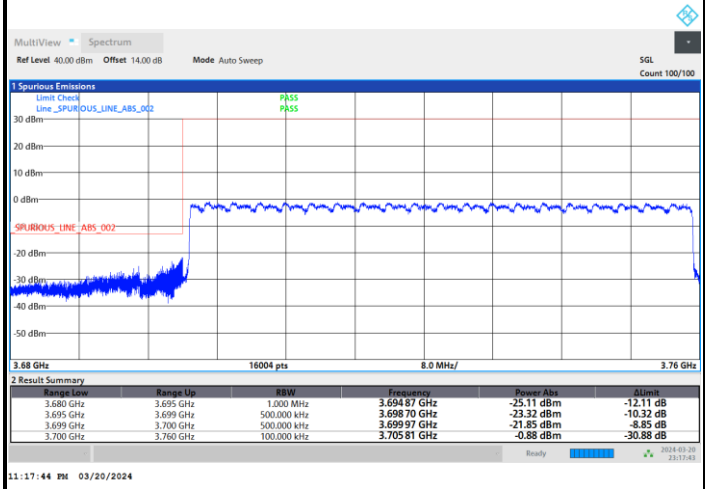
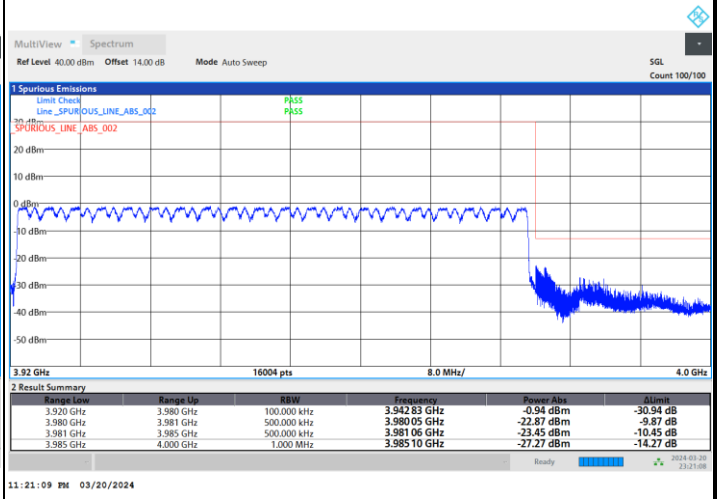
## FR1 n77 / 60MHz / CP OFDM / QPSK

