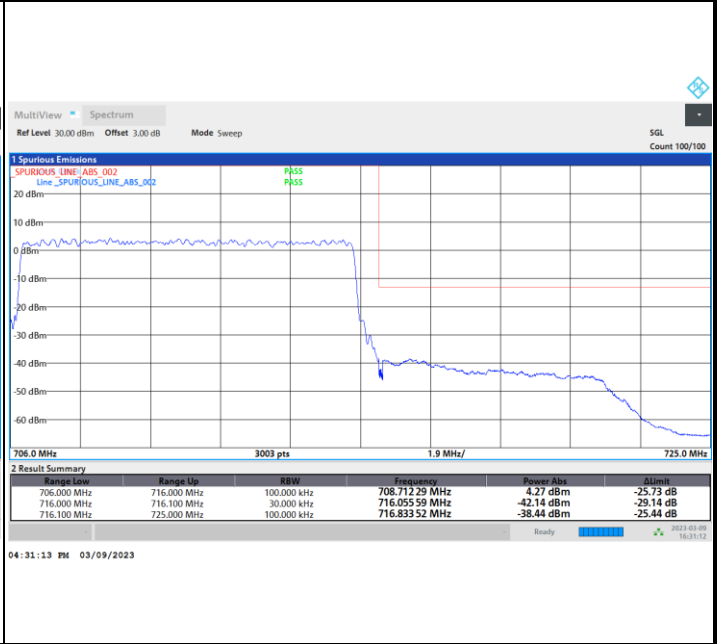
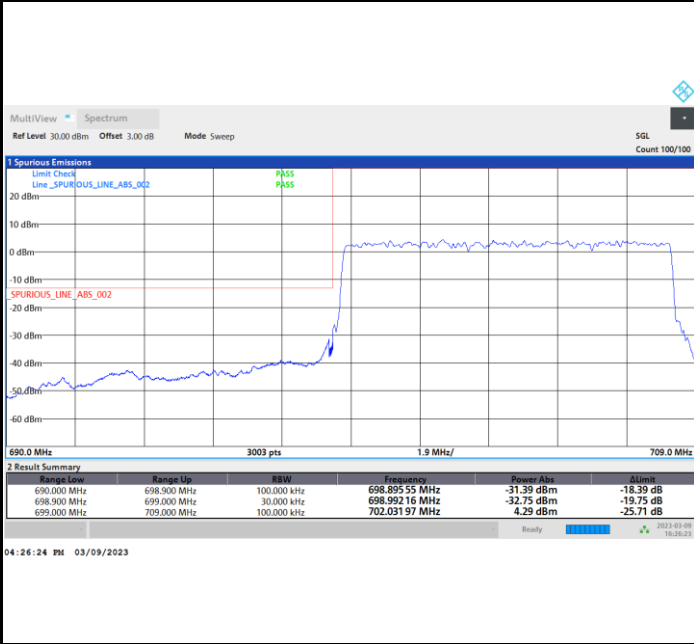




FR1 n12 / 10MHz / DFT-s-OFDM / 16QAM / Full RB

Lowest Band Edge

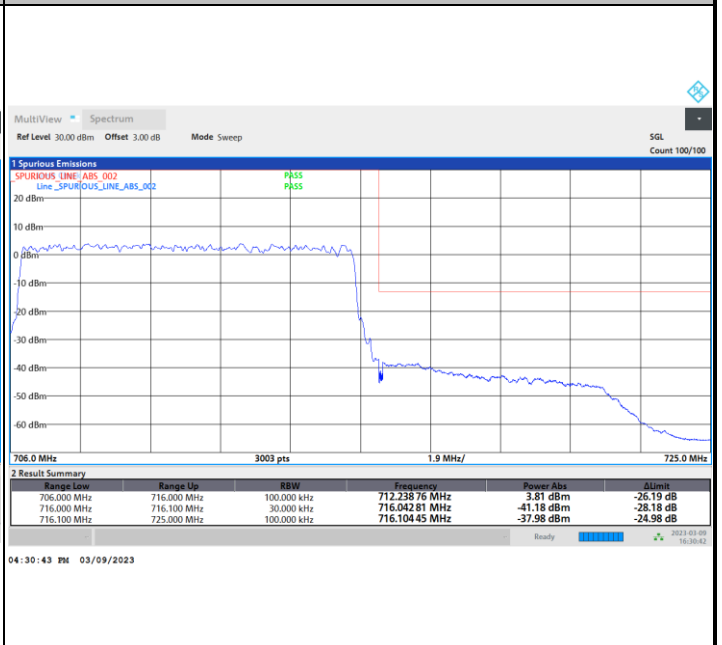
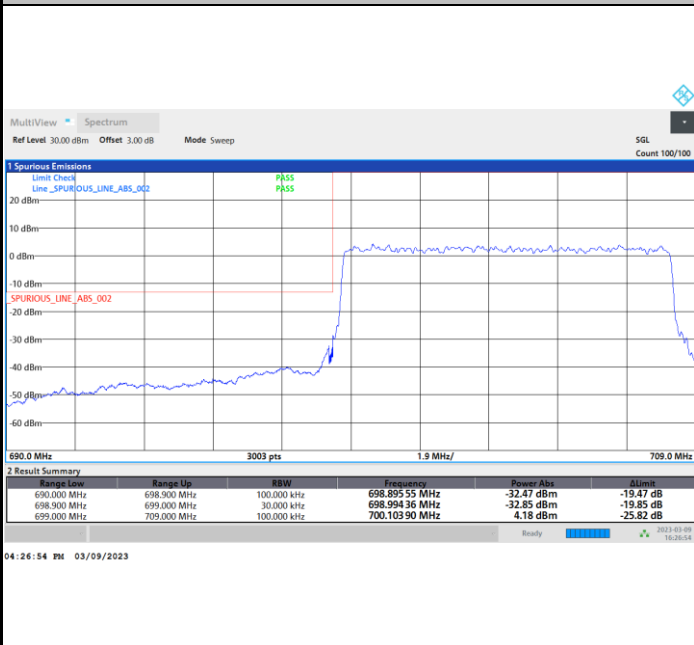
Highest Band Edge



FR1 n12 / 10MHz / DFT-s-OFDM / 64QAM / Full RB

Lowest Band Edge

Highest Band Edge

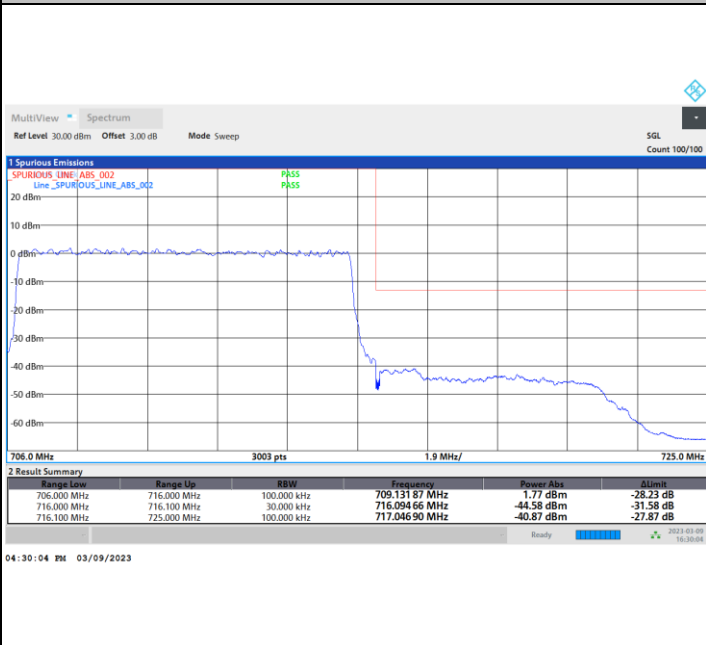
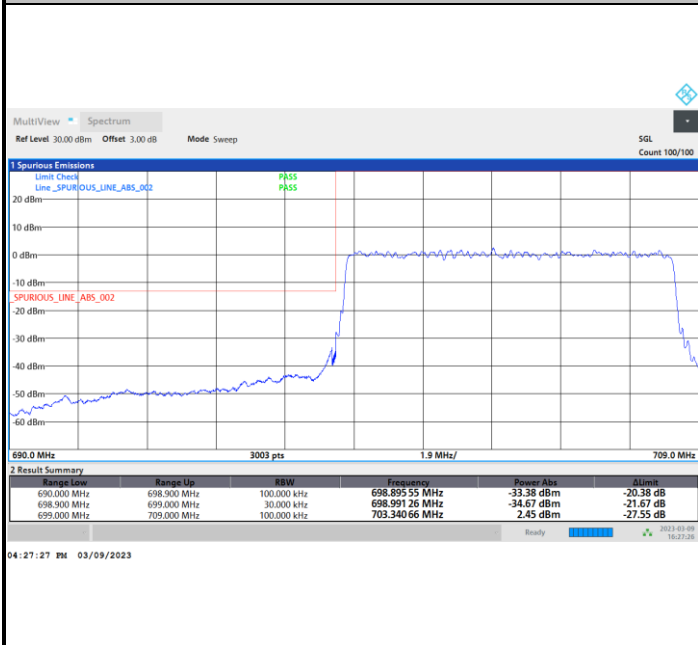




FR1 n12 / 10MHz / DFT-s-OFDM / 256QAM / Full RB

Lowest Band Edge

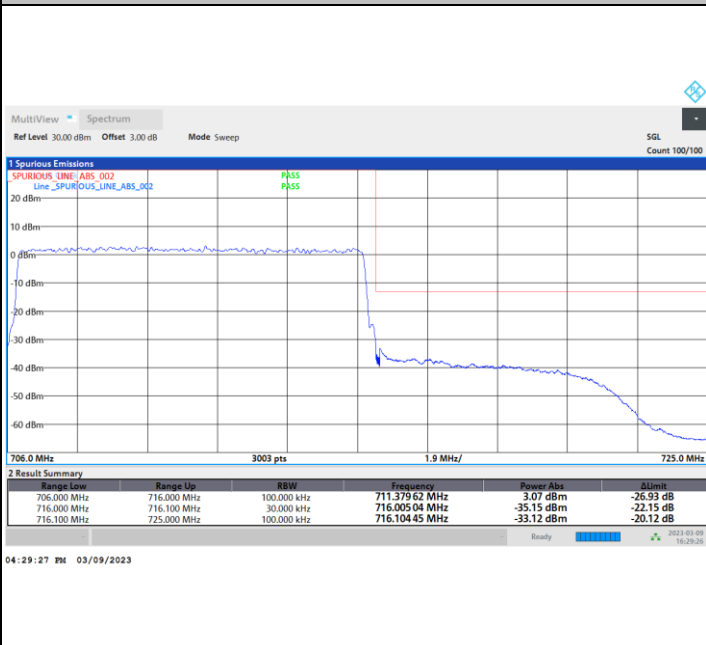
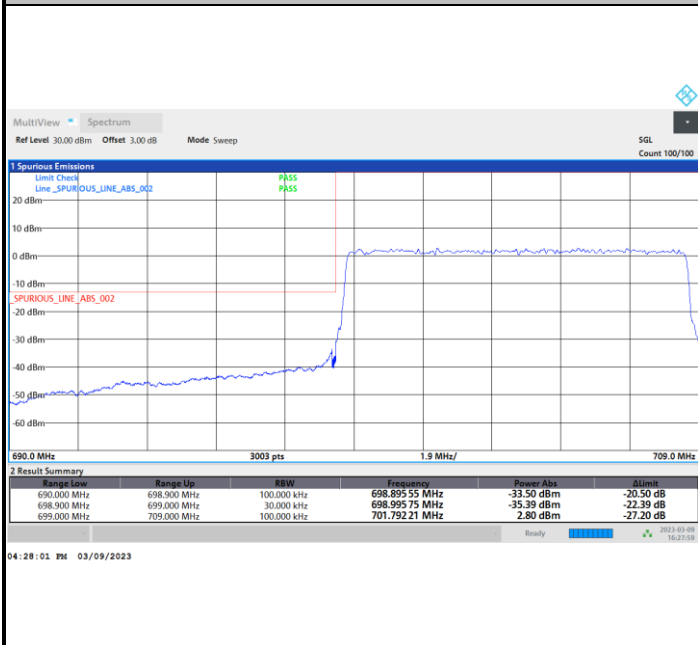
Highest Band Edge



