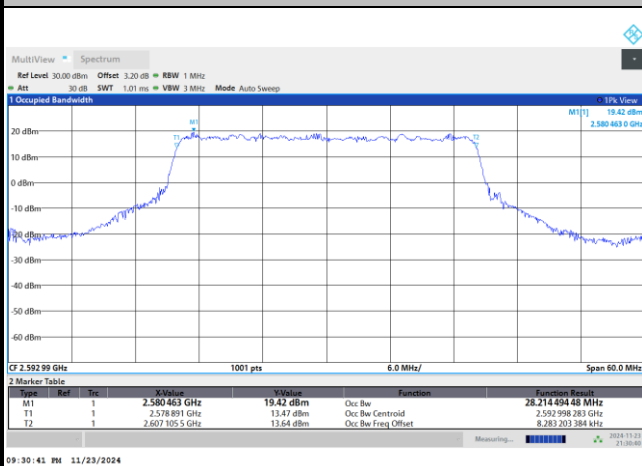
### QPSK



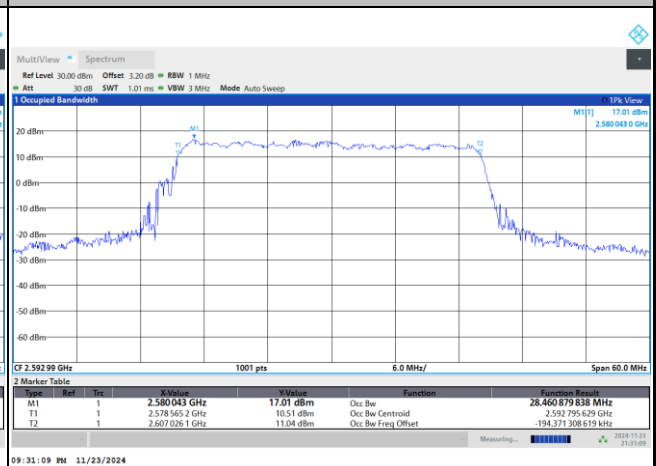
### 16QAM



### 64QAM



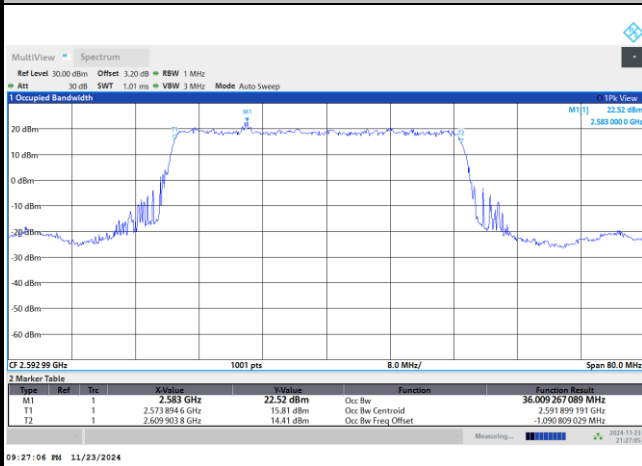
### 256QAM





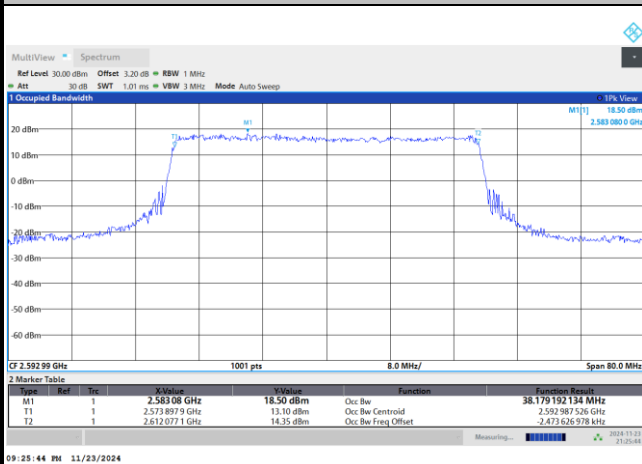
## FR1 n41 / 40MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