### Lowest Band Edge / Full RB

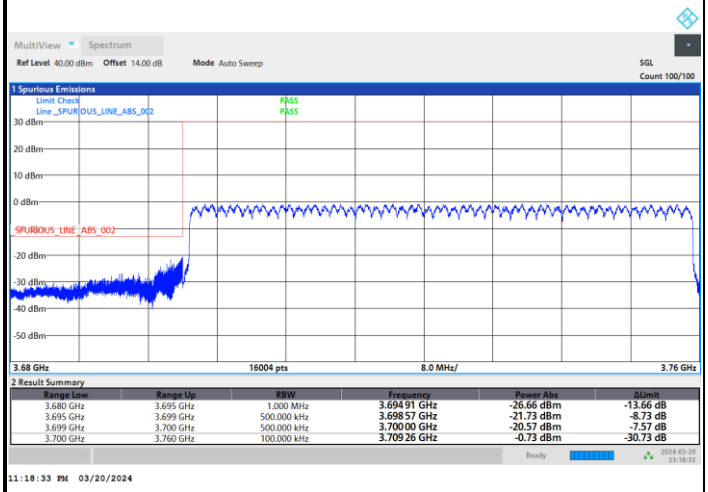



### Highest Band Edge / Full RB

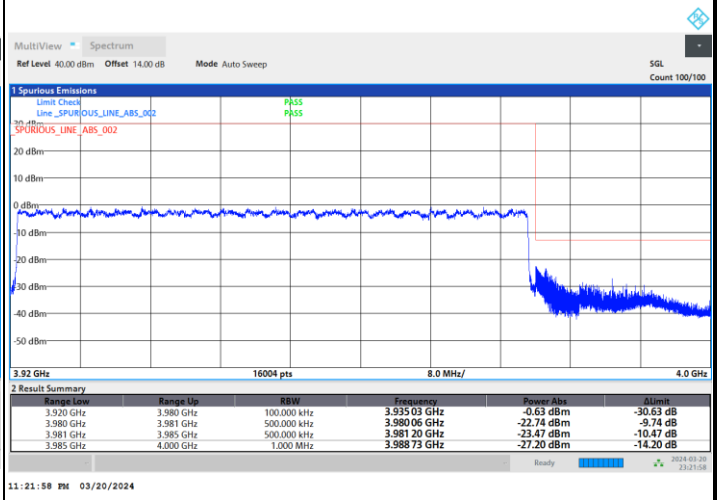



## FR1 n77 / 60MHz / CP OFDM / 16QAM

### Lowest Band Edge / Full RB

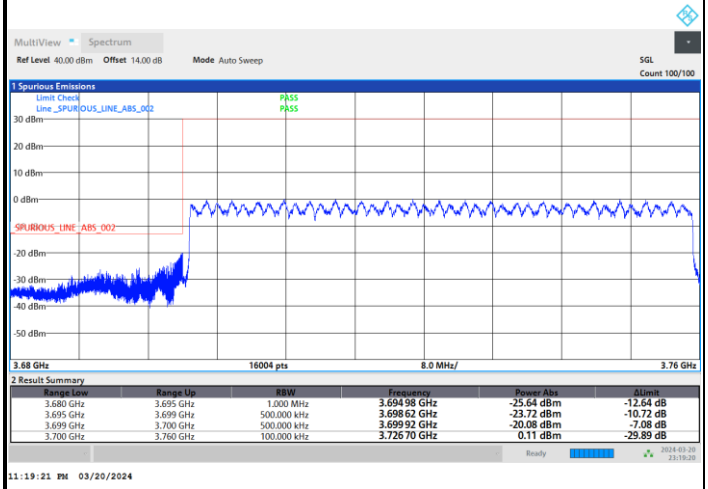



### Highest Band Edge / Full RB

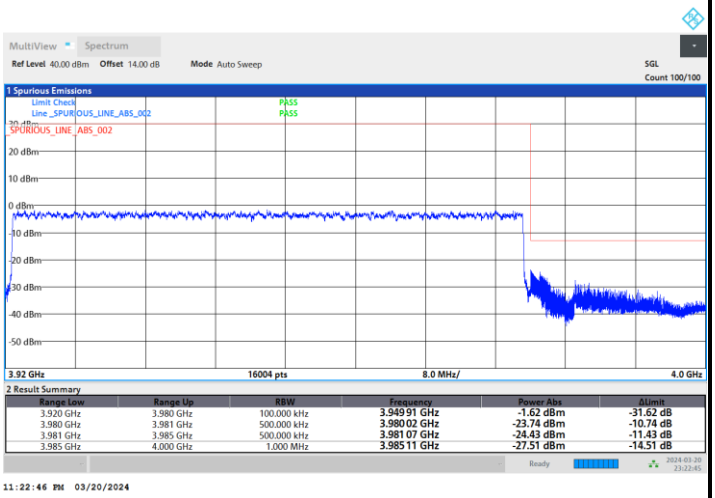


## FR1 n77 / 60MHz / CP OFDM / 64QAM

### Lowest Band Edge / Full RB

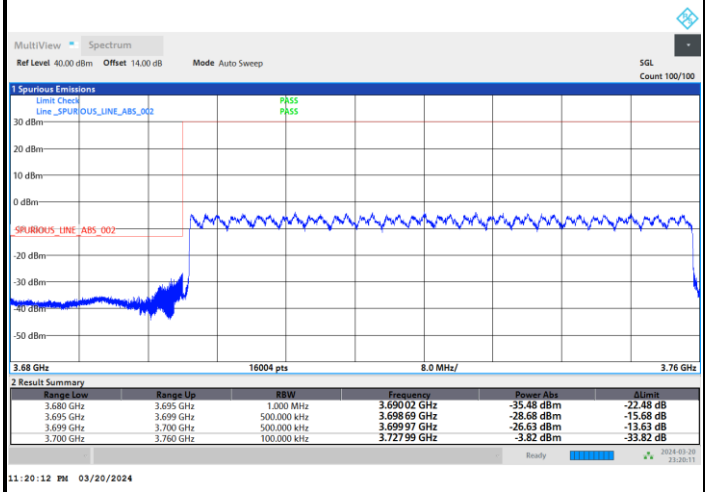



### Highest Band Edge / Full RB

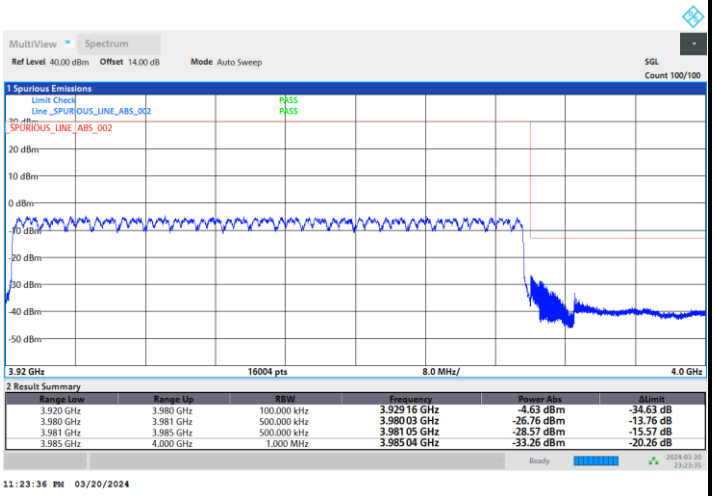



## FR1 n77 / 60MHz / CP OFDM / 256QAM

### Lowest Band Edge / Full RB

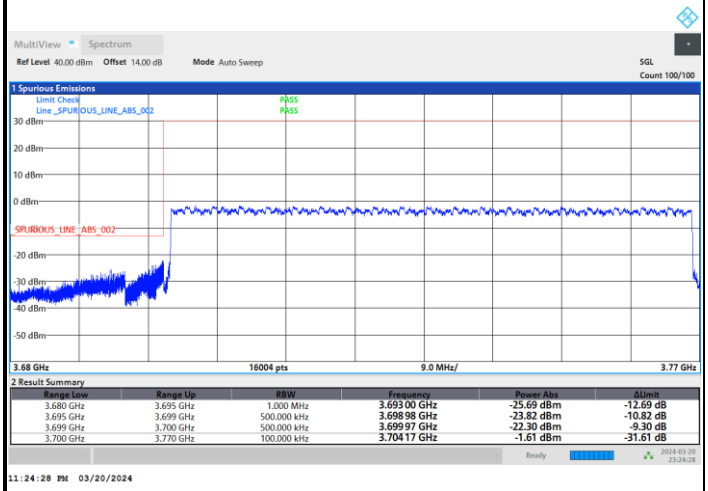



### Highest Band Edge / Full RB

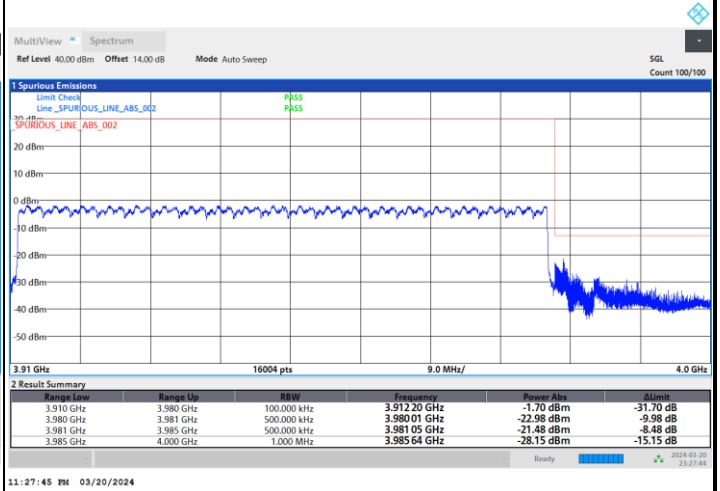


## FR1 n77 / 70MHz / CP OFDM / QPSK

### Lowest Band Edge / Full RB

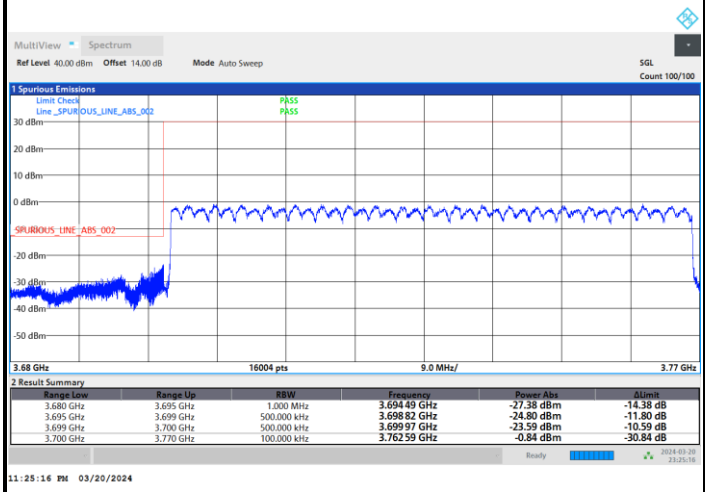



### Highest Band Edge / Full RB

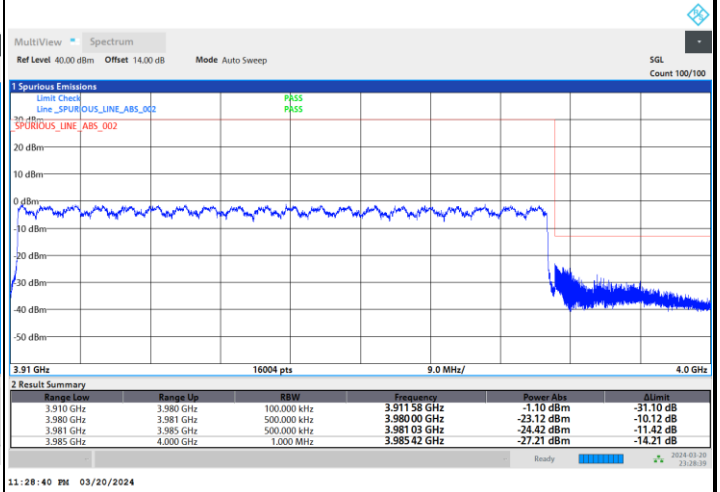



## FR1 n77 / 70MHz / CP OFDM / 16QAM

### Lowest Band Edge / Full RB

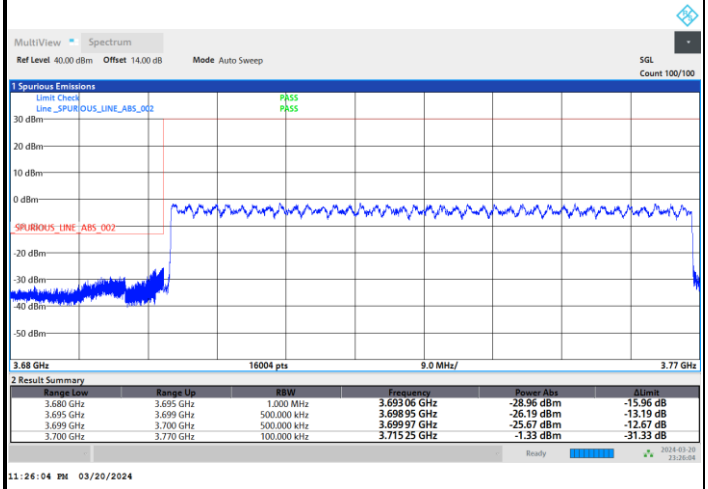



### Highest Band Edge / Full RB

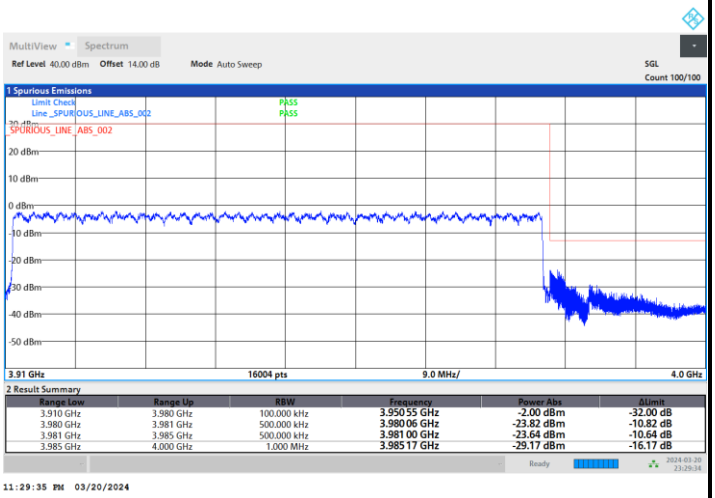


## FR1 n77 / 70MHz / CP OFDM / 64QAM

### Lowest Band Edge / Full RB

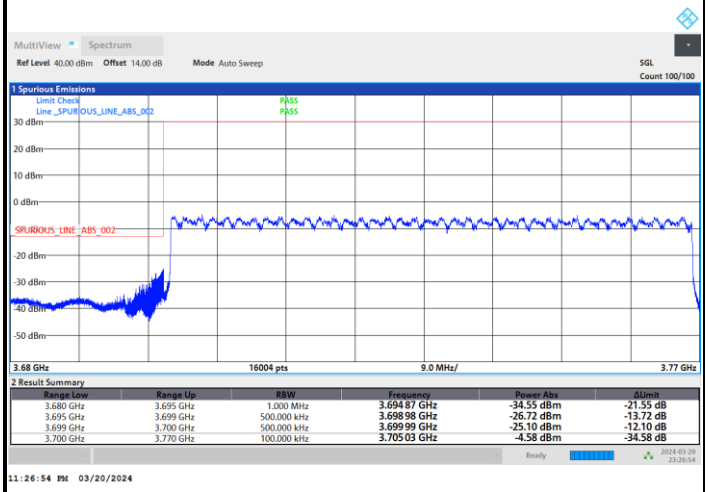



### Highest Band Edge / Full RB

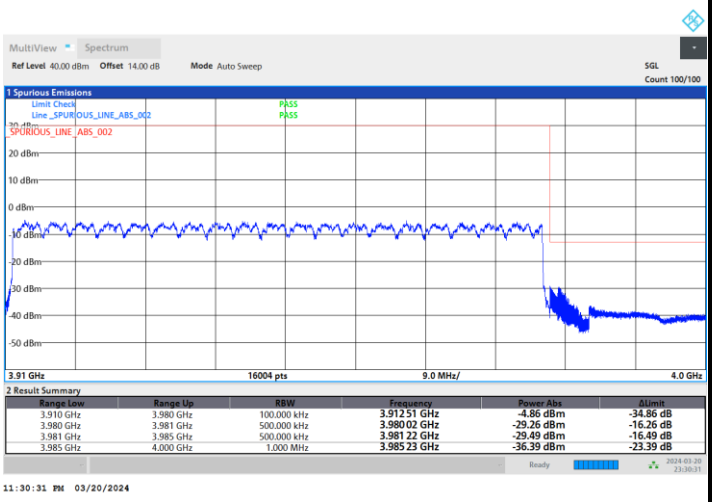



## FR1 n77 / 70MHz / CP OFDM / 256QAM

### Lowest Band Edge / Full RB

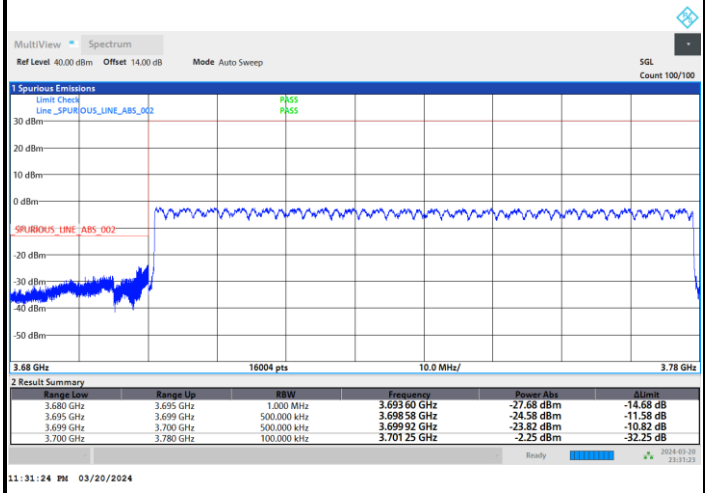



### Highest Band Edge / Full RB

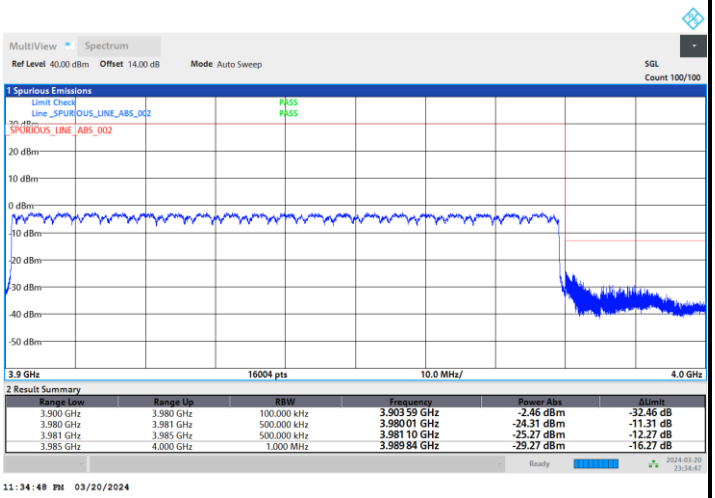


## FR1 n77 / 80MHz / CP OFDM / QPSK

### Lowest Band Edge / Full RB

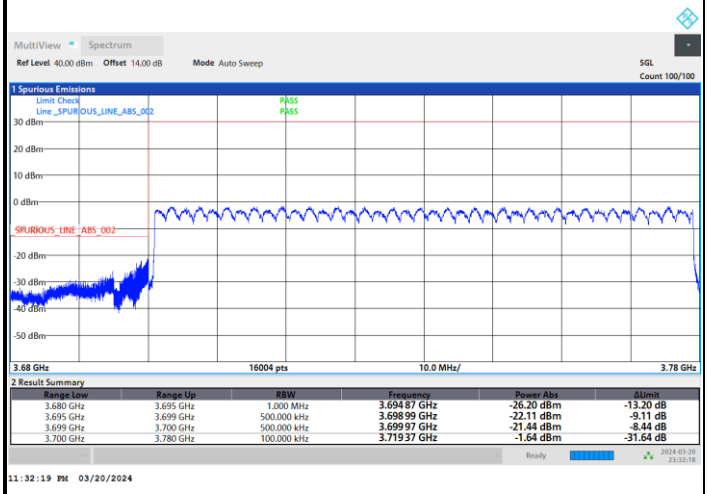



### Highest Band Edge / Full RB

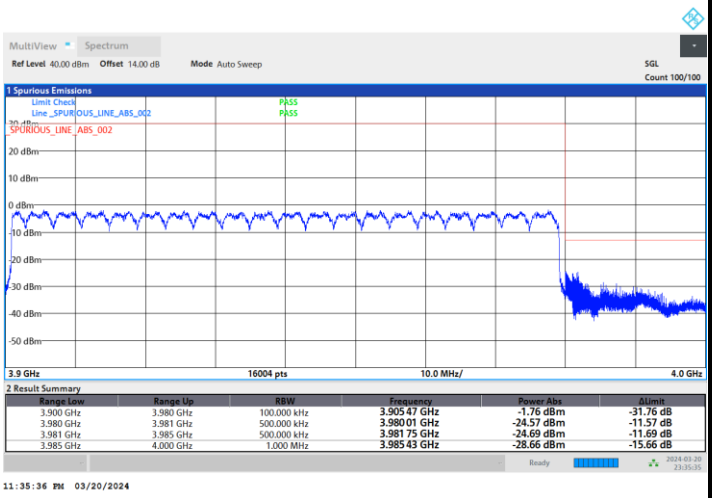


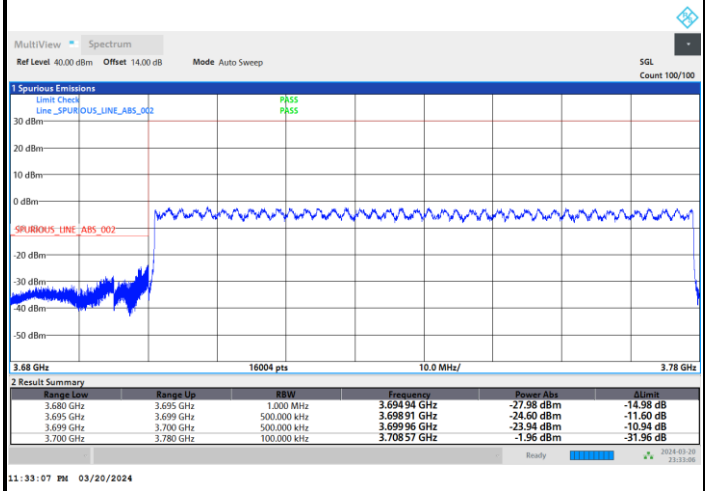
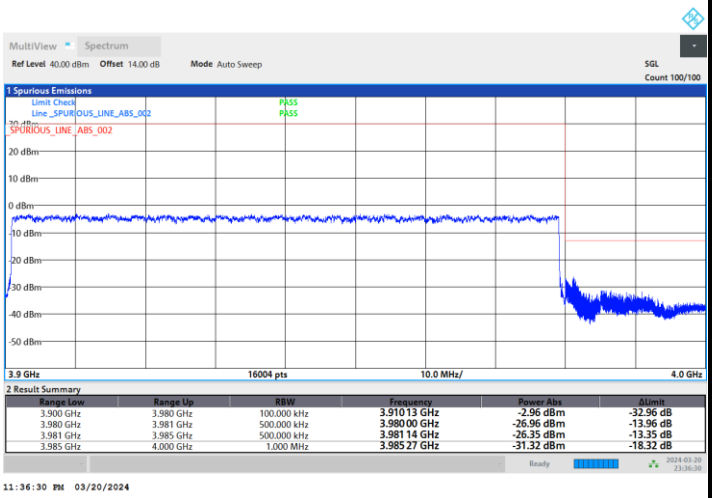