FR1 n12 / 10MHz / CP OFDM / QPSK / Full RB

Lowest Band Edge

Highest Band Edge

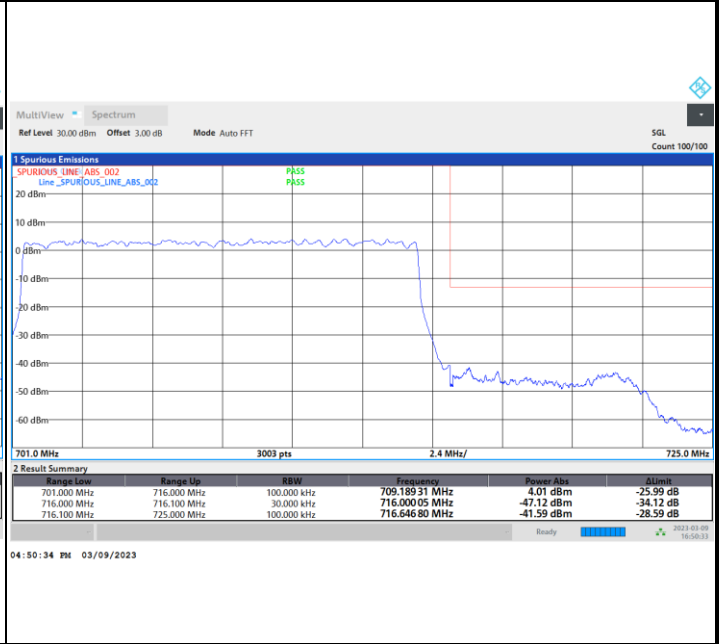
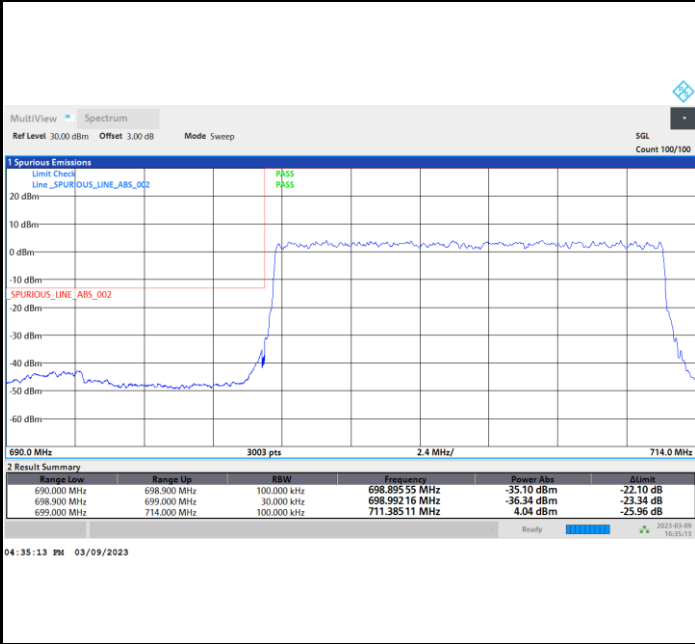




FR1 n12 / 15MHz / DFT-s-OFDM / PI/2 BPSK / Full RB

Lowest Band Edge

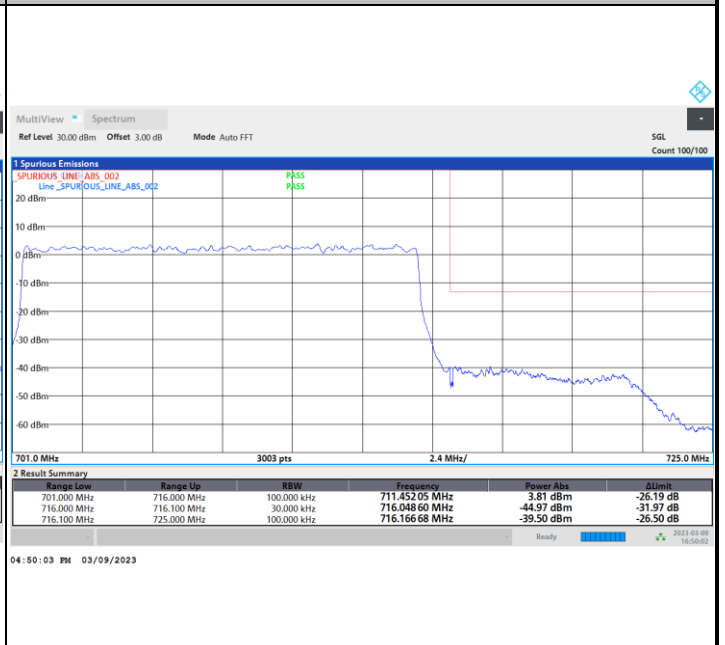
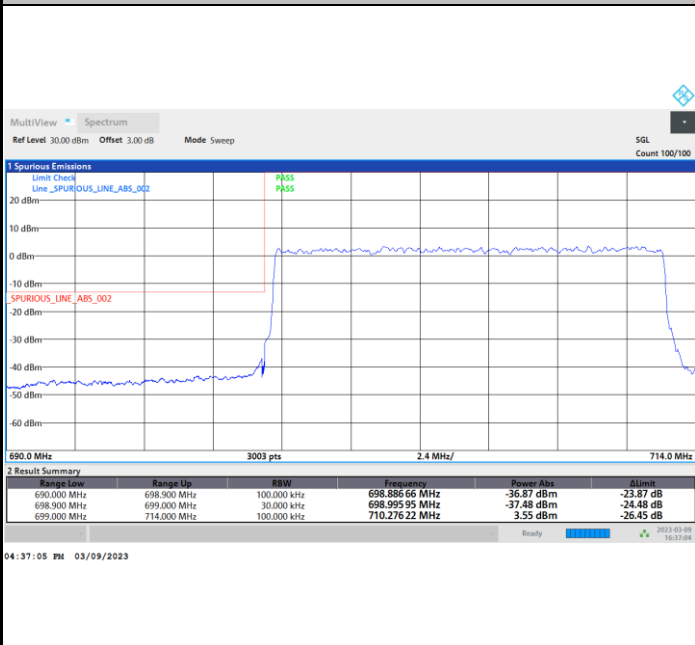
Highest Band Edge



FR1 n12 / 15MHz / DFT-s-OFDM / QPSK / Full RB

Lowest Band Edge

Highest Band Edge

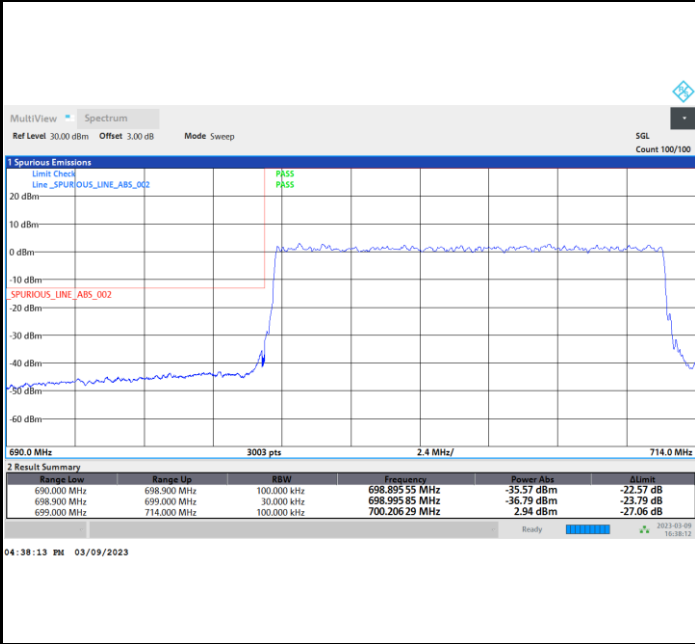




FR1 n12 / 15MHz / DFT-s-OFDM / 16QAM / Full RB

Lowest Band Edge

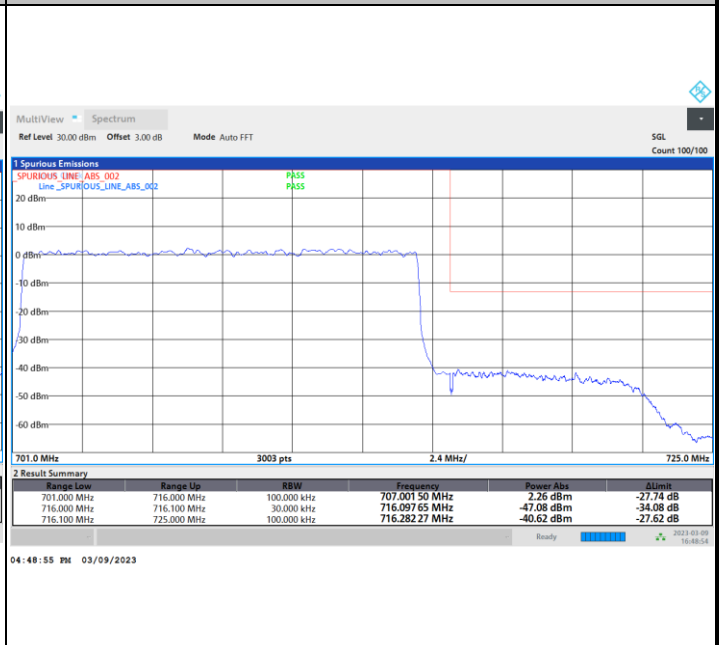
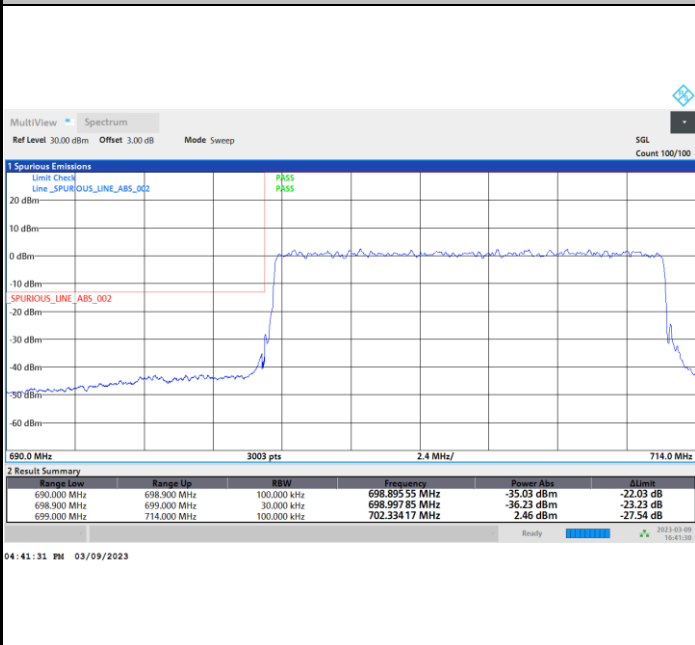
Highest Band Edge