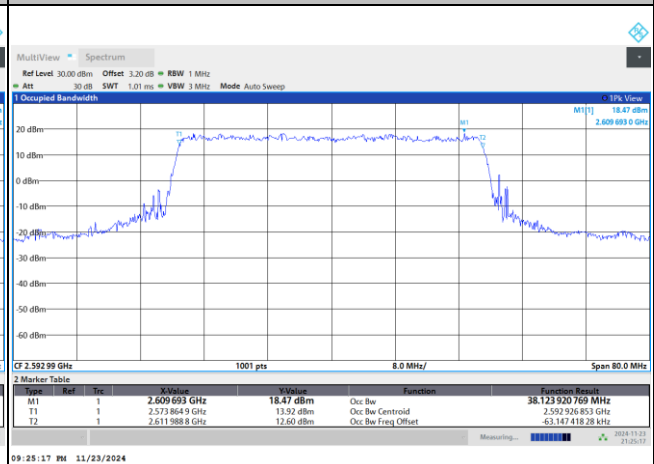


## FR1 n41 / 40MHz / CP OFDM / Middle Channel / Full RB

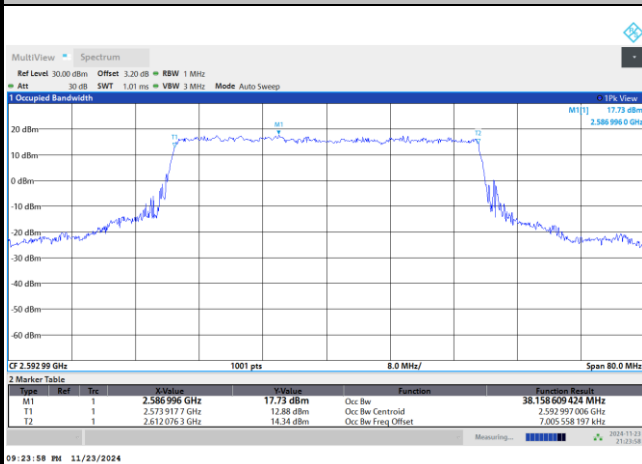
## QPSK



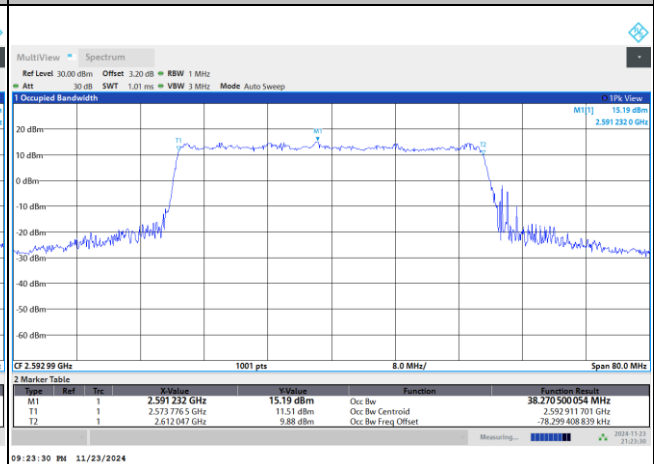
## 16QAM



## 64QAM

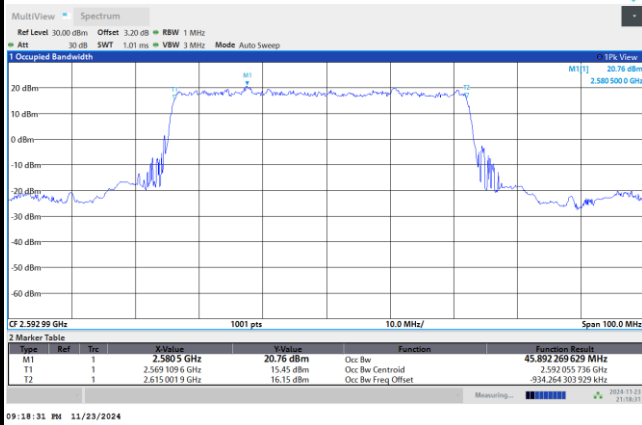


## 256QAM



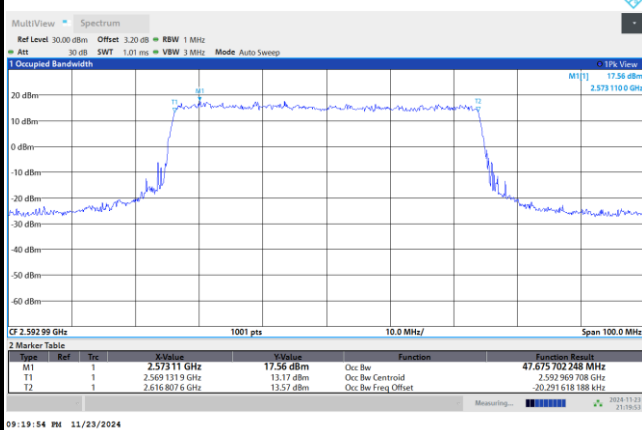
## FR1 n41 / 50MHz / DFT-S OFDM / Middle Channel / Full RB