## FR1 n77 / 80MHz / CP OFDM / 16QAM

### Lowest Band Edge / Full RB



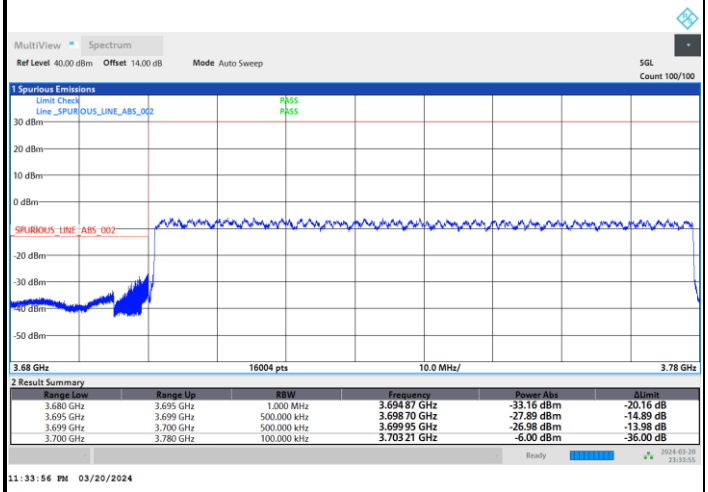
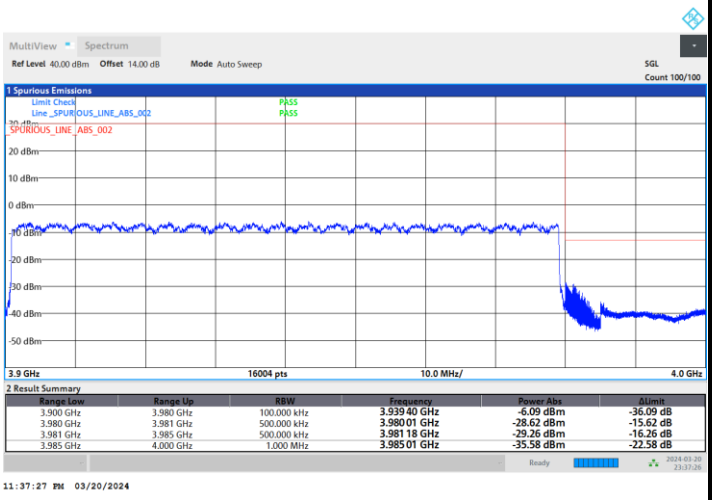

### Highest Band Edge / Full RB



| FR1 n77 / 80MHz / CP OFDM / 64QAM | |
|---|---|
| **Lowest Band Edge / Full RB** | **Highest Band Edge / Full RB** |
|  |  |

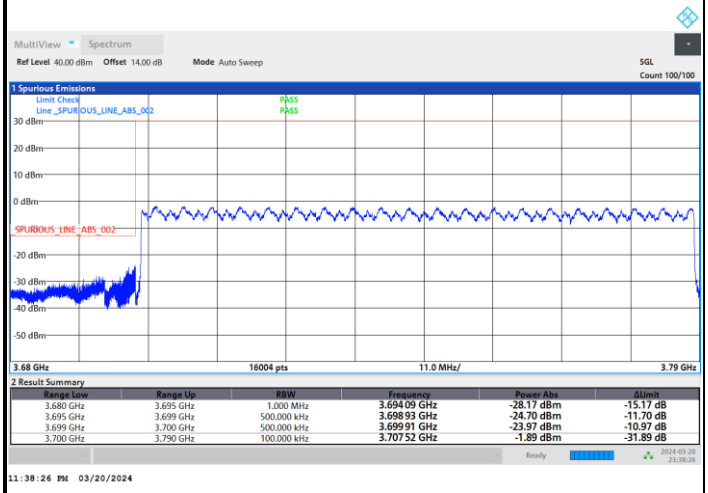




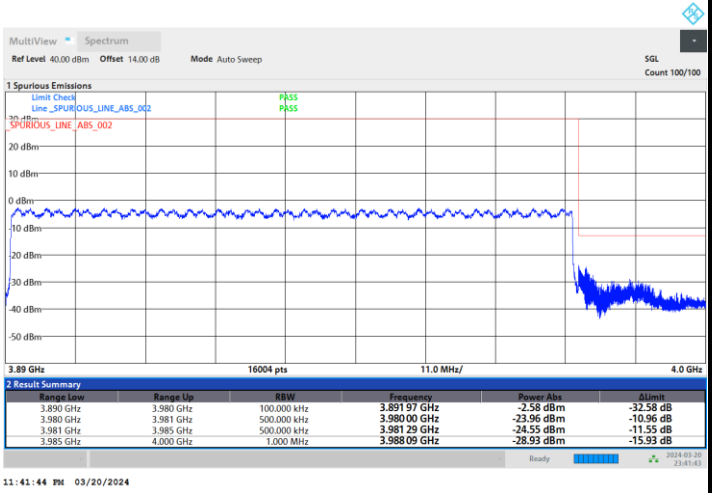
| FR1 n77 / 80MHz / CP OFDM / 256QAM | |
|---|---|
| **Lowest Band Edge / Full RB** | **Highest Band Edge / Full RB** |
|  |  |

## FR1 n77 / 90MHz / CP OFDM / QPSK

### Lowest Band Edge / Full RB

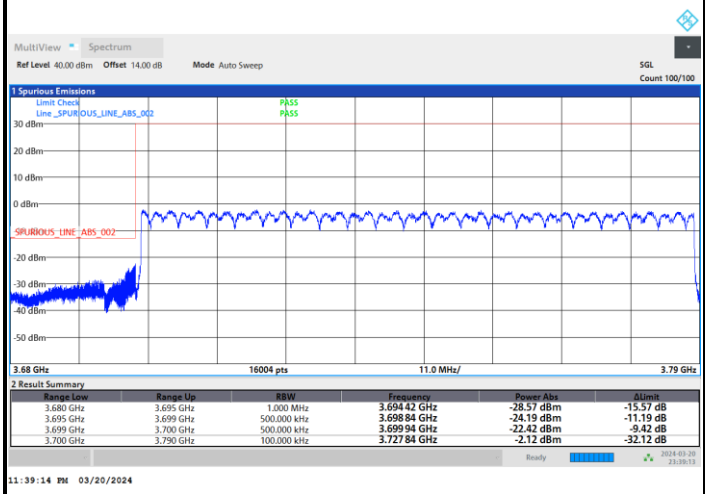



### Highest Band Edge / Full RB

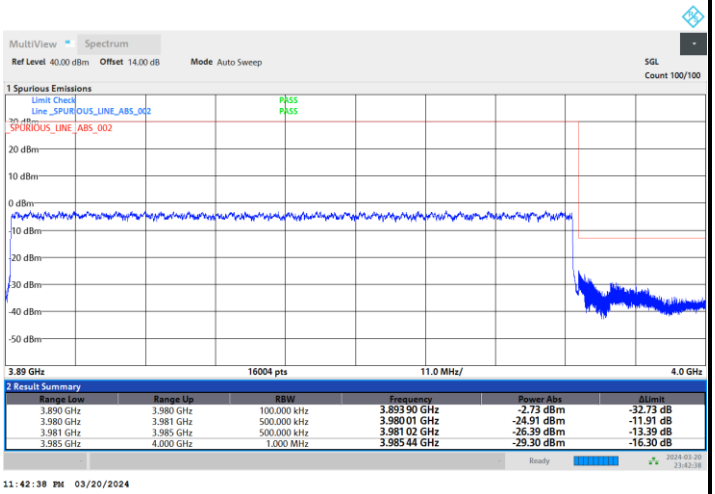


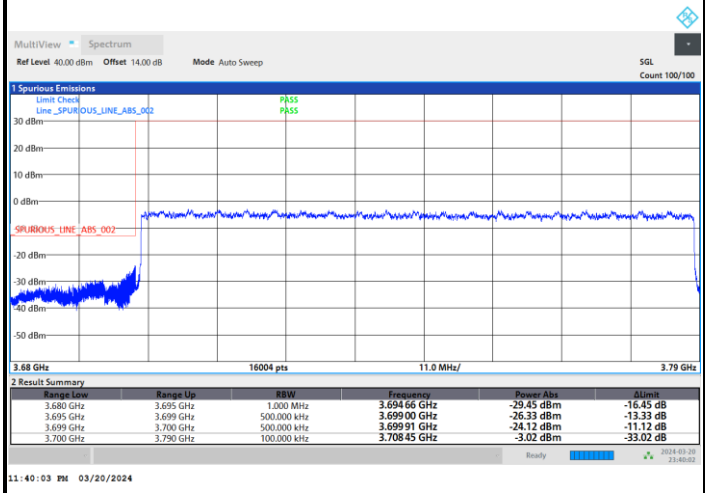
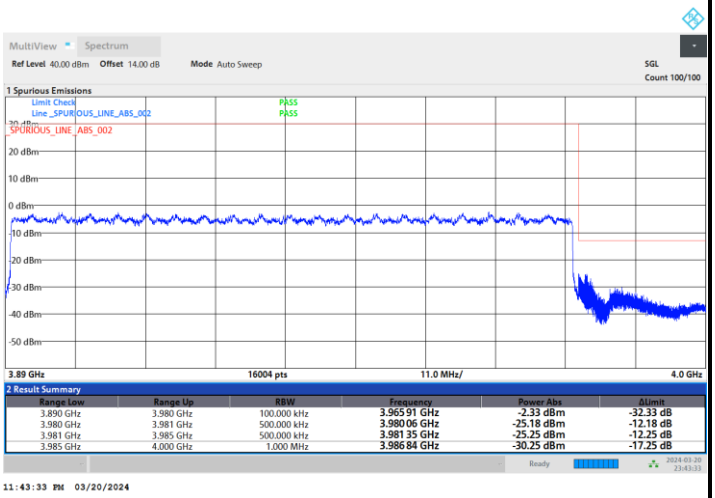

## FR1 n77 / 90MHz / CP OFDM / 16QAM

### Lowest Band Edge / Full RB



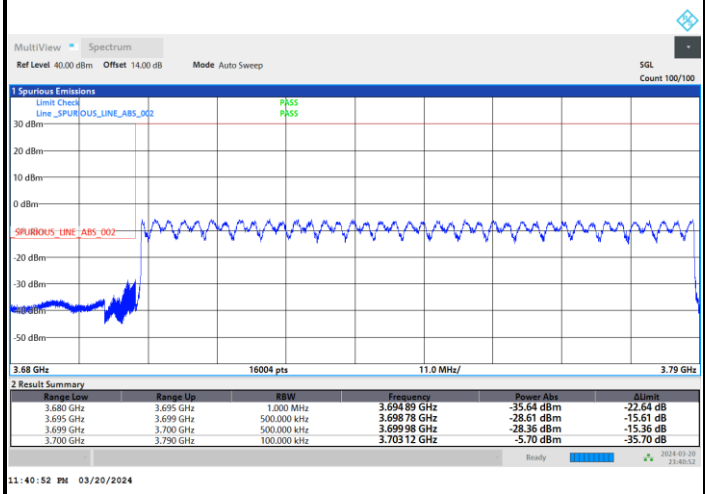
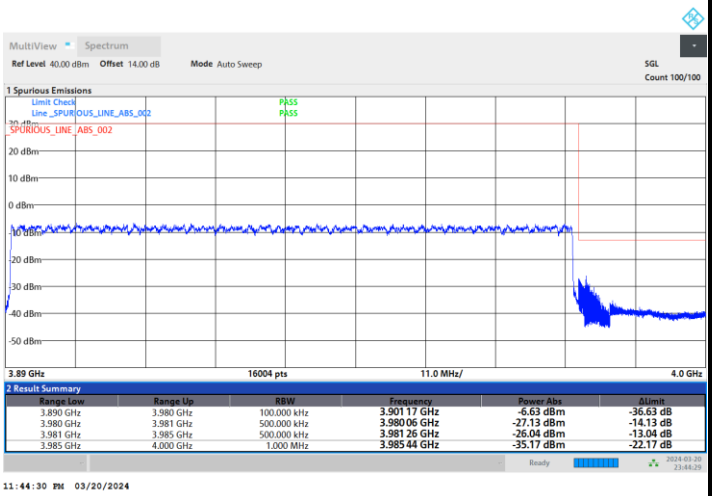

### Highest Band Edge / Full RB



| FR1 n77 / 90MHz / CP OFDM / 64QAM | |
|---|---|
| **Lowest Band Edge / Full RB** | **Highest Band Edge / Full RB** |
|  |  |