FR1 n12 / 15MHz / DFT-s-OFDM / 64QAM / Full RB

Lowest Band Edge

Highest Band Edge

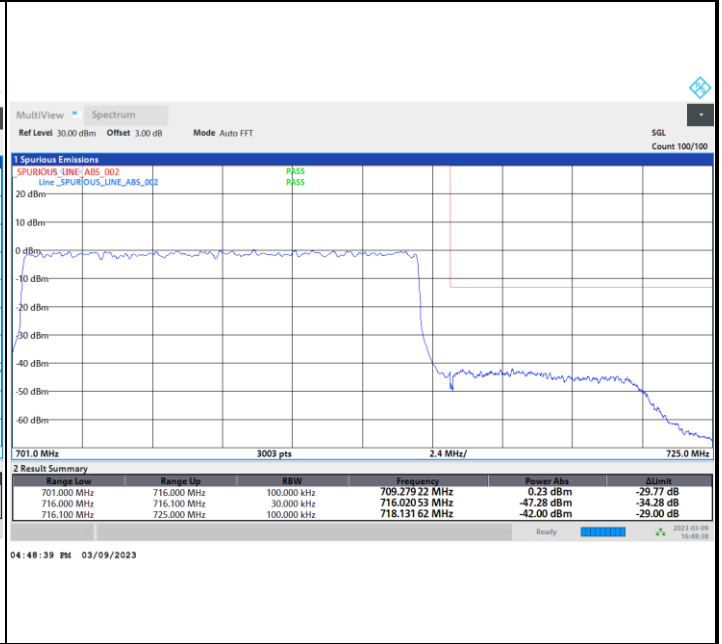
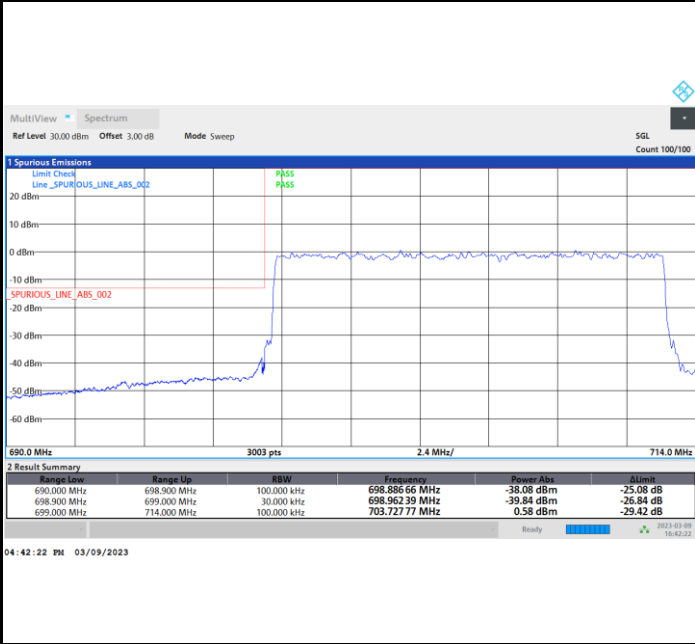




FR1 n12 / 15MHz / DFT-s-OFDM / 256QAM / Full RB

Lowest Band Edge

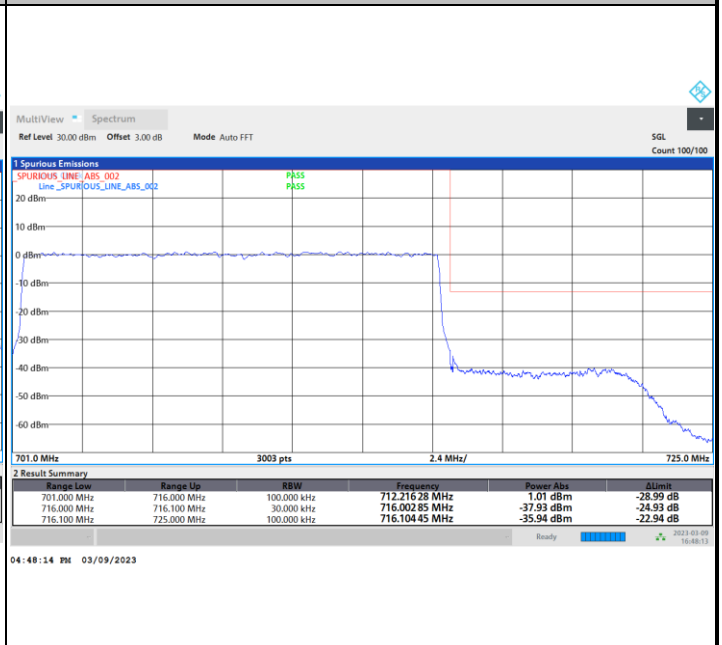
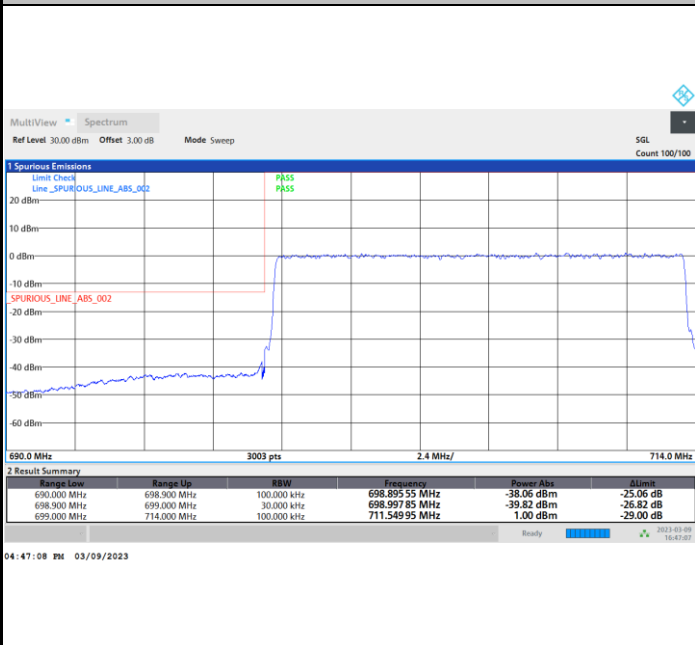
Highest Band Edge



FR1 n12 / 15MHz / CP OFDM / QPSK / Full RB

Lowest Band Edge

Highest Band Edge



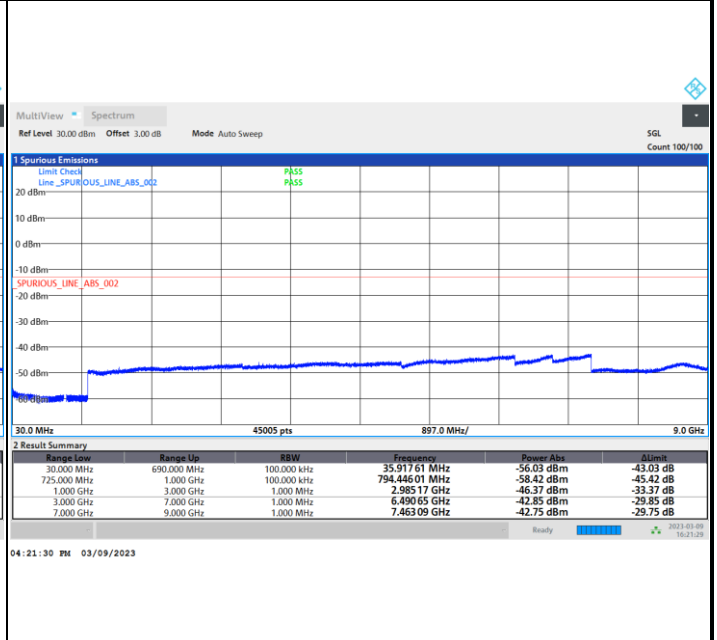
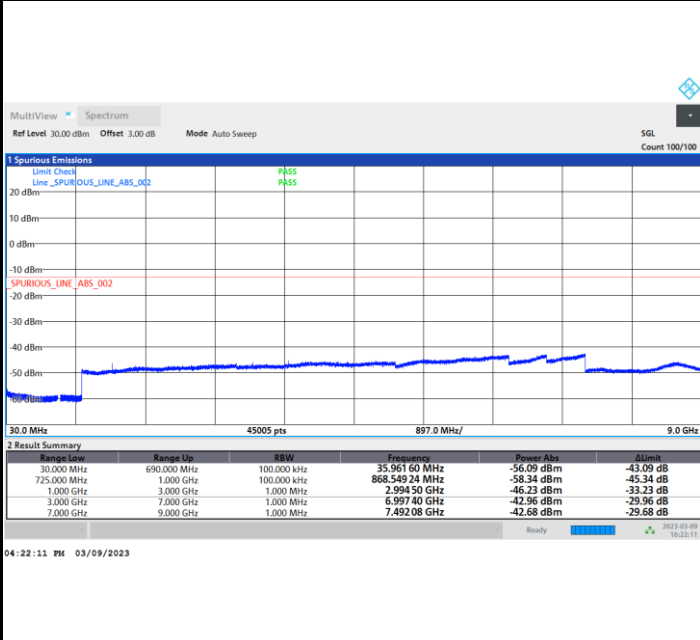


Conducted Spurious Emission

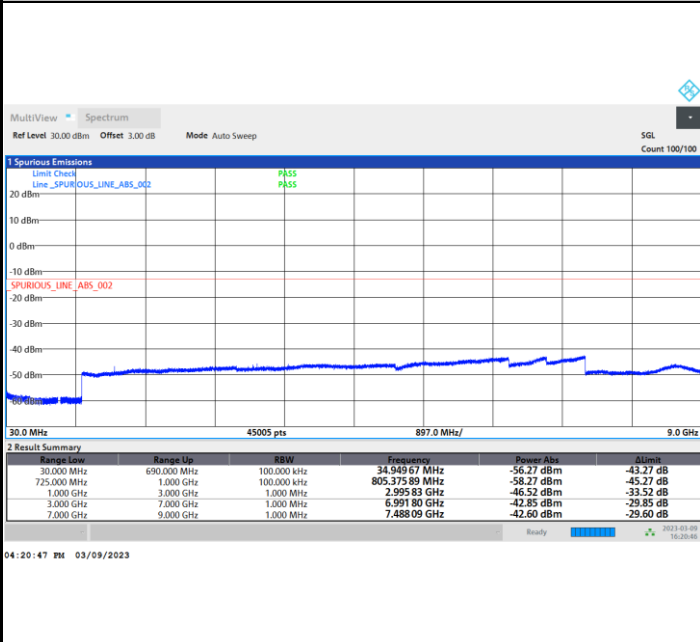
FR1 n12 / 5MHz / DFT-S OFDM / QPSK / 1RB1

Lowest Channel

Middle Channel



Highest Channel





Frequency Stability

| Test Conditions | | FR1 n12 (BPSK) / Middle Channel | Limit |
|---------------------|-------------------|---------------------------------|---------|
| Temperature (°C) | Voltage (Volt) | BW 15MHz | Note 2. |
| | | Deviation (ppm) | Result |
| 50 | Normal Voltage | 0.0074 | PASS |
| 40 | Normal Voltage | 0.0092 | |
| 30 | Normal Voltage | 0.0038 | |
| 20(Ref.) | Normal Voltage | 0.0000 | |
| 10 | Normal Voltage | 0.0030 | |
| 0 | Normal Voltage | 0.0082 | |
| -10 | Normal Voltage | 0.0038 | |
| -20 | Normal Voltage | 0.0060 | |
| -30 | Normal Voltage | 0.0029 | |
| 20 | Maximum Voltage | 0.0071 | |
| 20 | Normal Voltage | 0.0000 | |
| 20 | Battery End Point | 0.0045 | |

Note:

- 1. Normal Voltage = 12 V. ; Battery End Point (BEP) = 9 V. ; Maximum Voltage = 14 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.