### PI/2 BPSK

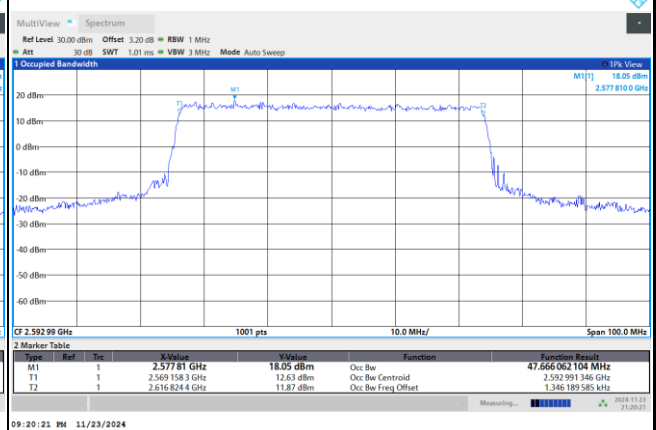


## FR1 n41 / 50MHz / CP OFDM / Middle Channel / Full RB

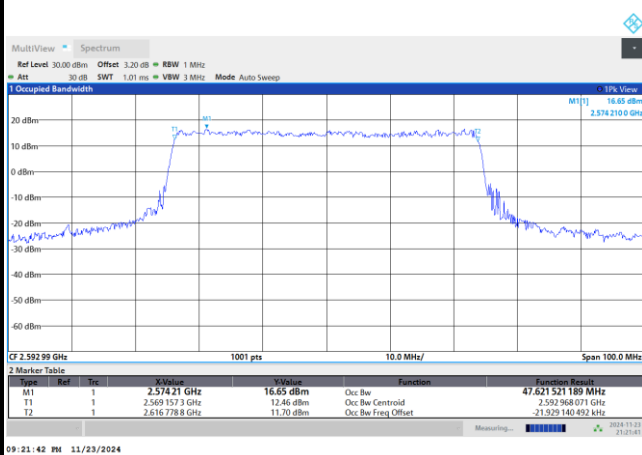
### QPSK



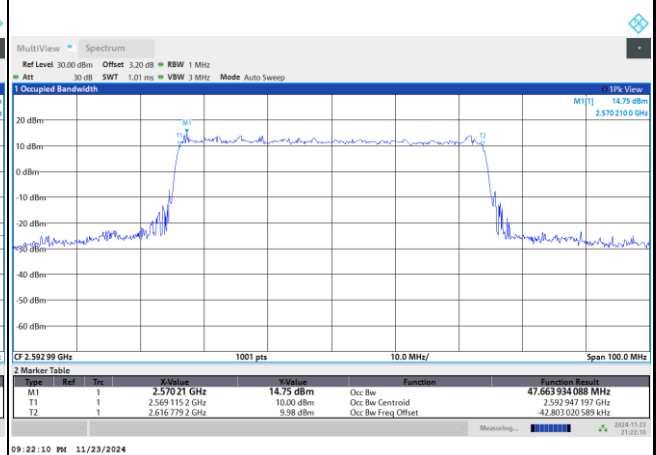
### 16QAM



### 64QAM



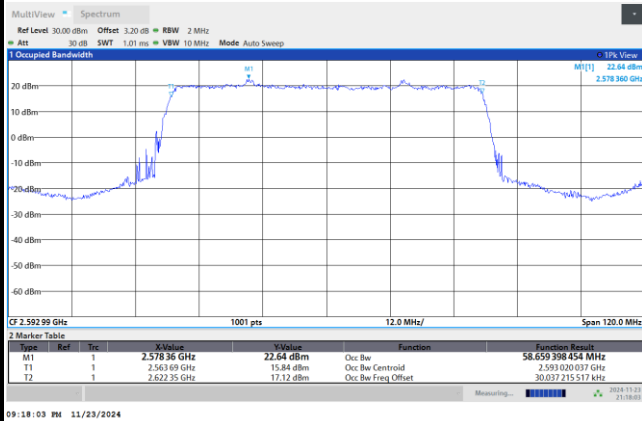