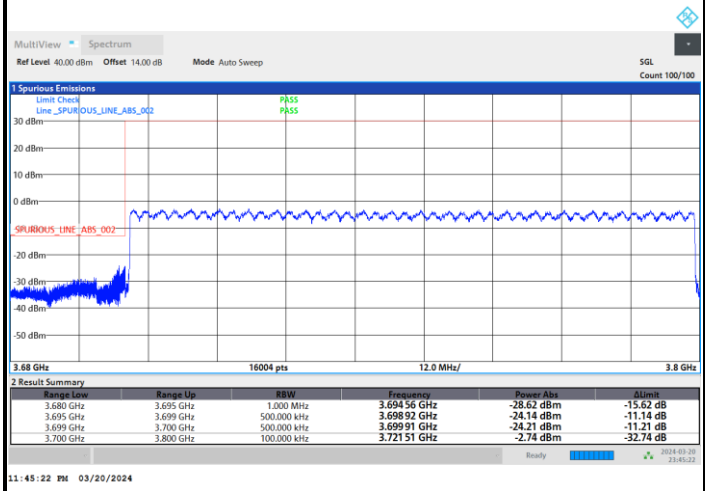




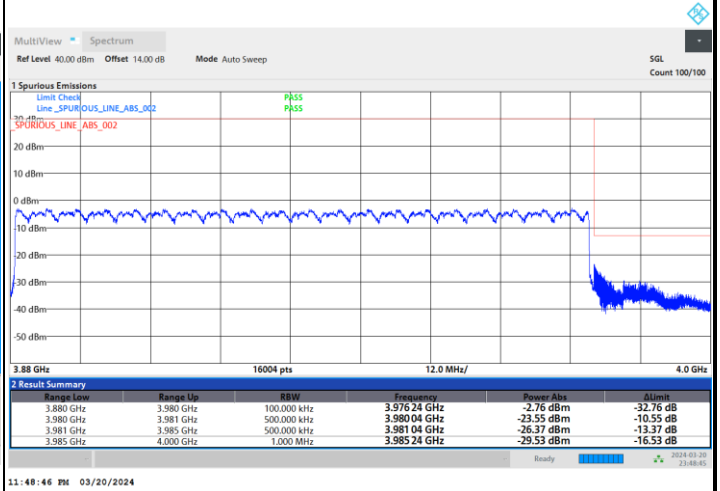
| FR1 n77 / 90MHz / CP OFDM / 256QAM | |
|---|---|
| **Lowest Band Edge / Full RB** | **Highest Band Edge / Full RB** |
|  |  |

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

### Lowest Band Edge / Full RB

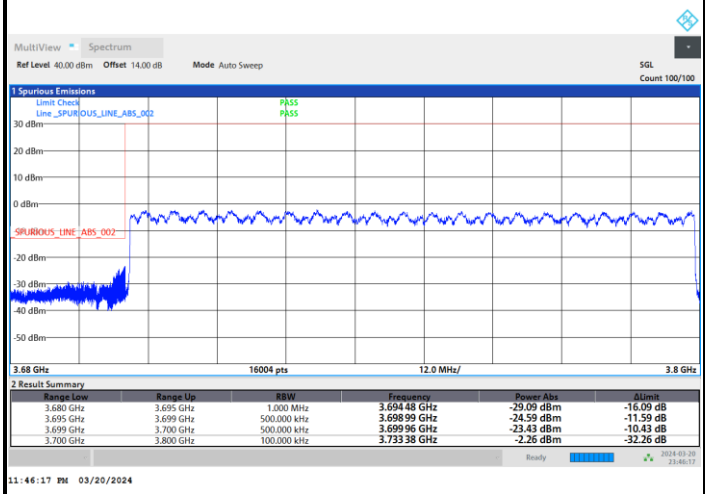



### Highest Band Edge / Full RB

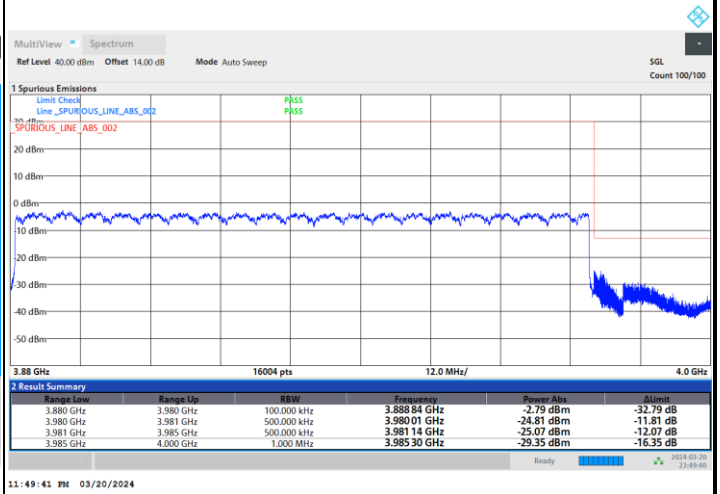


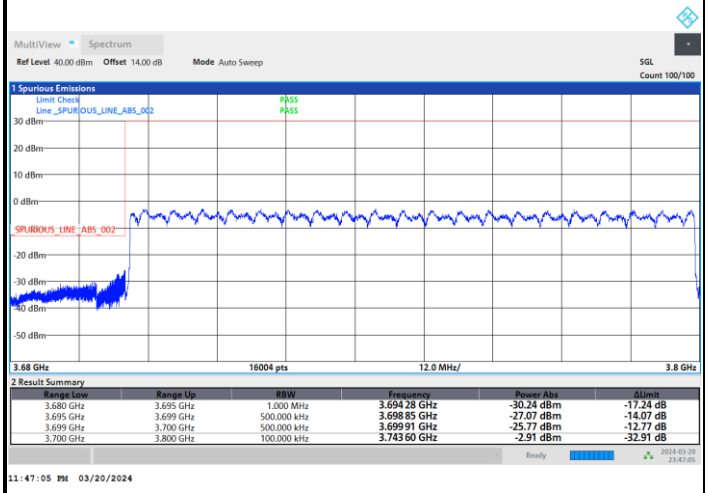
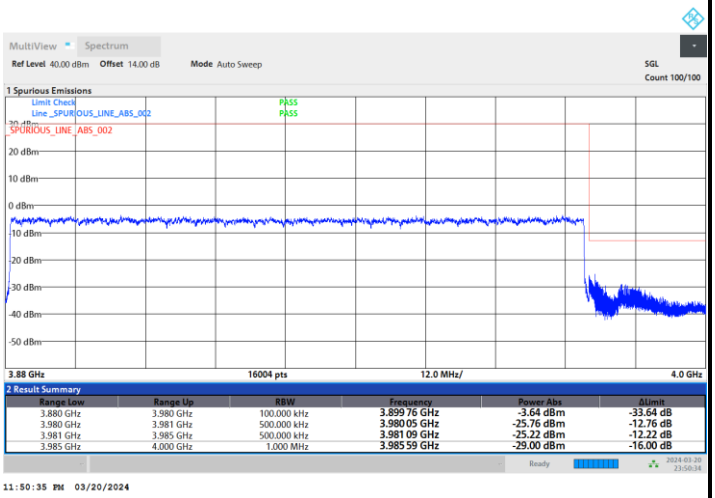

## FR1 n77 / 100MHz / CP OFDM / 16QAM

### Lowest Band Edge / Full RB



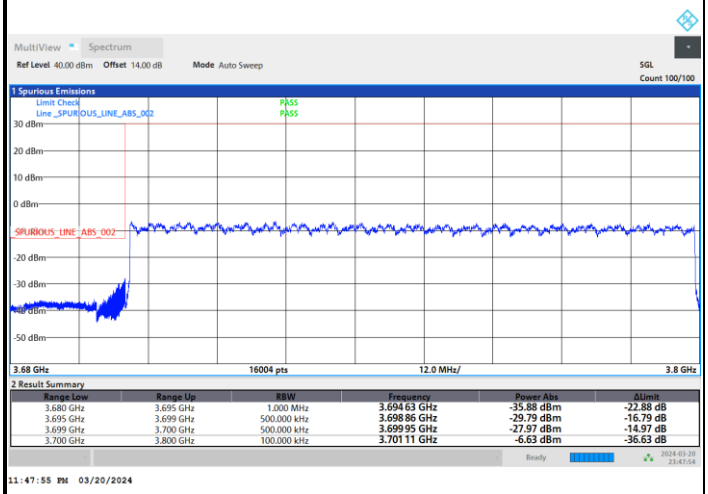
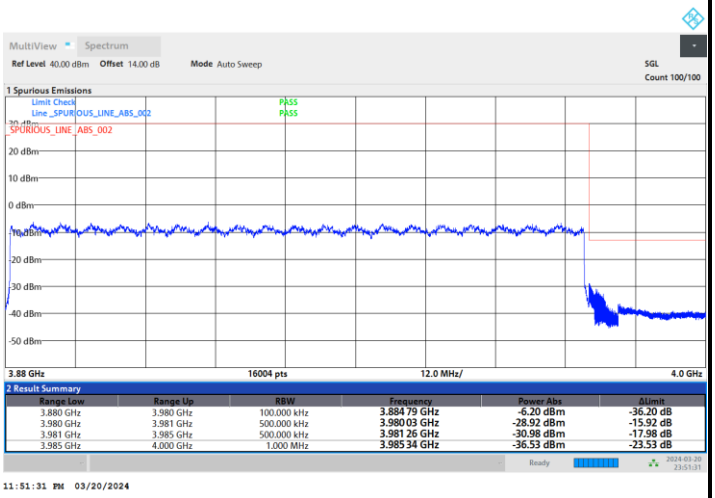

### Highest Band Edge / Full RB



| FR1 n77 / 100MHz / CP OFDM / 64QAM | |
|---|---|
| **Lowest Band Edge / Full RB** | **Highest Band Edge / Full RB** |
|  |  |



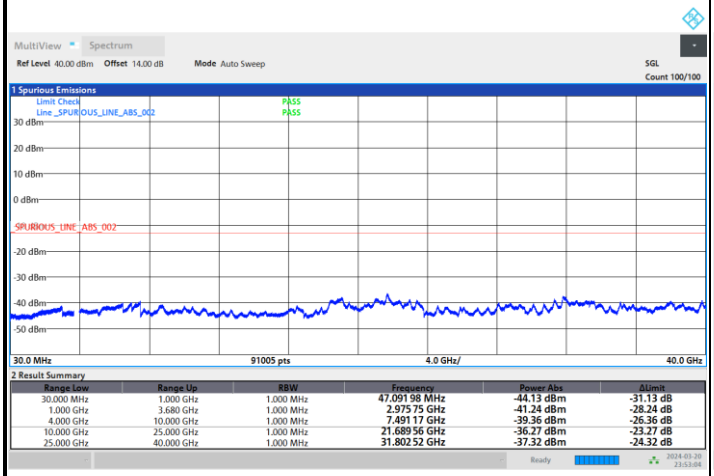


| FR1 n77 / 100MHz / CP OFDM / 256QAM | |
|---|---|
| **Lowest Band Edge / Full RB** | **Highest Band Edge / Full RB** |
|  |  |

# Conducted Spurious Emission

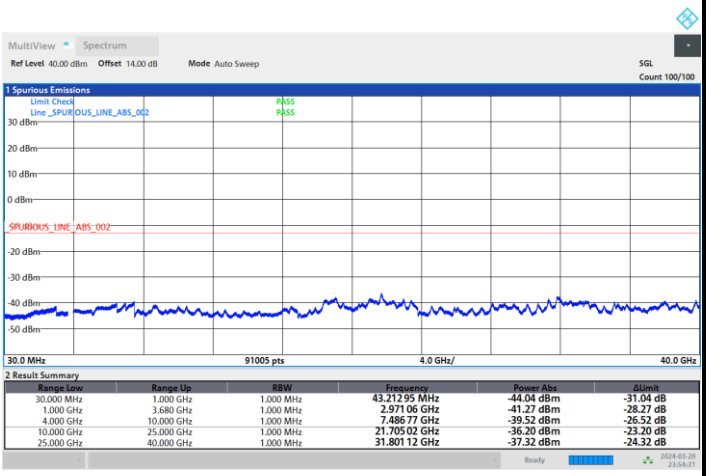
## FR1 n77 / 10MHz / CP OFDM / QPSK / 1RB1

### Lowest Channel



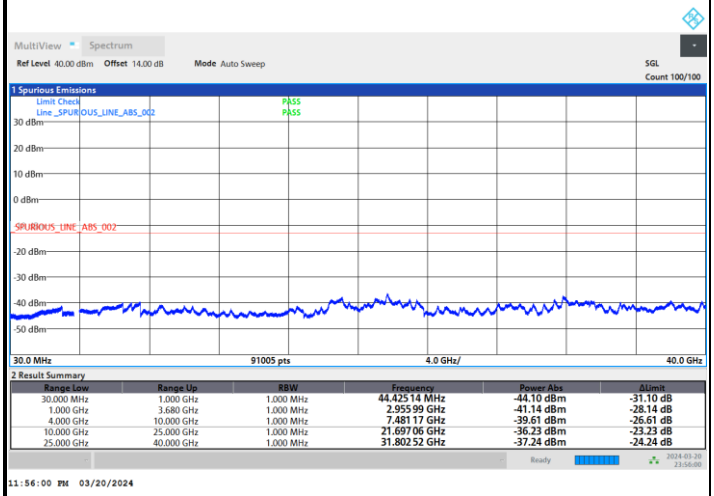

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 47.091 98 MHz | -44.13 dBm | -31.13 dB |
| 1.000 GHz | 3.680 GHz | 1.000 MHz | 2.975 75 GHz | -41.24 dBm | -28.24 dB |
| 4.000 GHz | 10.000 GHz | 1.000 MHz | 7.491 17 GHz | -39.36 dBm | -26.36 dB |
| 10.000 GHz | 25.000 GHz | 1.000 MHz | 21.689 56 GHz | -36.27 dBm | -23.27 dB |
| 25.000 GHz | 40.000 GHz | 1.000 MHz | 31.802 52 GHz | -37.32 dBm | -24.32 dB |

### Middle Channel




| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 43.212 95 MHz | -44.04 dBm | -31.04 dB |
| 1.000 GHz | 3.680 GHz | 1.000 MHz | 2.971 06 GHz | -41.27 dBm | -28.27 dB |
| 4.000 GHz | 10.000 GHz | 1.000 MHz | 7.486 77 GHz | -39.52 dBm | -26.52 dB |
| 10.000 GHz | 25.000 GHz | 1.000 MHz | 21.705 02 GHz | -36.20 dBm | -23.20 dB |
| 25.000 GHz | 40.000 GHz | 1.000 MHz | 31.801 12 GHz | -37.32 dBm | -24.32 dB |