FR1 n25

26dB Bandwidth

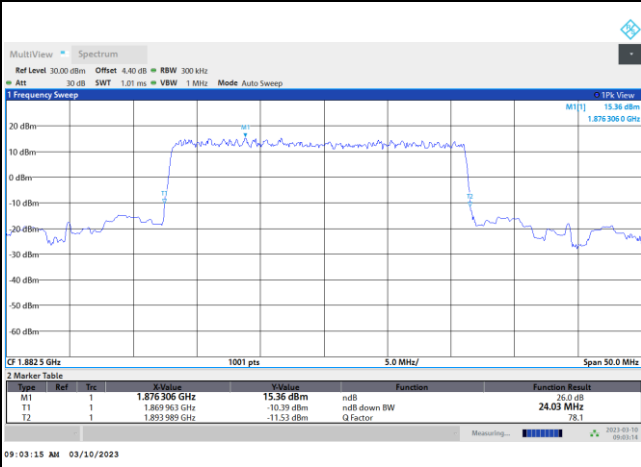
| Mode | FR1 n25 : 26dB BW(MHz) / DFT-S OFDM | | | | | | |
|-----------|-------------------------------------|--|--|--|--|--|--|
| BW | 25MHz | | | | | | |
| Mod. | PI/2 BPSK | | | | | | |
| Middle CH | 24.03 | | | | | | |

| Mode | FR1 n25 : 26dB BW(MHz) / CP OFDM | | | | | | |
|-----------|----------------------------------|--------|--|--|--|--|--|
| BW | 25MHz | | | | | | |
| Mod. | QPSK | 16QAM | | | | | |
| Middle CH | 25.03 | 24.98 | | | | | |
| Mod. | 64QAM | 256QAM | | | | | |
| Middle CH | 24.98 | 24.83 | | | | | |



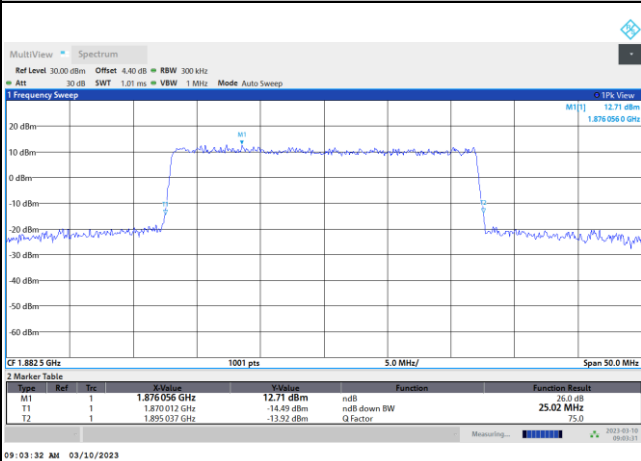
FR1 n25 / 25MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

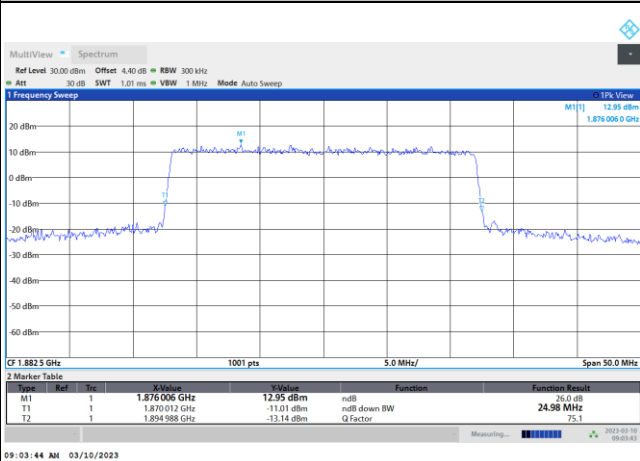


FR1 n25 / 25MHz / CP OFDM / Middle Channel / Full RB

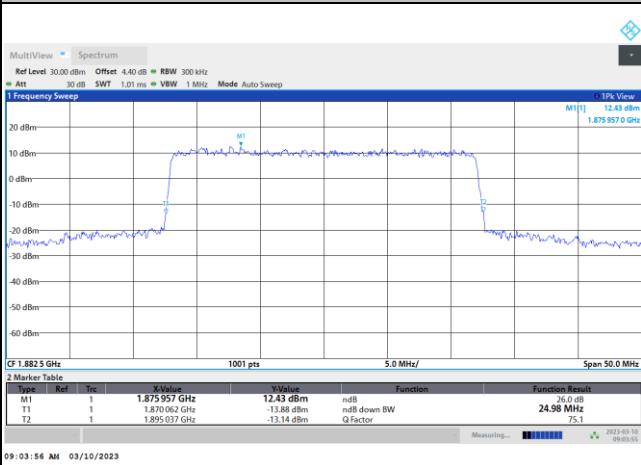
QPSK



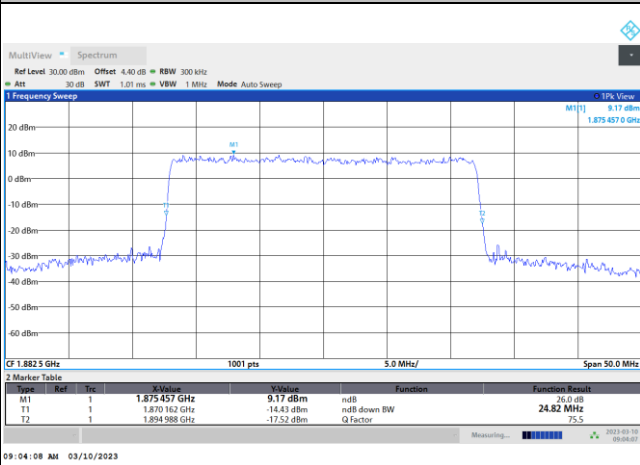
16QAM



64QAM



256QAM





Occupied Bandwidth

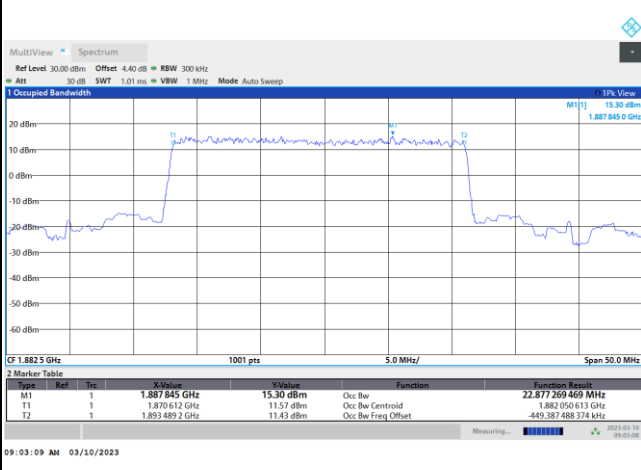
| | | | | | | | |
|------------------|---|--|--|--|--|--|--|
| Mode | FR1 n25 : 99%OBW(MHz) / DFT-S OFDM | | | | | | |
| BW | 25MHz | | | | | | |
| Mod. | PI/2 BPSK | | | | | | |
| Middle CH | 22.87 | | | | | | |

| | | | | | | | |
|------------------|---|---------------|--|--|--|--|--|
| Mode | FR1 n25 : 99%OBW (MHz) / CP OFDM | | | | | | |
| BW | 25MHz | | | | | | |
| Mod. | QPSK | 16QAM | | | | | |
| Middle CH | 23.80 | 23.79 | | | | | |
| Mod. | 64QAM | 256QAM | | | | | |
| Middle CH | 23.78 | 23.79 | | | | | |



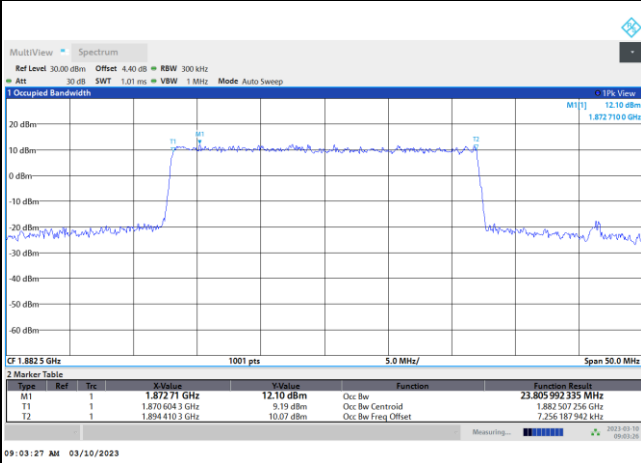
FR1 n25 / 25MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

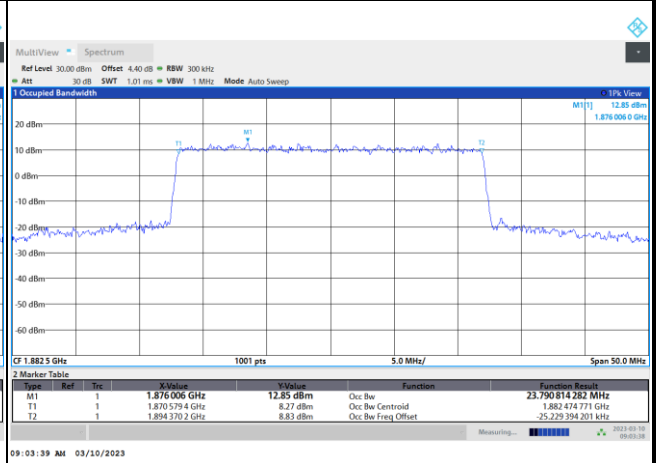


FR1 n25 / 25MHz / CP OFDM / Middle Channel / Full RB

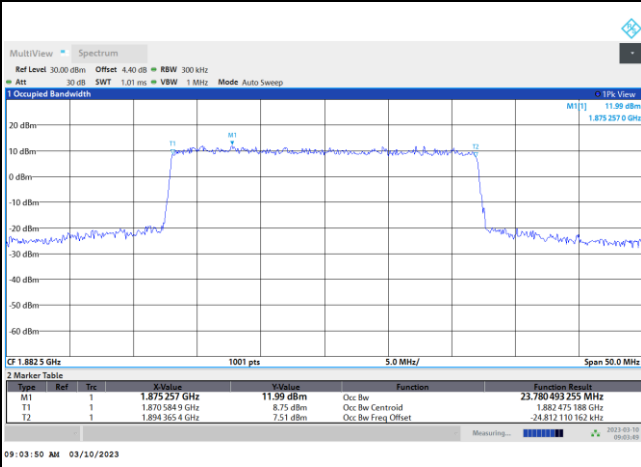
QPSK



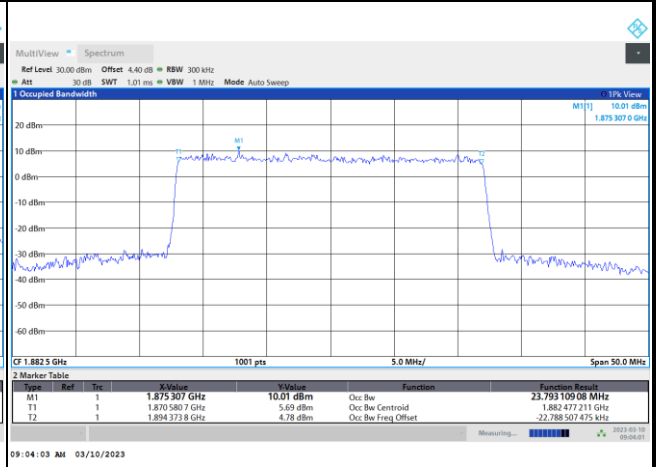
16QAM



64QAM



256QAM



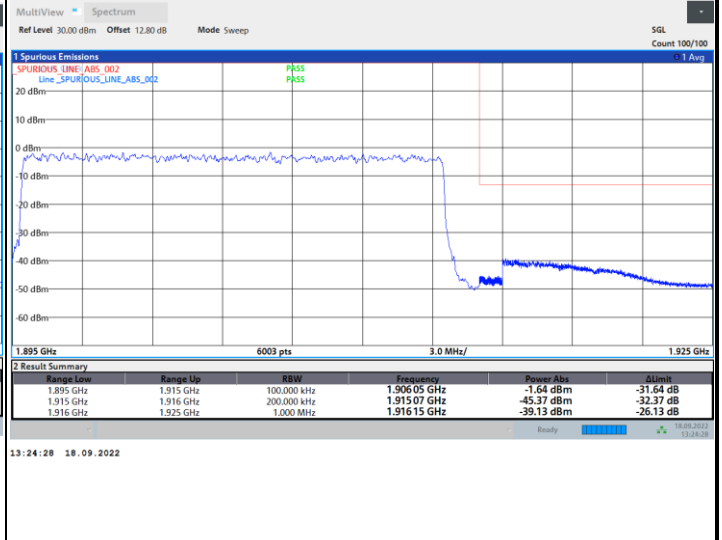
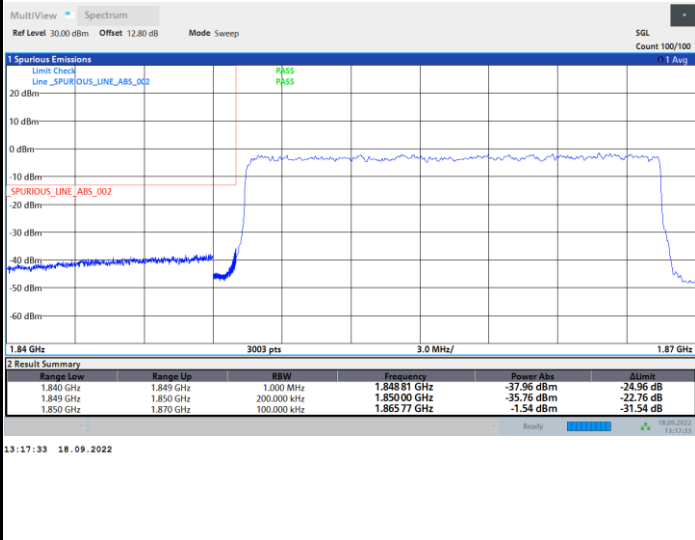