### 256QAM





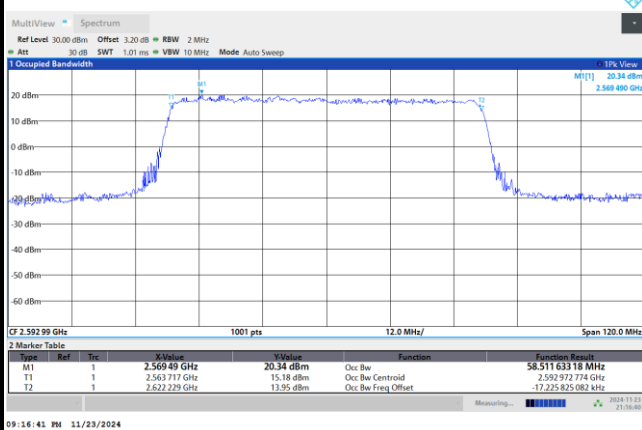
## FR1 n41 / 60MHz / DFT-S OFDM / Middle Channel / Full RB

## PI/2 BPSK

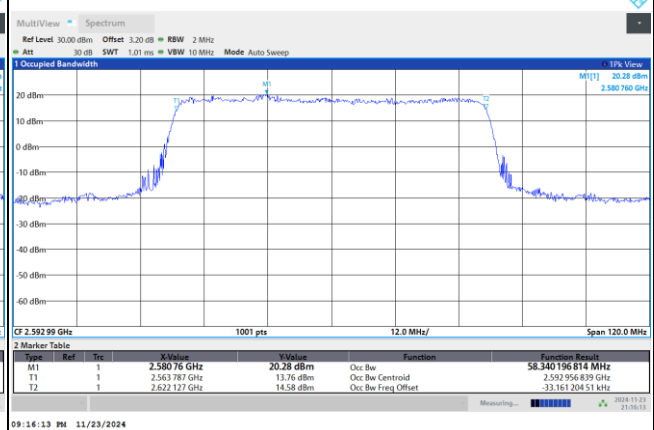


## FR1 n41 / 60MHz / CP OFDM / Middle Channel / Full RB

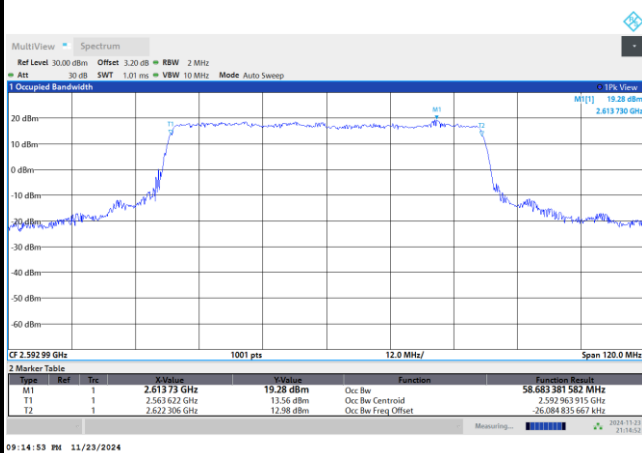
## QPSK



## 16QAM



## 64QAM



## 256QAM