### Highest Channel




| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 1.000 GHz | 1.000 MHz | 44.425 14 MHz | -44.10 dBm | -31.10 dB |
| 1.000 GHz | 3.680 GHz | 1.000 MHz | 2.955 99 GHz | -41.14 dBm | -28.14 dB |
| 4.000 GHz | 10.000 GHz | 1.000 MHz | 7.481 17 GHz | -39.61 dBm | -26.61 dB |
| 10.000 GHz | 25.000 GHz | 1.000 MHz | 21.697 06 GHz | -36.23 dBm | -23.23 dB |
| 25.000 GHz | 40.000 GHz | 1.000 MHz | 31.802 52 GHz | -37.24 dBm | -24.24 dB |

# Frequency Stability

| Test Conditions | | FR1 n77 (QPSK) / Middle Channel | Limit |
|---|---|---|---|
| Temperature (°C) | Voltage (Volt) | BW 20MHz | Note 2. |
| | | Deviation (ppm) | Result |
| 50 | Normal Voltage | 0.0015 | PASS |
| 40 | Normal Voltage | 0.0013 | |
| 30 | Normal Voltage | 0.0018 | |
| 20(Ref.) | Normal Voltage | 0.0000 | |
| 10 | Normal Voltage | 0.0016 | |
| 0 | Normal Voltage | 0.0011 | |
| -10 | Normal Voltage | 0.0006 | |
| -20 | Normal Voltage | 0.0002 | |
| -30 | Normal Voltage | 0.0010 | |
| 20 | Maximum Voltage | 0.0023 | |
| 20 | Normal Voltage | 0.0000 | |
| 20 | Battery End Point | 0.0010 | |

**Note:**

1. Normal Voltage = 3.89 V.；Battery End Point (BEP) = 3.6 V.；Maximum Voltage = 4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

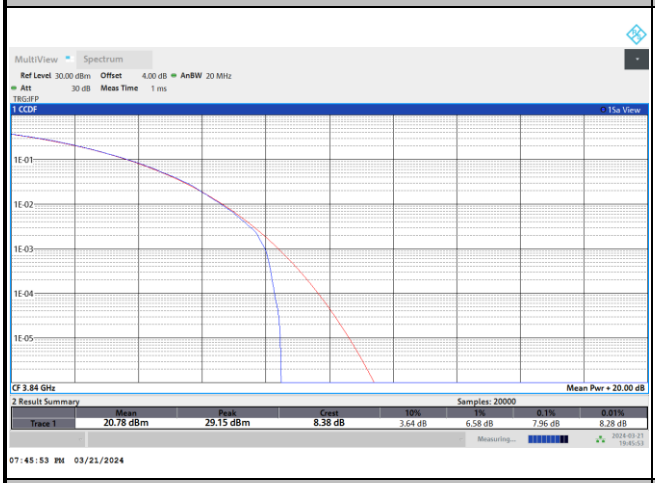
## MIMO <Ant. 6+1> (1)

# Peak-to-Average Ratio

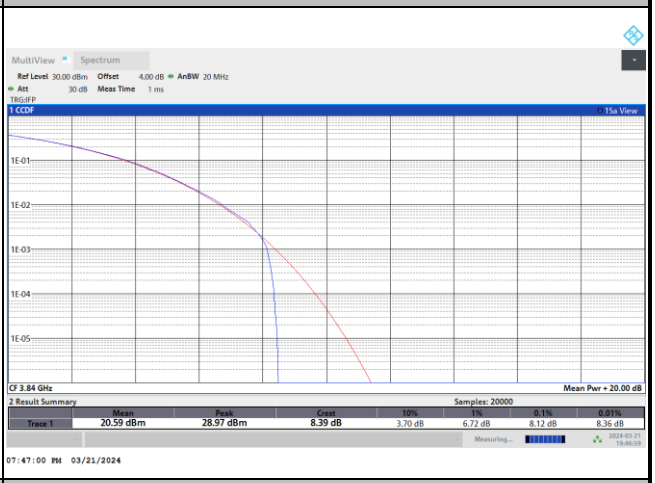
| Mode | FR1 n77 / 20MHz / CP OFDM | | | | |
|---|---|---|---|---|---|
| Mod. | QPSK | 16QAM | 64QAM | 256QAM | Limit: 13dB |
| RB Size | Full RB | Full RB | Full RB | Full RB | Result |
| Middle CH | 7.96 | 8.12 | 8.04 | 8.62 | PASS |

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

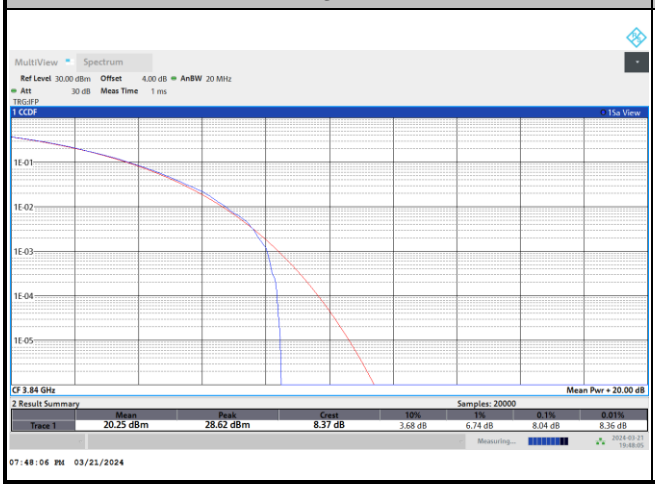
**QPSK**



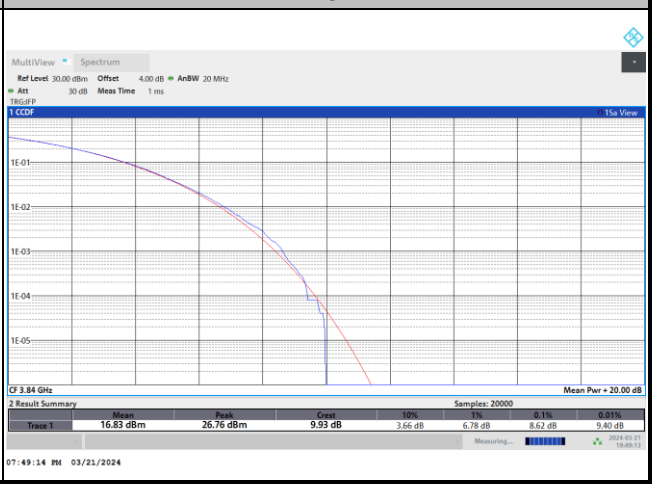

**16QAM**




**64QAM**

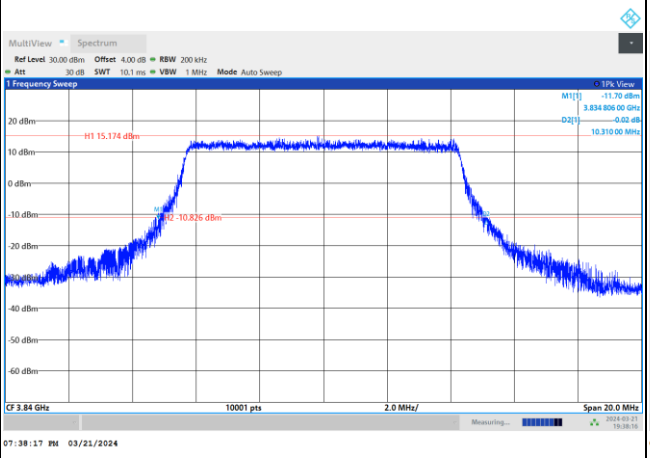
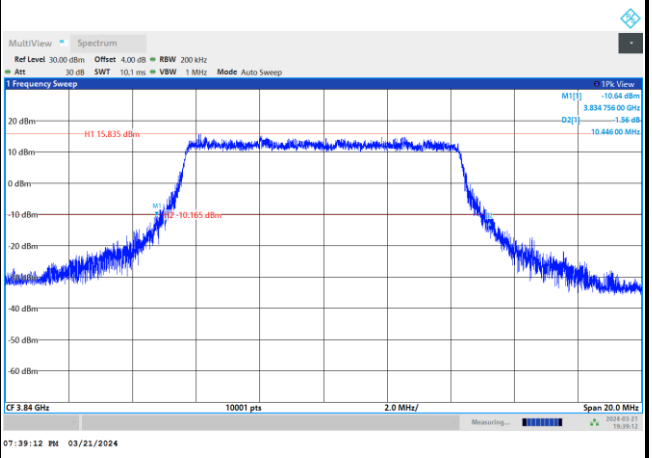
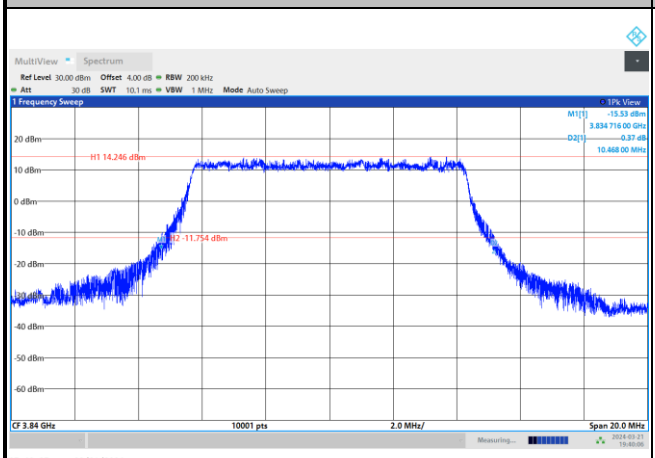
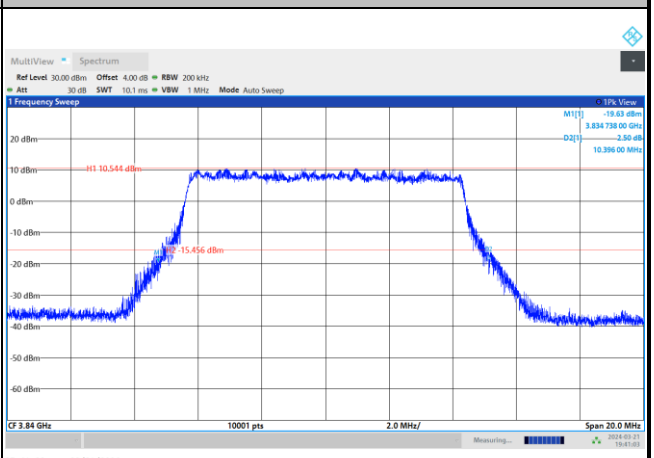



**256QAM**



# 26dB Bandwidth

| Mode | FR1 n77 : 26dB BW(MHz) / CP OFDM | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BW | 10MHz | | 15MHz | | 20MHz | | 25MHz | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Middle CH | 10.31 | 10.45 | 15.53 | 15.43 | 20.64 | 20.43 | 25.59 | 25.73 |
| Mod. | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM |
| Middle CH | 10.47 | 10.40 | 15.40 | 15.61 | 20.79 | 20.45 | 25.45 | 25.68 |
| BW | 30MHz | | 40MHz | | 50MHz | | 60MHz | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Middle CH | 31.31 | 31.01 | 42.12 | 42.25 | 52.48 | 51.91 | 66.69 | 67.69 |
| Mod. | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM |
| Middle CH | 30.97 | 30.98 | 43.06 | 42.15 | 51.83 | 52.15 | 66.56 | 67.03 |
| BW | 70MHz | | 80MHz | | 90MHz | | 100MHz | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Middle CH | 77.21 | 76.79 | 84.72 | 84.61 | 97.43 | 96.60 | 106.46 | 107.72 |
| Mod. | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM |
| Middle CH | 76.37 | 75.53 | 84.88 | 83.92 | 97.72 | 95.98 | 106.92 | 106.22 |

| FR1 n77 / 10MHz / CP OFDM / Middle Channel / Full RB | |
|---|---|
| QPSK | 16QAM |
|  |  |
| 64QAM | 256QAM |
|  |  |