Conducted Band Edge

FR1 n25 / 20MHz / DFT-s-OFDM / 256QAM

Lowest Band Edge / Full RB

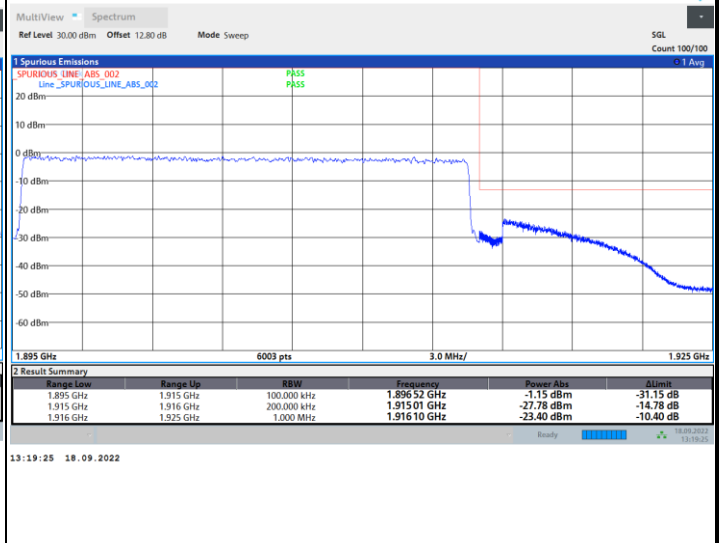
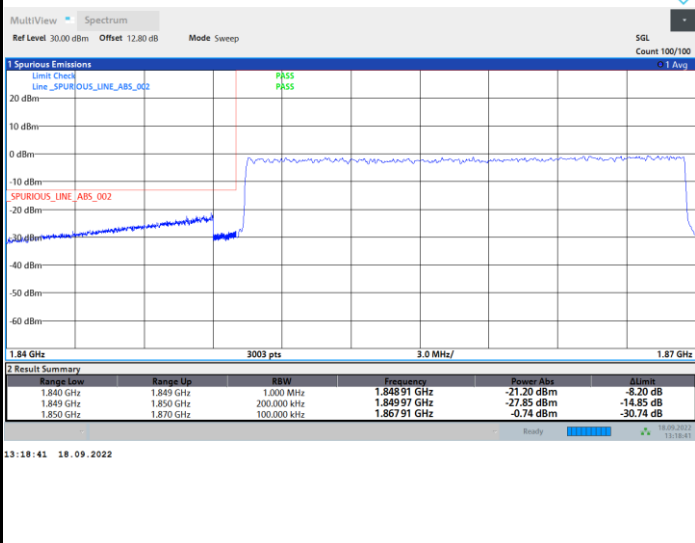
Highest Band Edge / Full RB



FR1 n25 / 20MHz / CP OFDM / QPSK / Full RB

Lowest Band Edge

Highest Band Edge

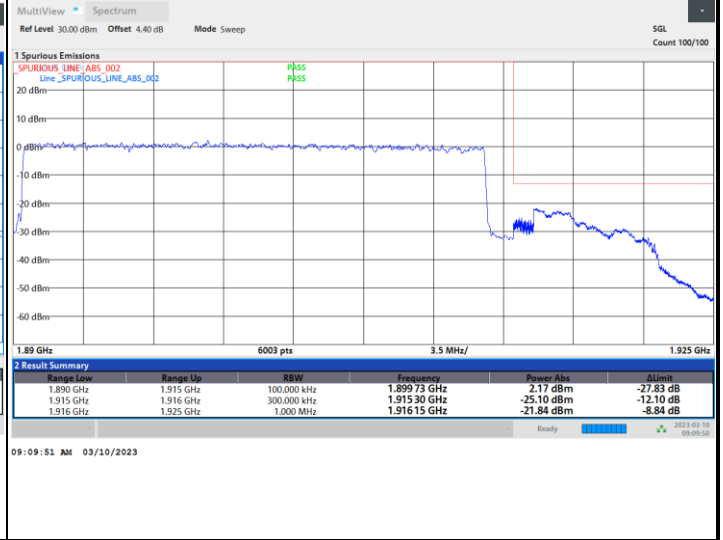
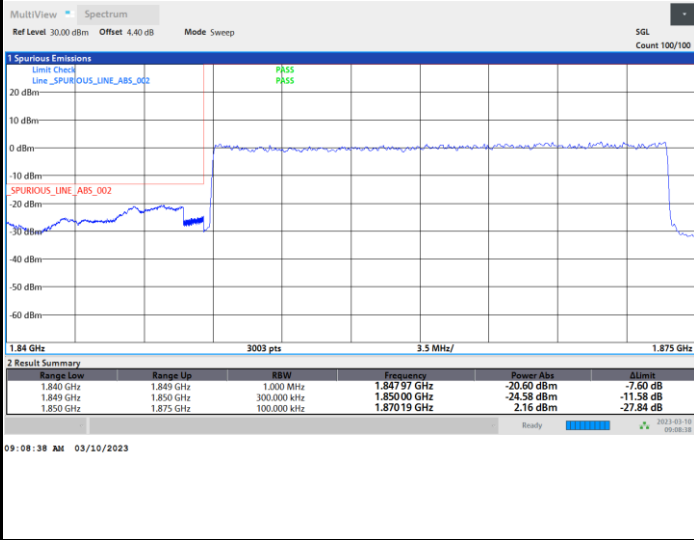




FR1 n25 / 25MHz / DFT-s-OFDM / PI/2 BPSK

Lowest Band Edge / Full RB

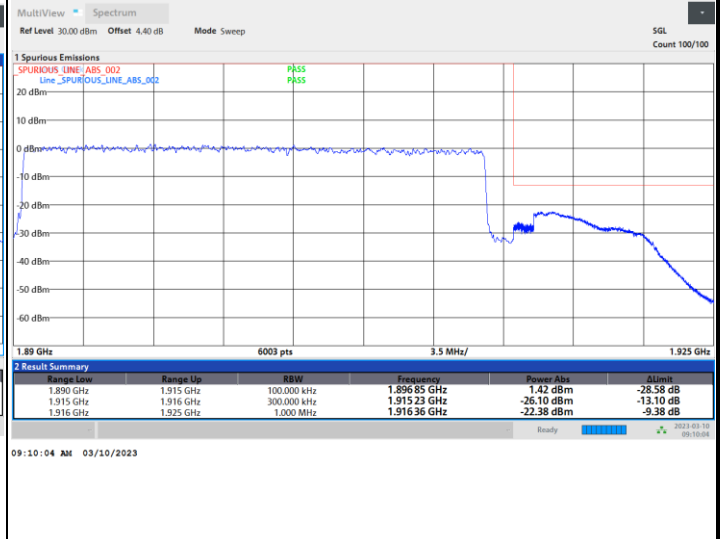
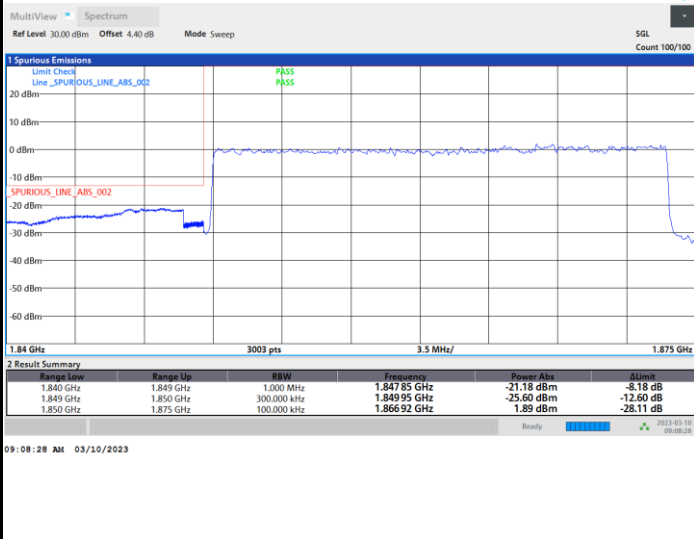
Highest Band Edge / Full RB



FR1 n25 / 25MHz / DFT-s-OFDM / QPSK

Lowest Band Edge / Full RB

Highest Band Edge / Full RB

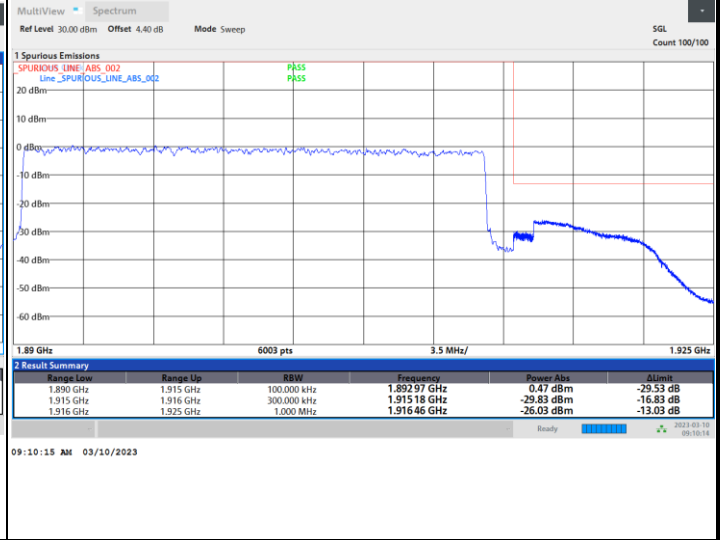
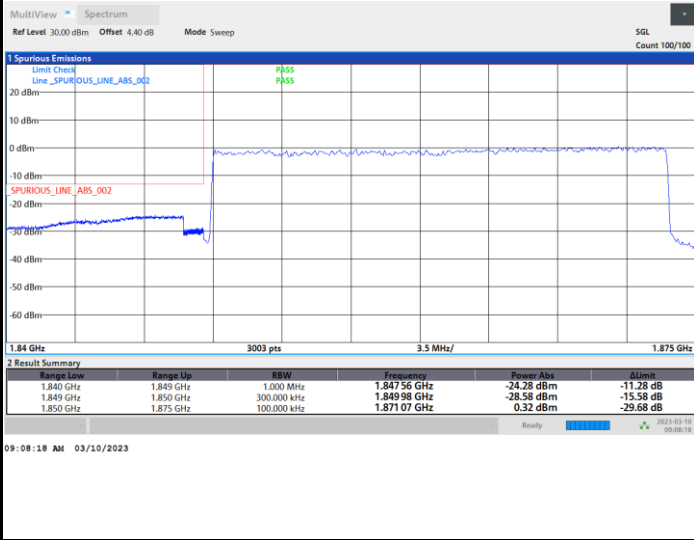




FR1 n25 / 25MHz / DFT-s-OFDM / 16QAM

Lowest Band Edge / Full RB

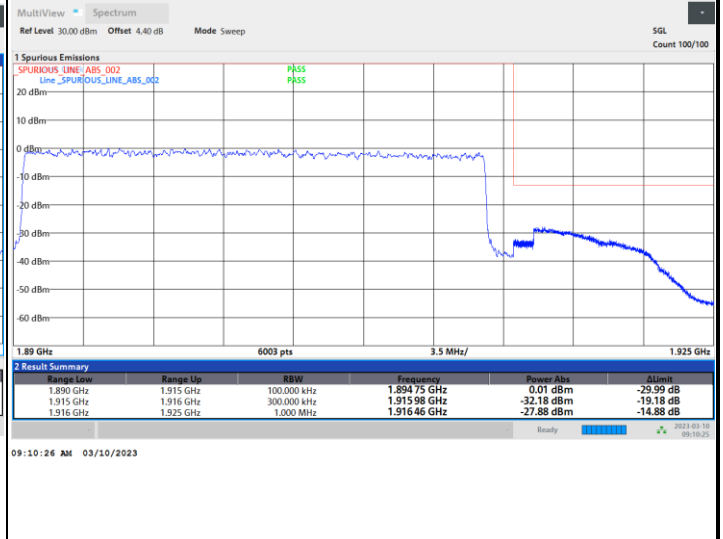
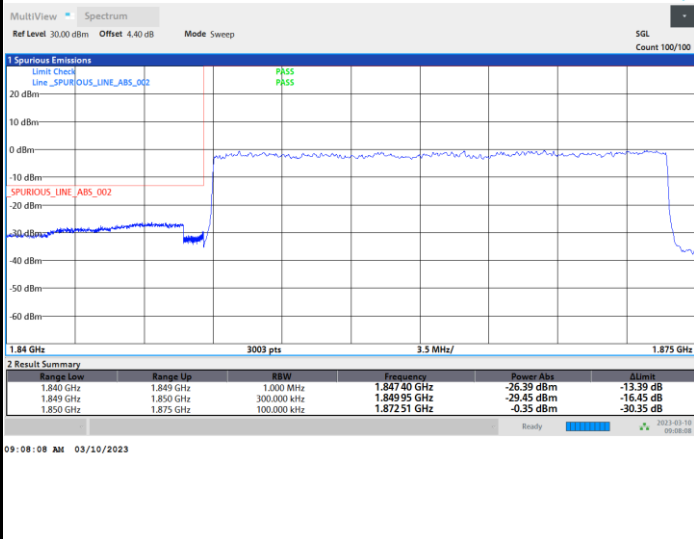
Highest Band Edge / Full RB



FR1 n25 / 25MHz / DFT-s-OFDM / 64QAM

Lowest Band Edge / Full RB

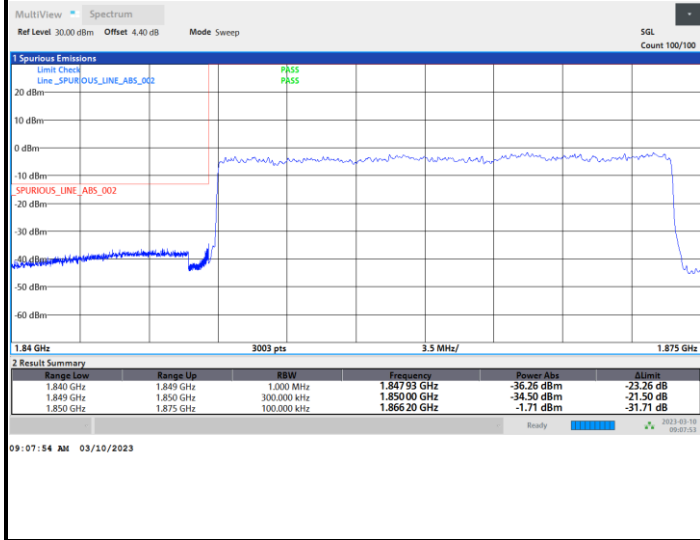
Highest Band Edge / Full RB



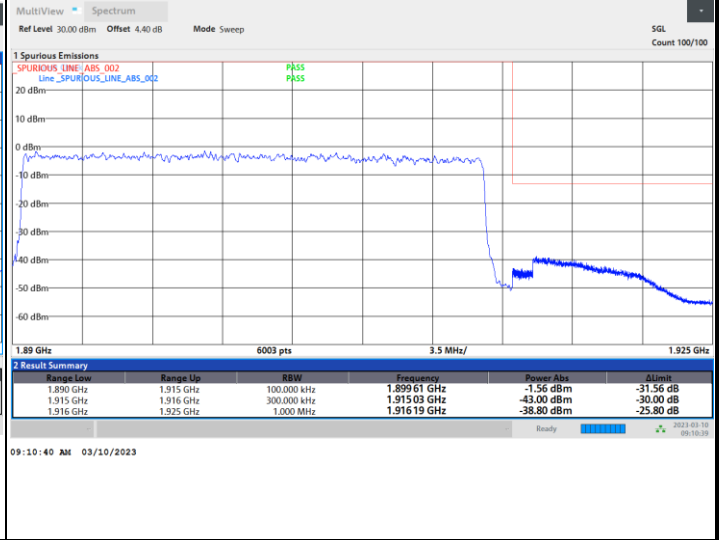


FR1 n25 / 25MHz / DFT-s-OFDM / 256QAM

Lowest Band Edge / Full RB

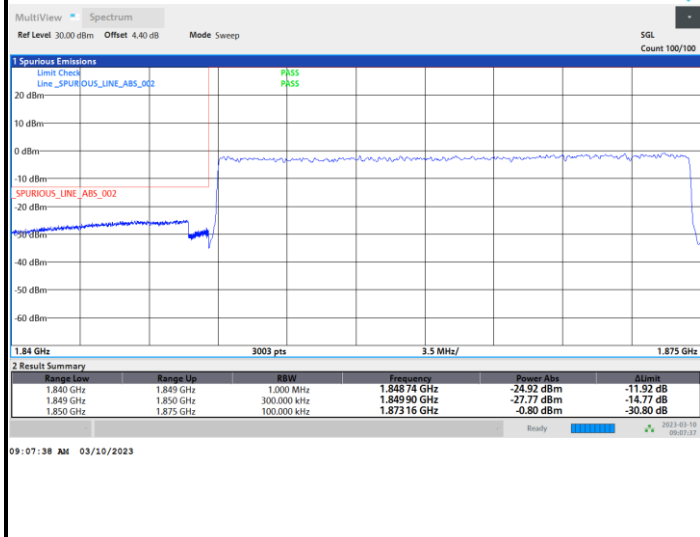


Highest Band Edge / Full RB

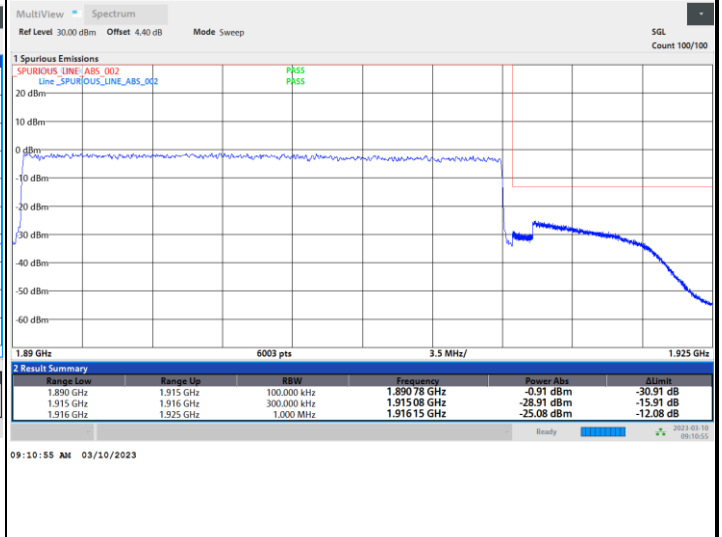


FR1 n25 / 25MHz / CP OFDM / QPSK / Full RB

Lowest Band Edge



Highest Band Edge

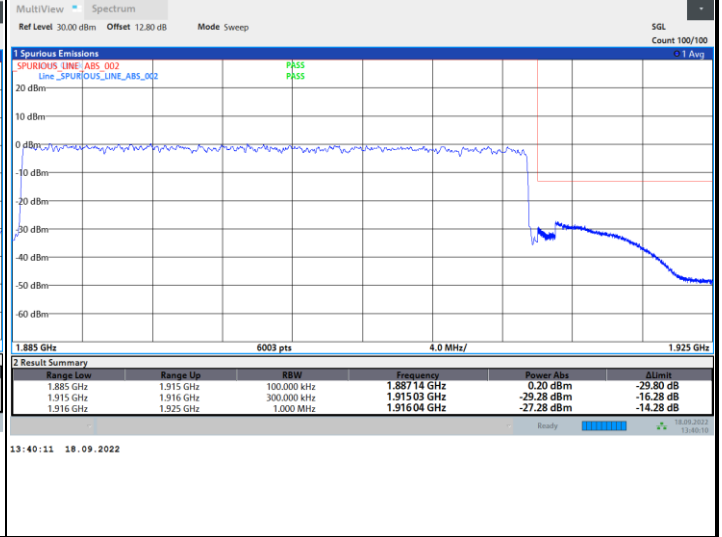
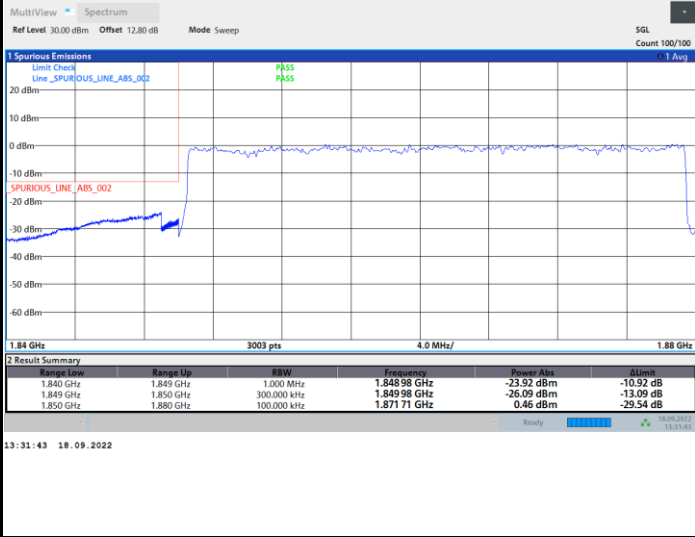




FR1 n25 / 30MHz / DFT-s-OFDM / PI/2 BPSK

Lowest Band Edge / Full RB

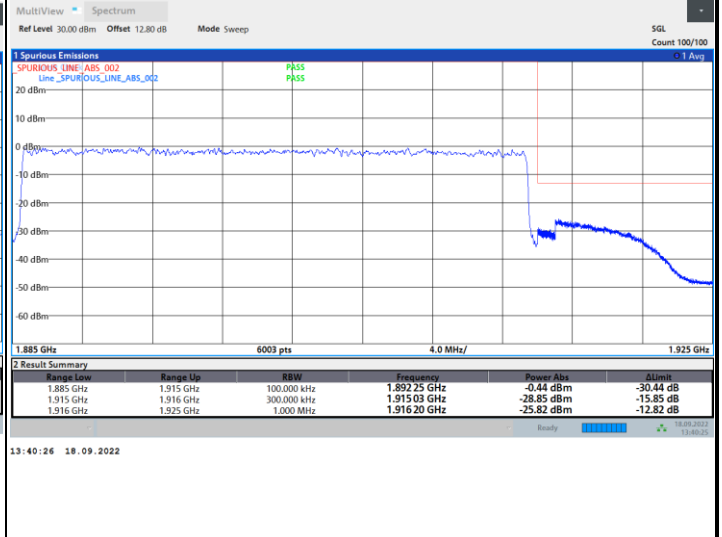
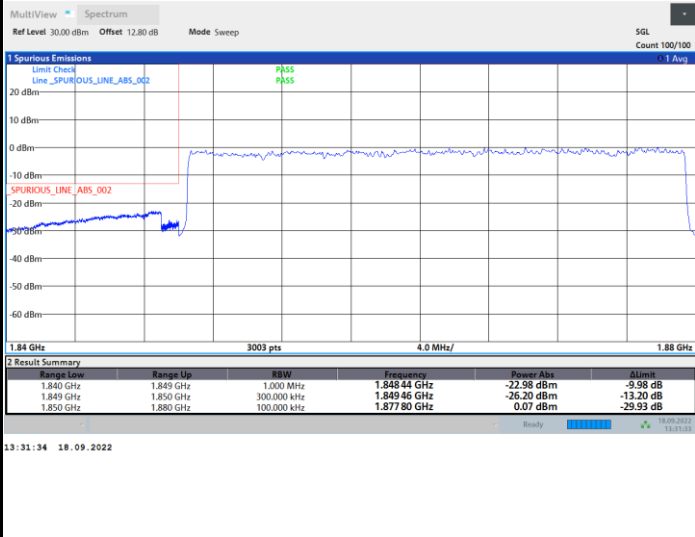
Highest Band Edge / Full RB