| FR1 n77 / 15MHz / CP OFDM / Middle Channel / Full RB | |
|---|---|
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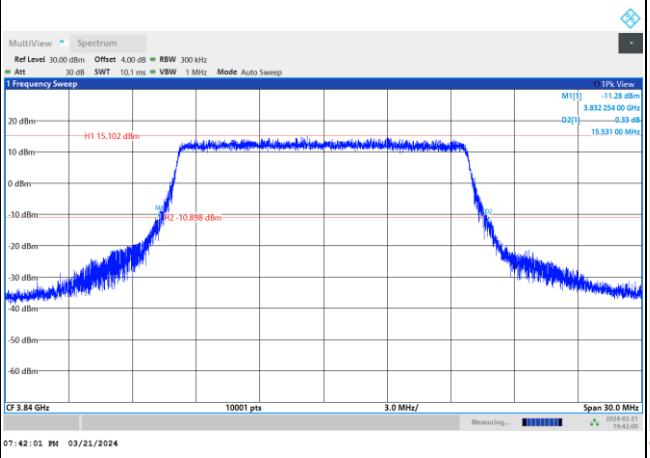
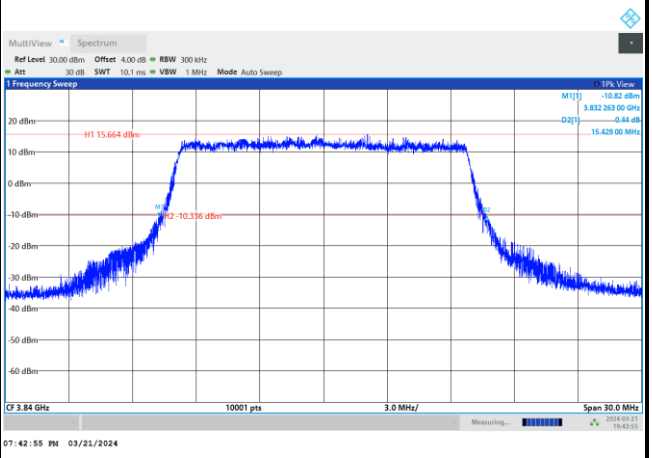
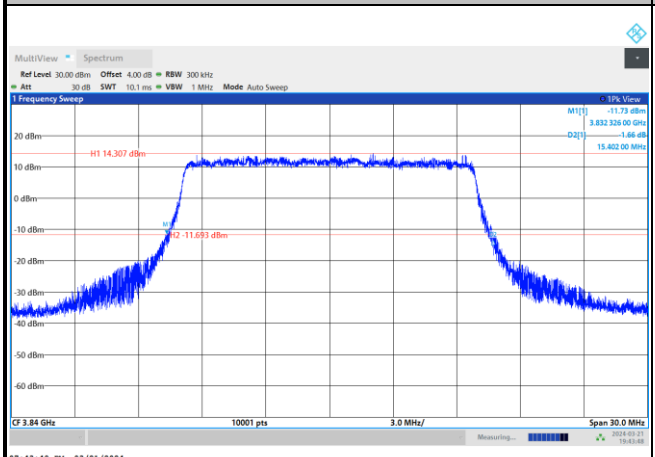
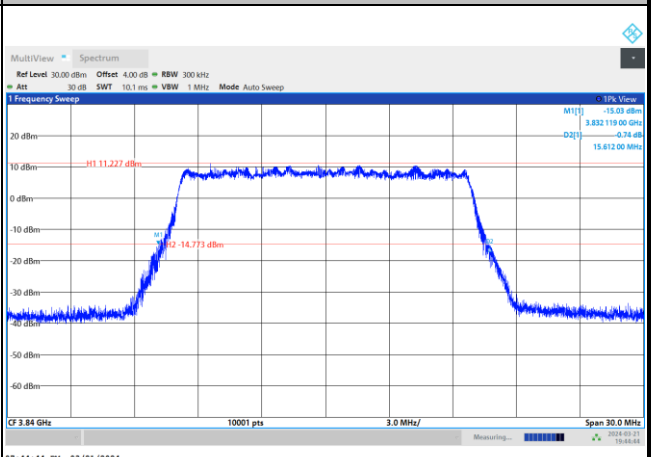
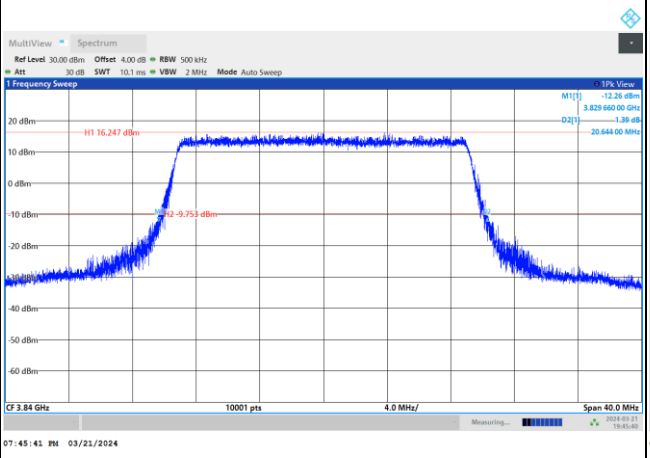
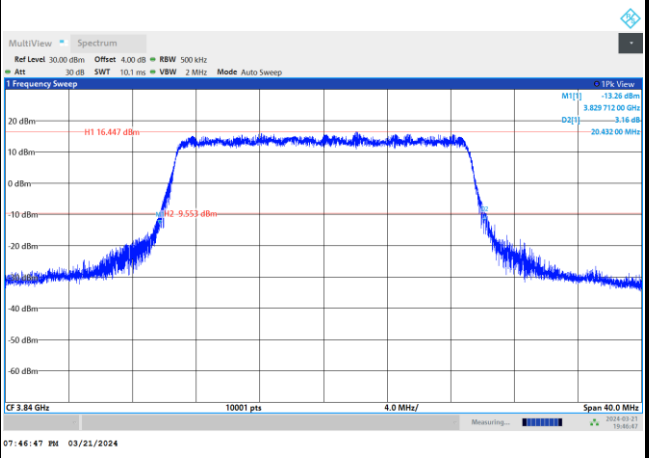
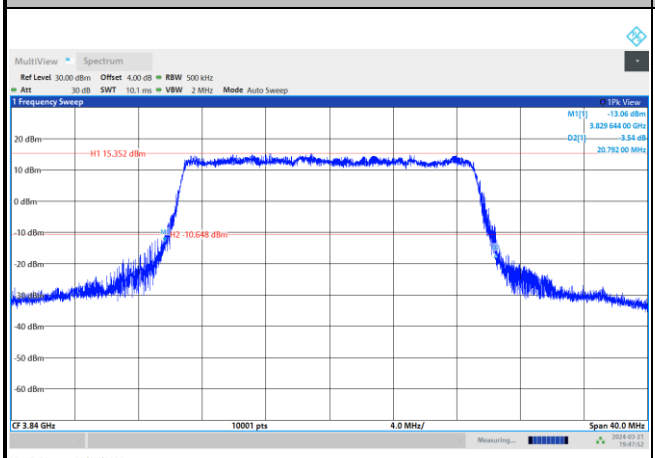
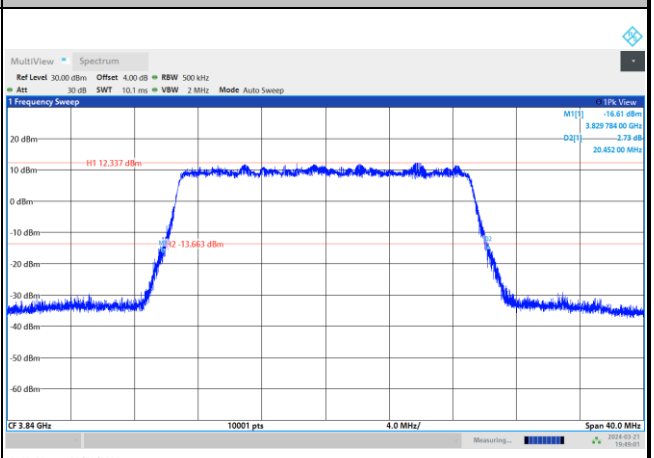
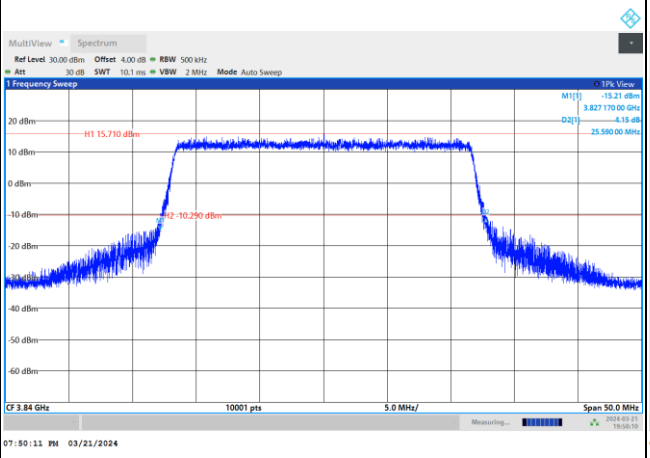
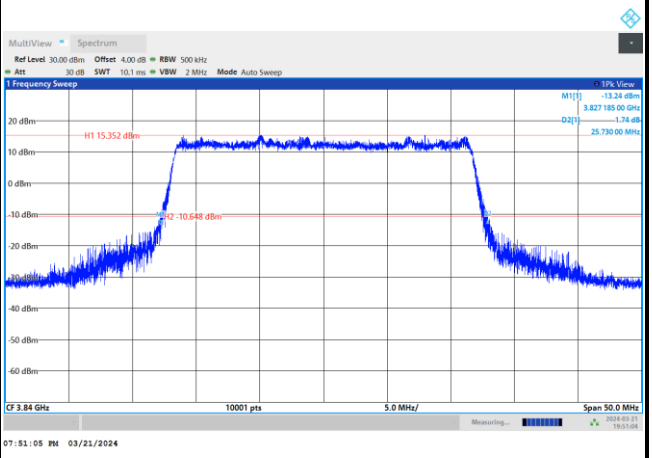
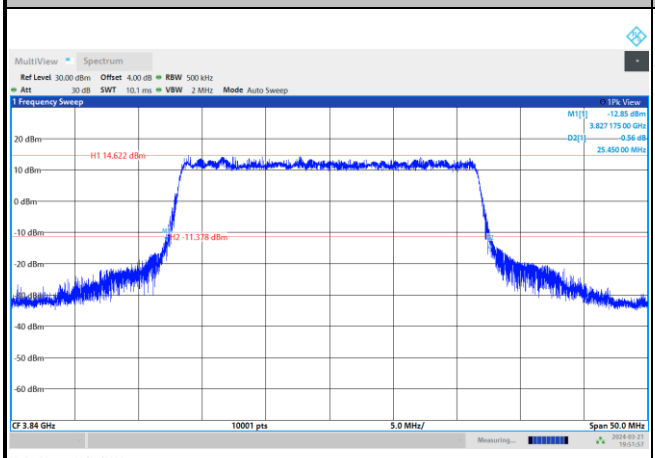
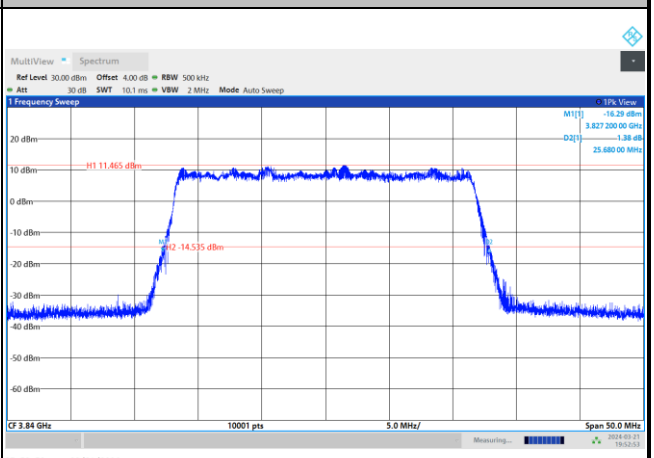
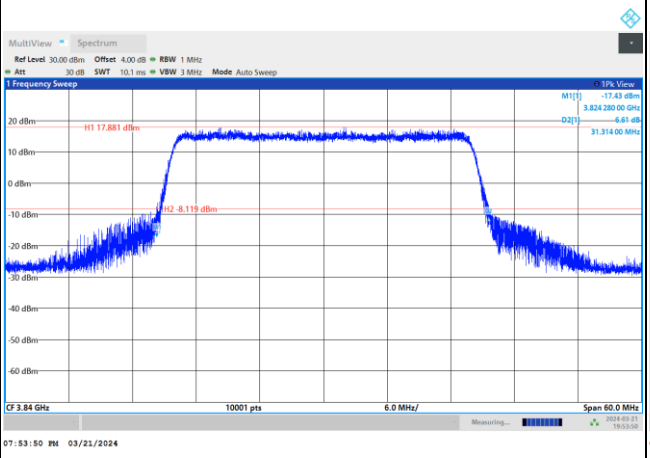
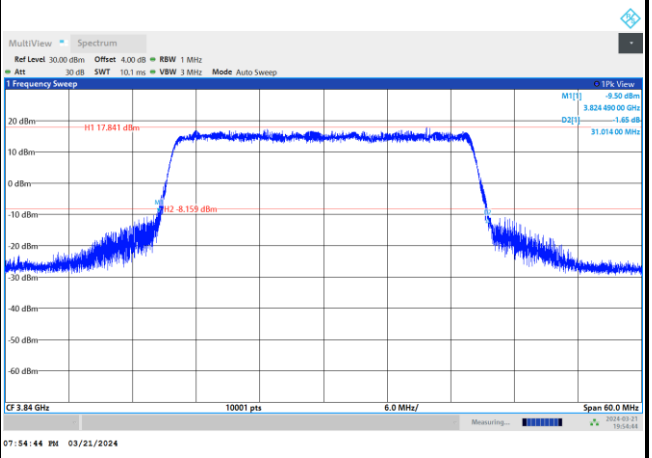
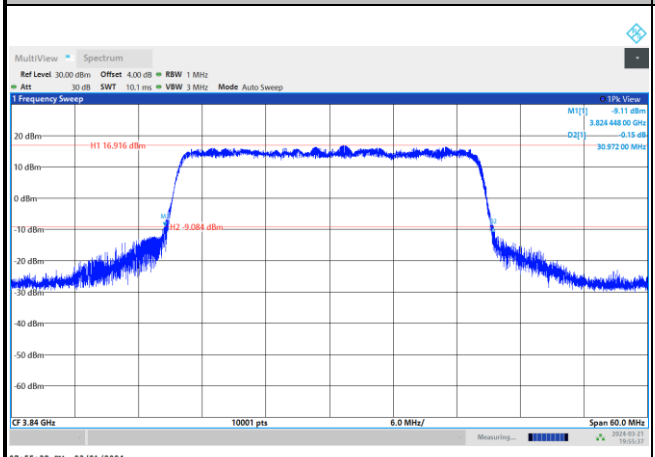
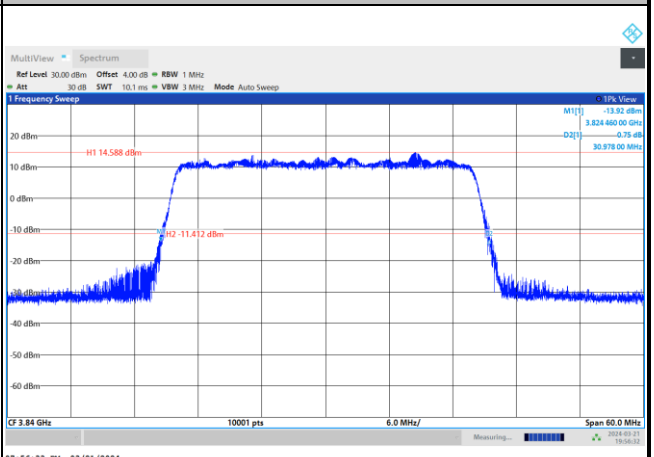
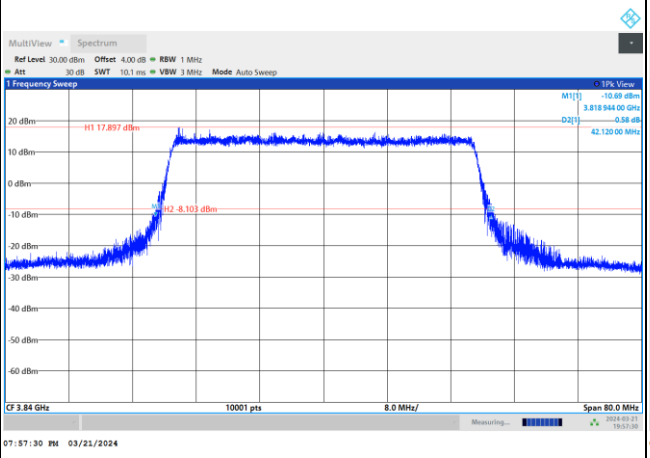
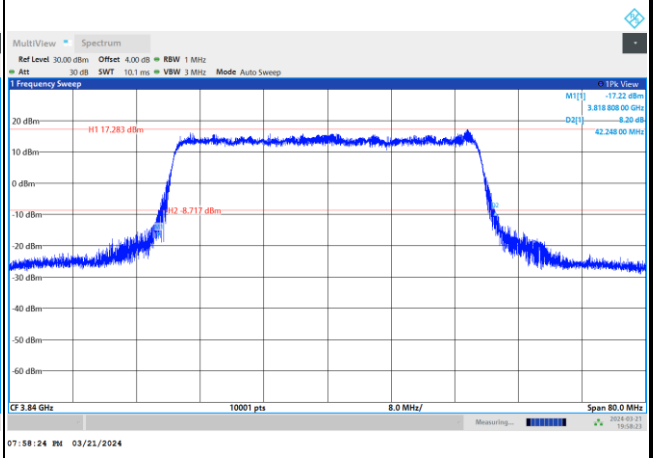
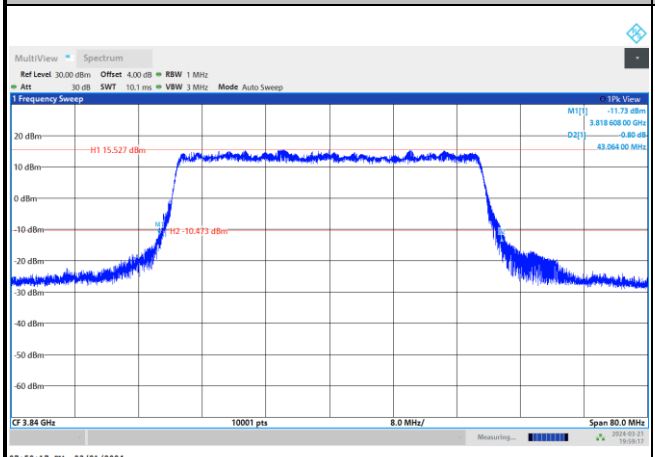
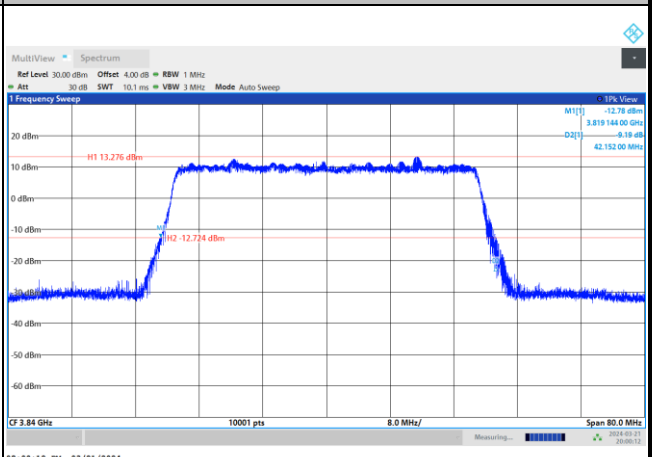
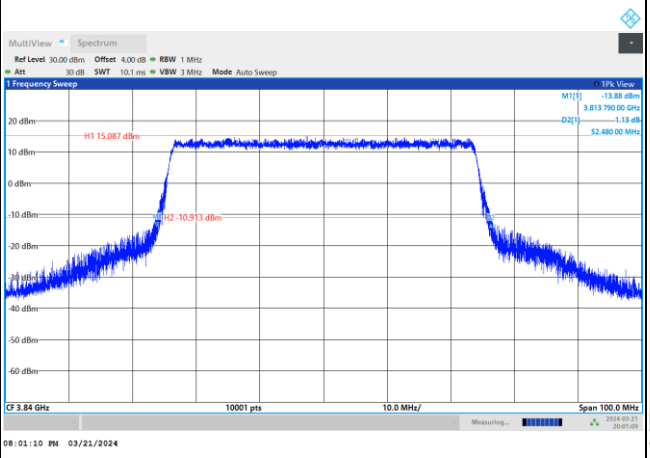
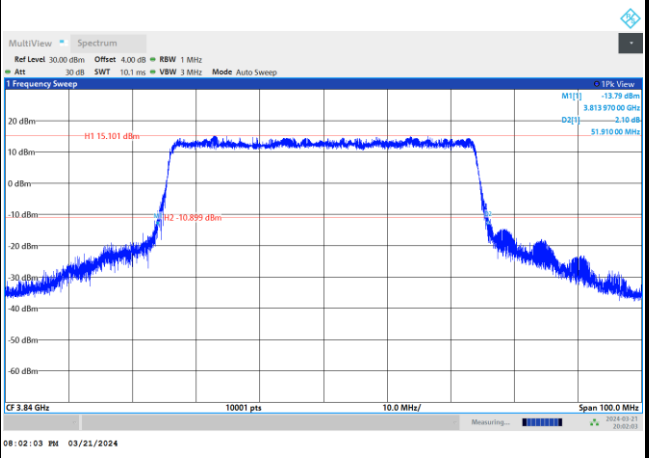
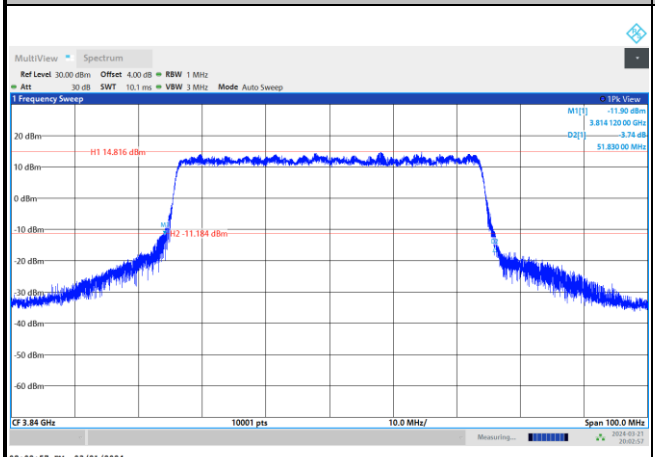
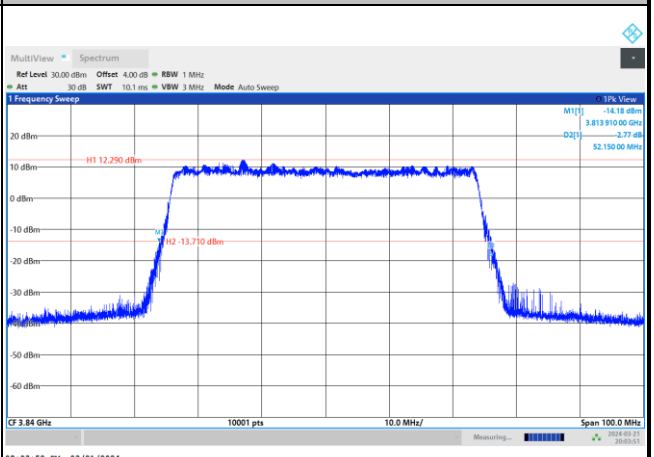
|  |  |
| 64QAM | 256QAM |
|  |  |