FR1 n25 / 30MHz / DFT-s-OFDM / QPSK

Lowest Band Edge / Full RB

Highest Band Edge / Full RB





Frequency Stability

| Test Conditions | | FR1 n25 (BPSK) / Middle Channel | Limit |
|---------------------|-------------------|---------------------------------|---------|
| Temperature (°C) | Voltage (Volt) | BW 20MHz | Note 2. |
| | | Deviation (ppm) | Result |
| 50 | Normal Voltage | 0.0041 | PASS |
| 40 | Normal Voltage | 0.0067 | |
| 30 | Normal Voltage | 0.0006 | |
| 20(Ref.) | Normal Voltage | 0.0000 | |
| 10 | Normal Voltage | 0.0027 | |
| 0 | Normal Voltage | 0.0057 | |
| -10 | Normal Voltage | 0.0133 | |
| -20 | Normal Voltage | 0.0080 | |
| -30 | Normal Voltage | 0.0159 | |
| 20 | Maximum Voltage | 0.0020 | |
| 20 | Normal Voltage | 0.0000 | |
| 20 | Battery End Point | 0.0029 | |

Note:

- 1. Normal Voltage = 12 V. ; Battery End Point (BEP) = 9 V. ; Maximum Voltage = 14 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.



FR1 n38

Peak-to-Average Ratio

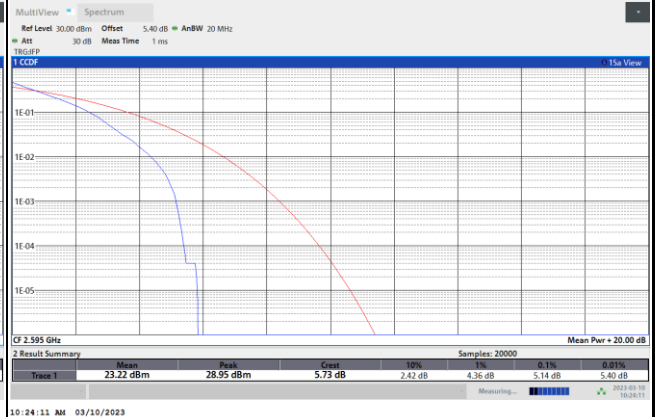
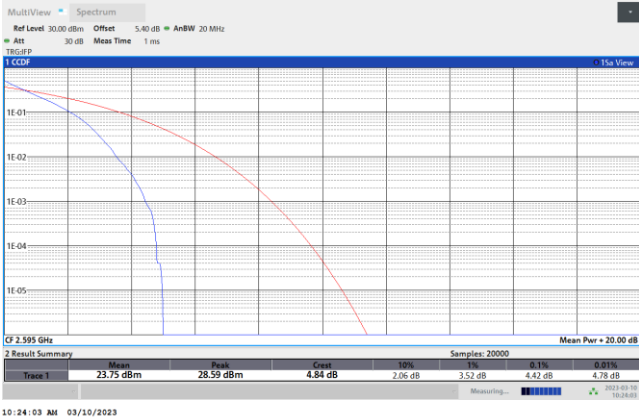
| Mode | FR1 n38 / 20MHz / DFT-S OFDM | | | | |
|-----------|------------------------------|---------|---------|---------|-------------|
| Mod. | PI/2 BPSK | QPSK | 16QAM | 64QAM | Limit: 13dB |
| RB Size | Full RB | Full RB | Full RB | Full RB | Result |
| Middle CH | 4.42 | 5.14 | 6.18 | 6.50 | PASS |
| Mode | FR1 n38 / 20MHz / DFT-S OFDM | | | | |
| Mod. | 256QAM | | | | Limit: 13dB |
| RB Size | Full RB | | | | Result |
| Middle CH | 6.66 | | | | PASS |



FR1 n38 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

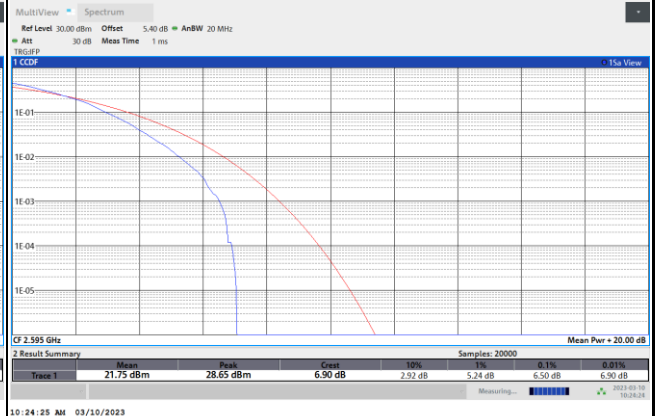
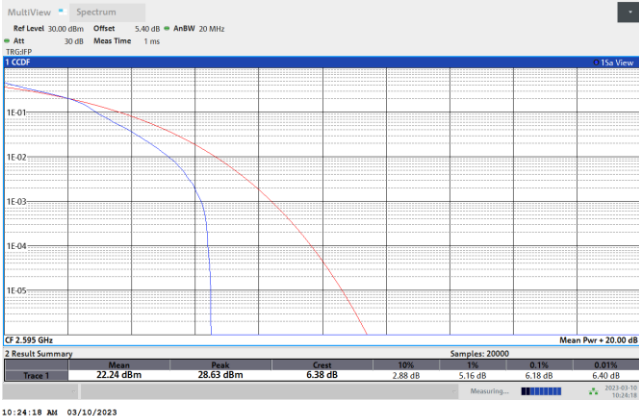
PI/2 BPSK

QPSK

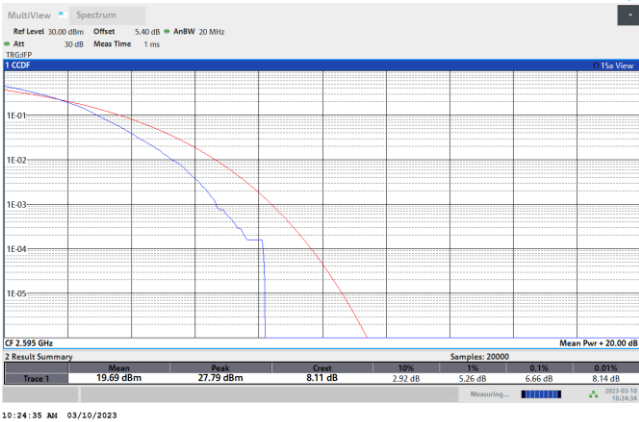


16QAM

64QAM



256QAM





26dB Bandwidth

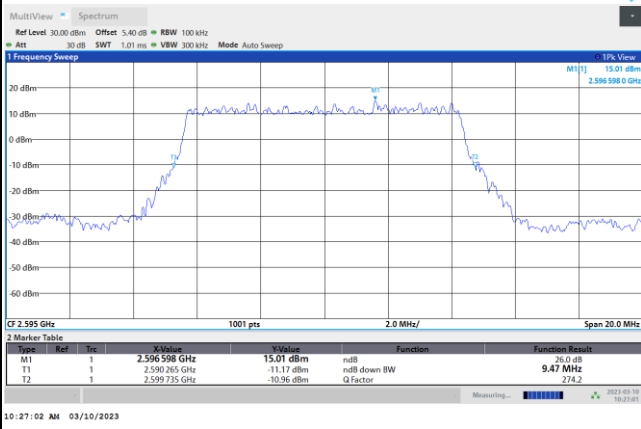
| Mode | FR1 n38 : 26dB BW(MHz) / DFT-S OFDM | | | | |
|-----------|-------------------------------------|-----------|-----------|-----------|-----------|
| BW | 10MHz | 15MHz | 20MHz | 30MHz | 40MHz |
| Mod. | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK |
| Middle CH | 9.47 | 14.36 | 18.98 | 28.41 | 38.52 |

| Mode | FR1 n38 : 26dB BW(MHz) / CP OFDM | | | | | | | | | |
|-----------|----------------------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| BW | 10MHz | | 15MHz | | 20MHz | | 30MHz | | 40MHz | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Middle CH | 9.81 | 9.93 | 14.93 | 15.20 | 19.54 | 19.90 | 29.49 | 29.31 | 40.36 | 40.60 |
| Mod. | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM |
| Middle CH | 9.69 | 9.61 | 15.05 | 14.75 | 19.82 | 19.54 | 29.49 | 29.31 | 40.44 | 40.52 |



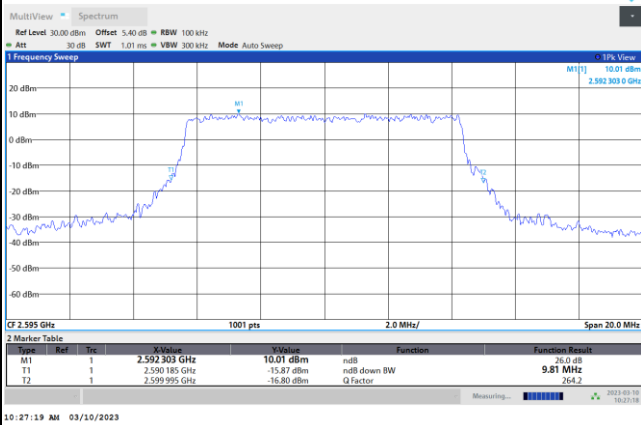
FR1 n38 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