| FR1 n77 / 20MHz / CP OFDM / Middle Channel / Full RB | |
|---|---|
| QPSK | 16QAM |
|  |  |
| 64QAM | 256QAM |
|  |  |

| FR1 n77 / 25MHz / 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 / 50MHz / CP OFDM / Middle Channel / Full RB | |
|---|---|
| QPSK | 16QAM |
|  |  |
| 64QAM | 256QAM |
|  |  |

| FR1 n77 / 60MHz / CP OFDM / Middle Channel / Full RB | |
|---|---|
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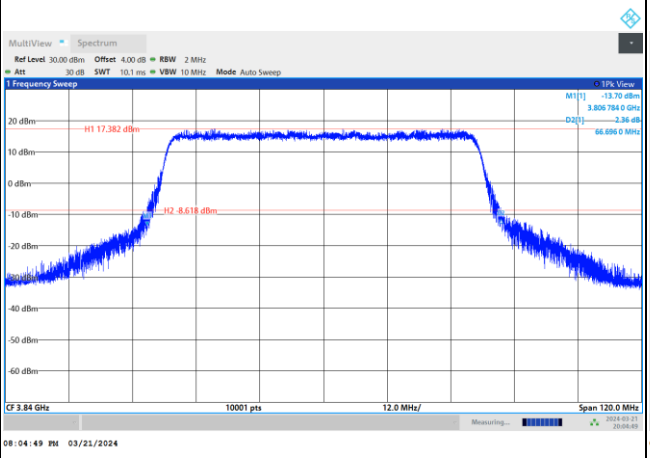
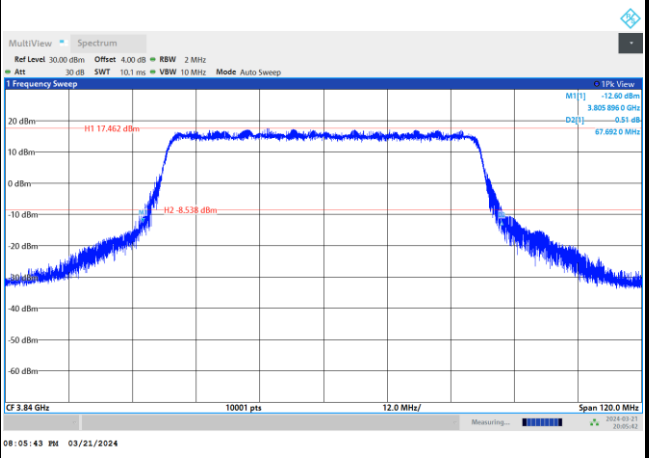
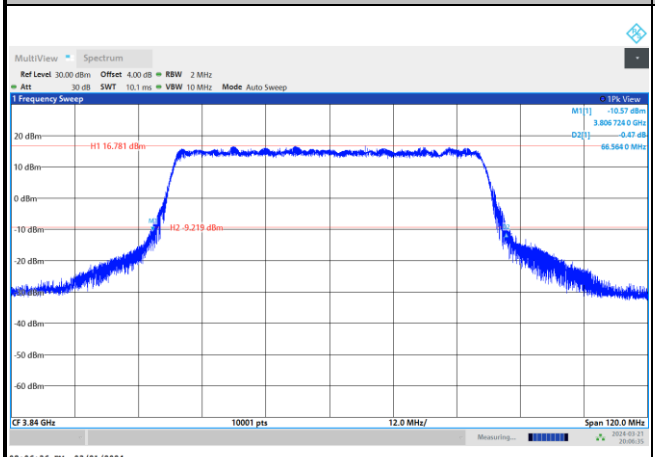
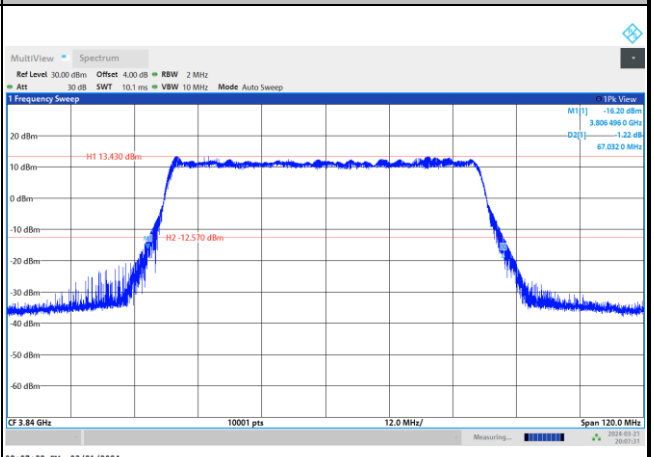
|  |  |
| 64QAM | 256QAM |
|  |  |

| FR1 n77 / 70MHz / CP OFDM / Middle Channel / Full RB | |
|---|---|
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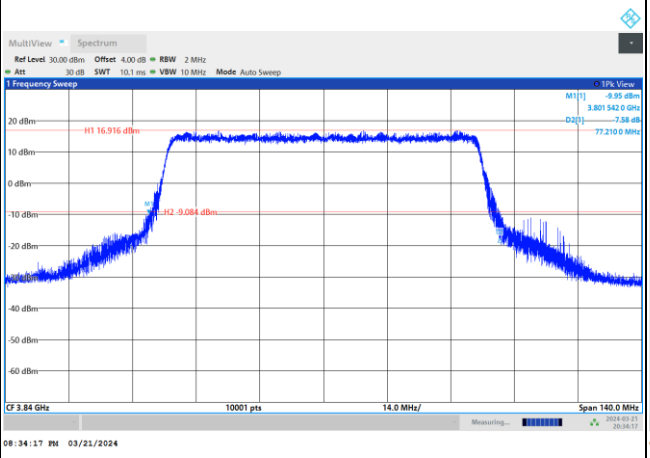
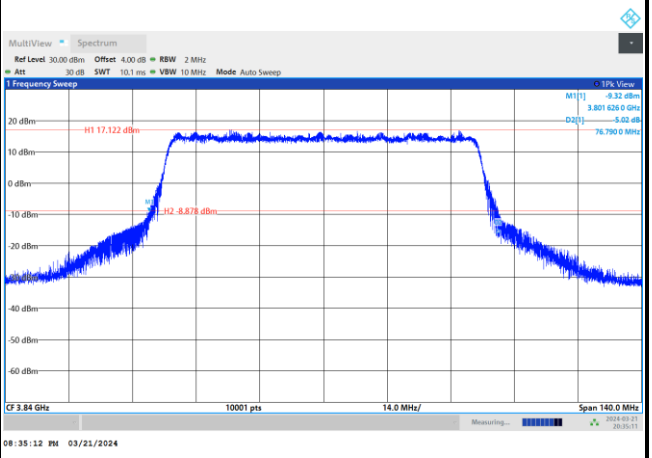
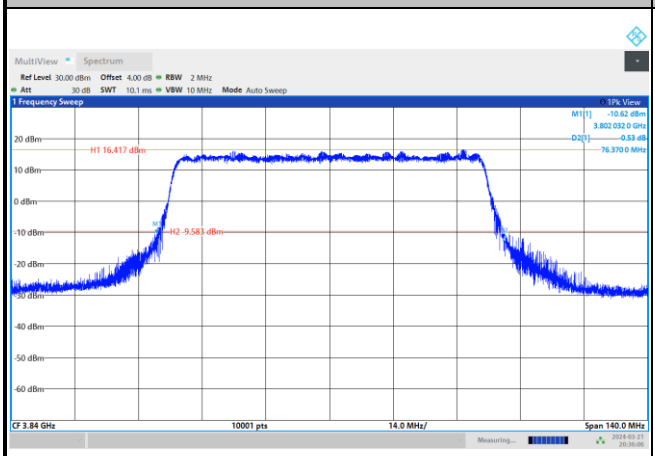
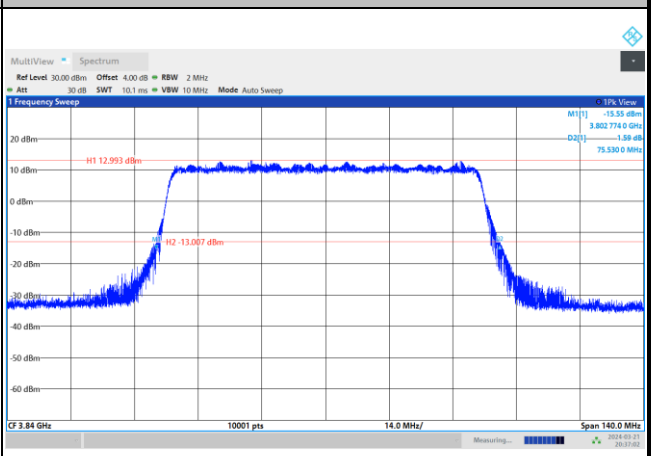
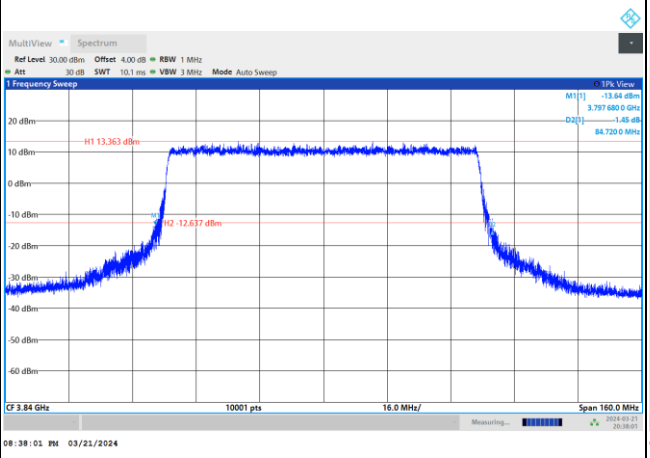
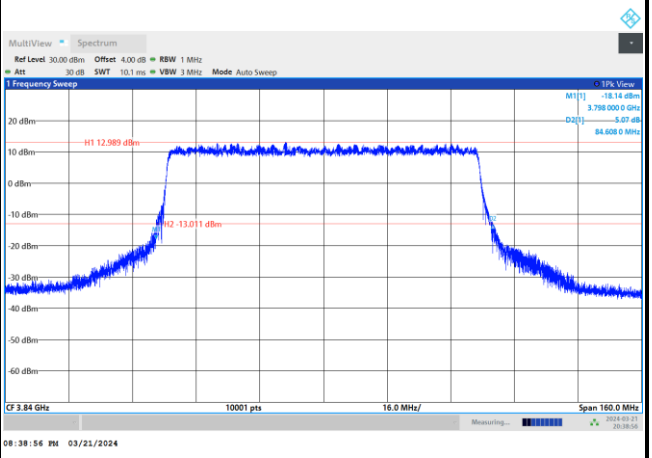
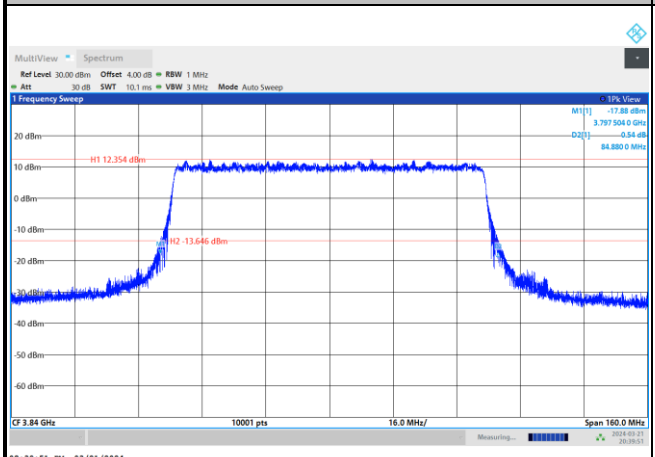
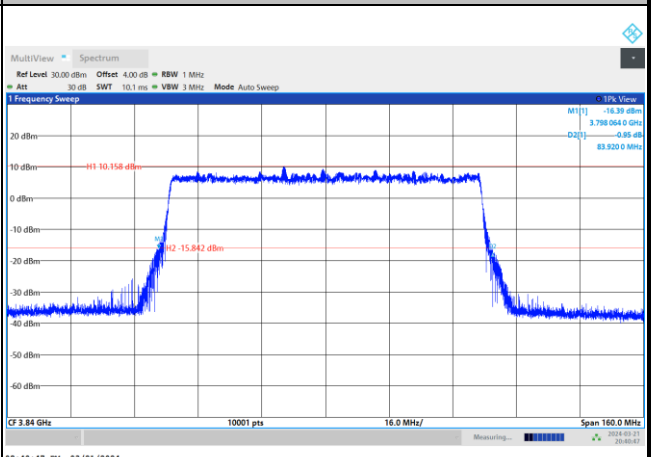
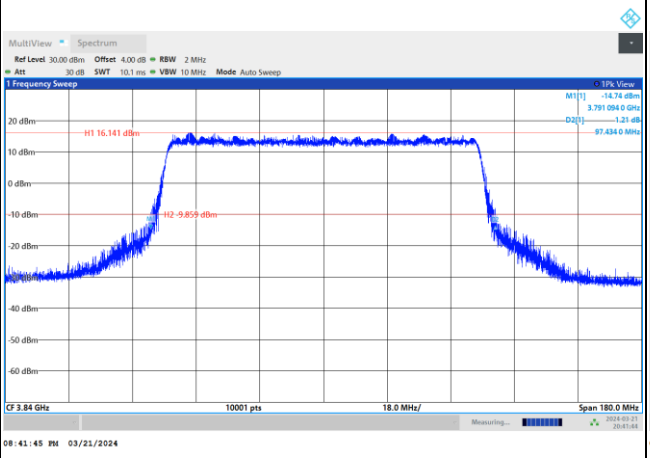
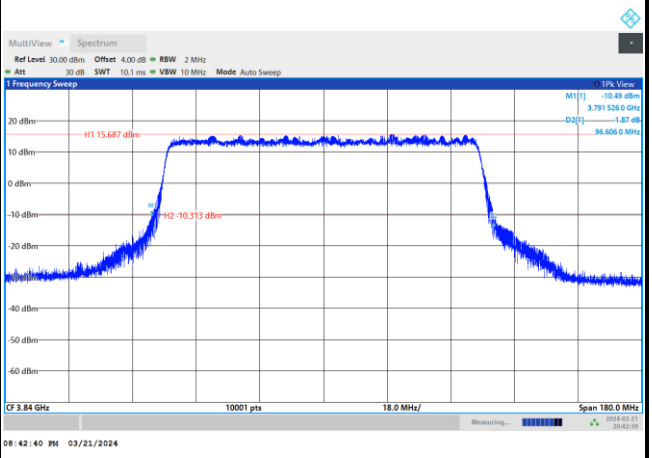
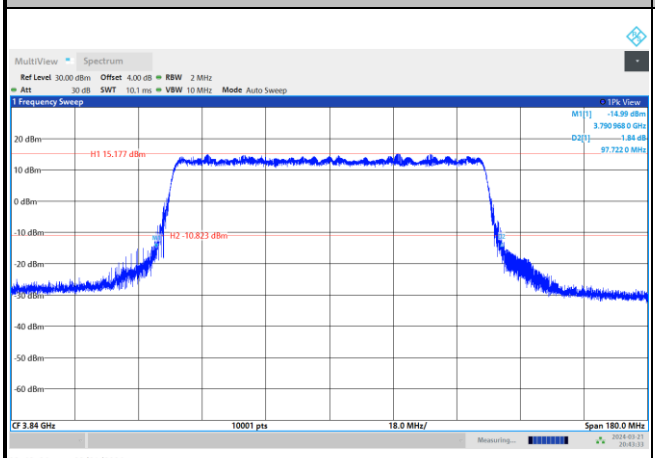
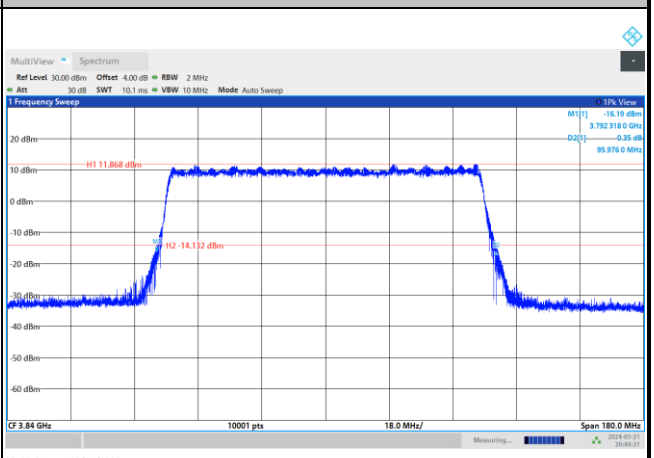
|  |  |
| 64QAM | 256QAM |
|  |  |

| FR1 n77 / 80MHz / CP OFDM / Middle Channel / Full RB | |
|---|---|
| QPSK | 16QAM |
|  |  |
| 64QAM | 256QAM |
|  |  |

| FR1 n77 / 90MHz / CP OFDM / Middle Channel / Full RB | |
|---|---|
| QPSK | 16QAM |
|  |  |
| 64QAM | 256QAM |
|  |  |