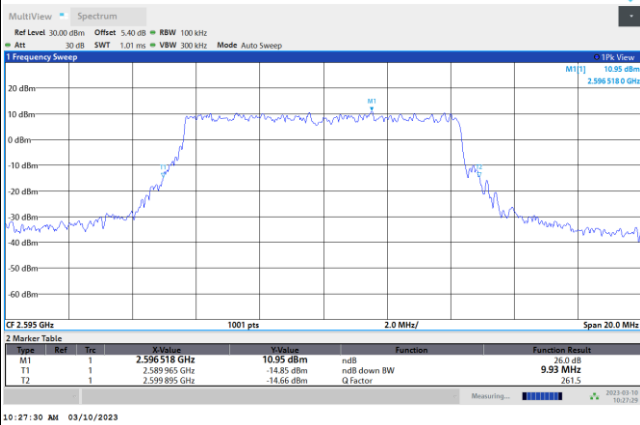


FR1 n38 / 10MHz / CP OFDM / Middle Channel / Full RB

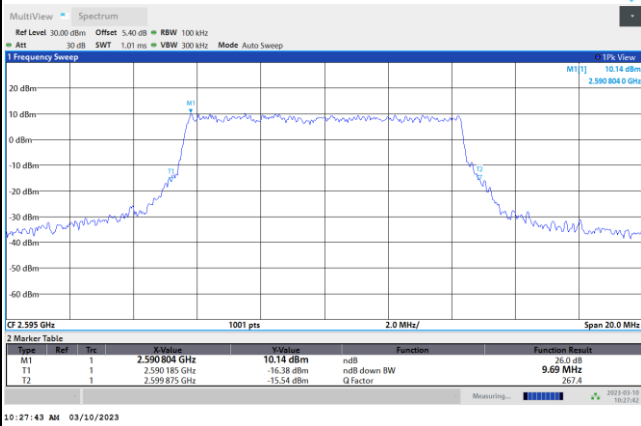
QPSK



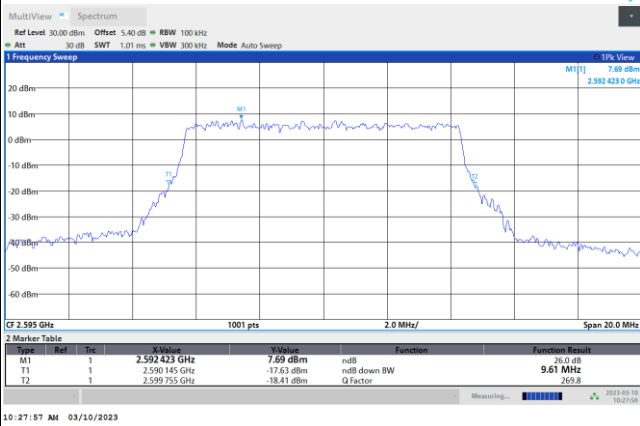
16QAM



64QAM



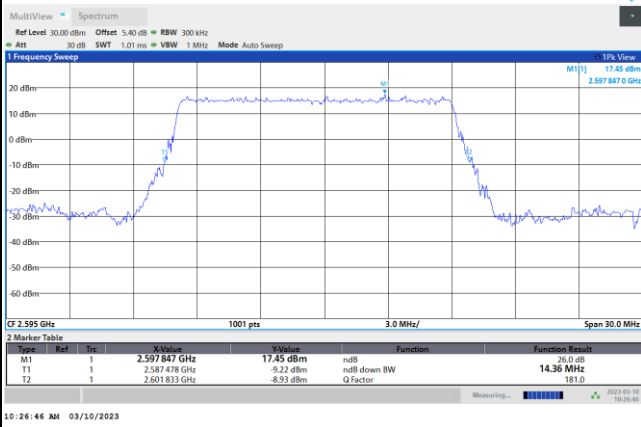
256QAM





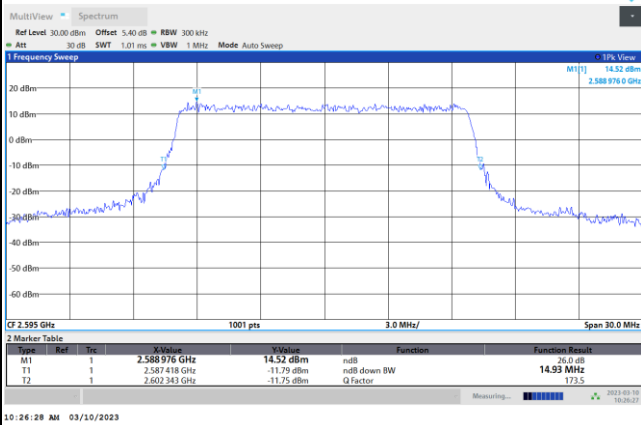
FR1 n38 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

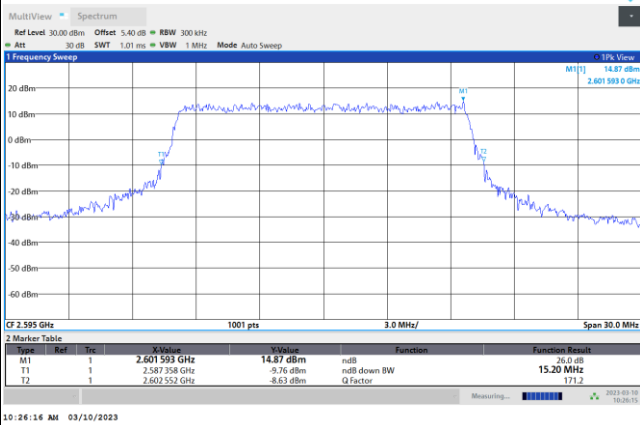


FR1 n38 / 15MHz / CP OFDM / Middle Channel / Full RB

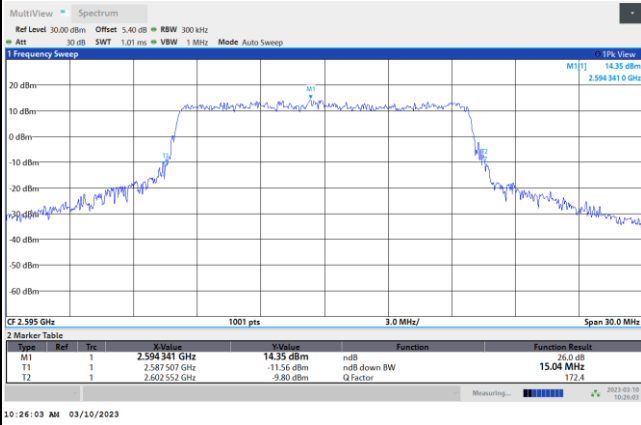
QPSK



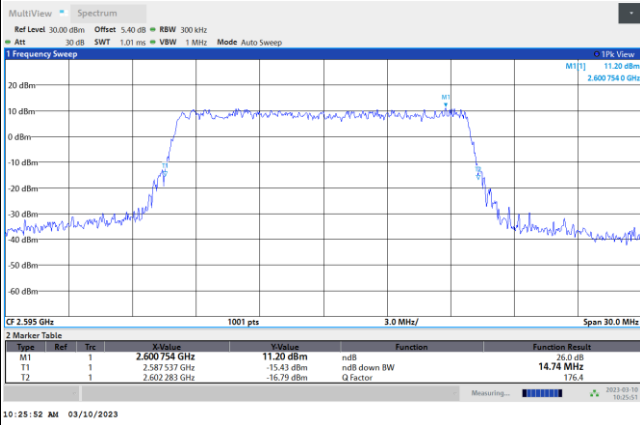
16QAM



64QAM



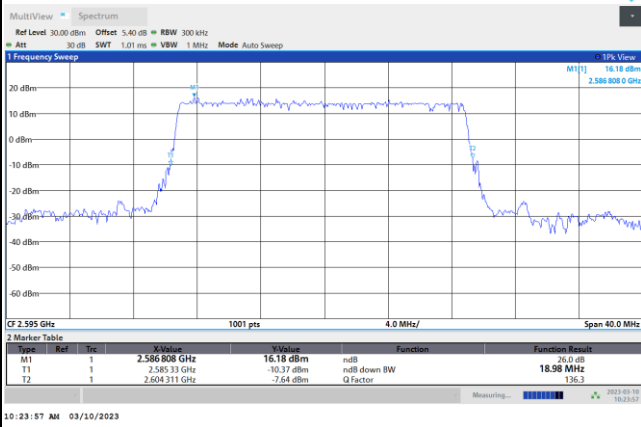
256QAM





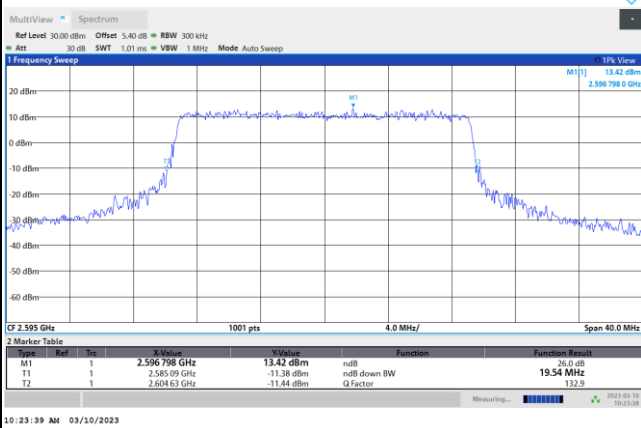
FR1 n38 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

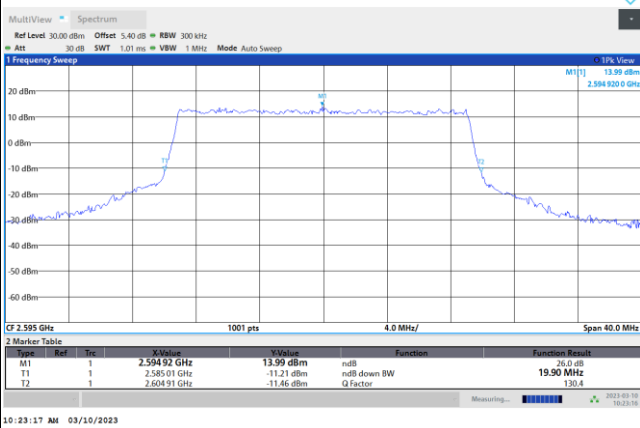


FR1 n38 / 20MHz / CP OFDM / Middle Channel / Full RB

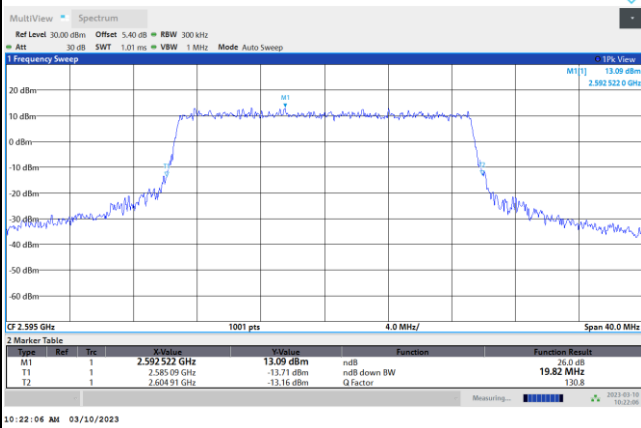
QPSK



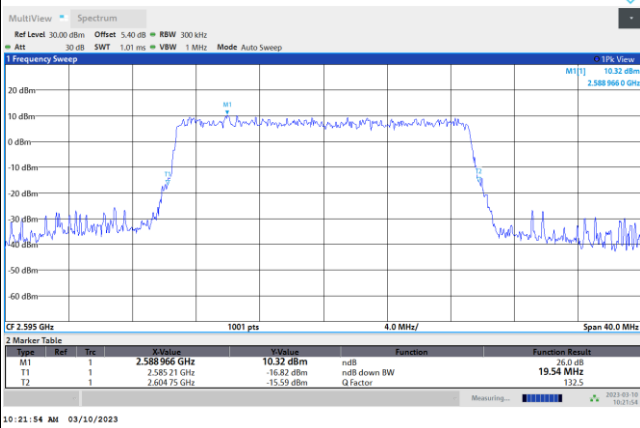
16QAM



64QAM



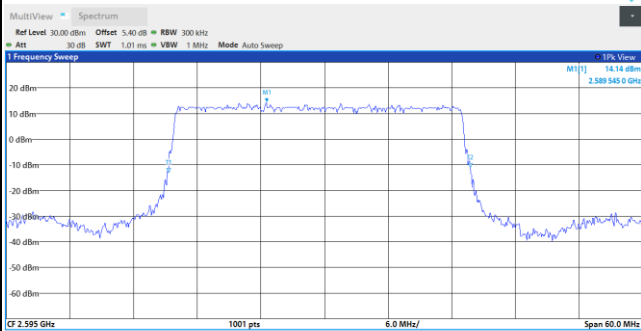
256QAM





FR1 n38 / 30MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

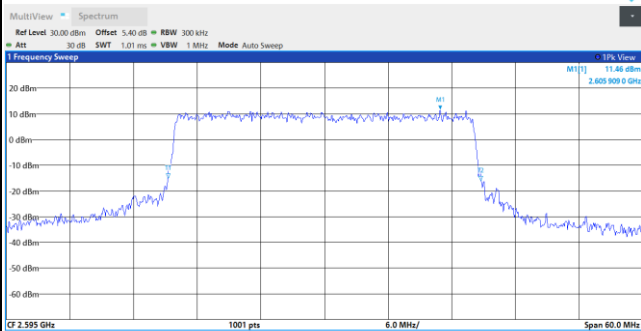


| Type | Ref | Trc | X-Value | Y-Value | Function | Function Result |
|------|-----|-----|---------------|------------|--------------|-----------------|
| M1 | 1 | | 2.589 545 GHz | 14.14 dBm | n/dB | 26.0 dB |
| T1 | 1 | | 2.580 315 GHz | -13.16 dBm | n/dB down BW | 28.41 MHz |
| T2 | 1 | | 2.608 726 GHz | -11.12 dBm | Q Factor | 51.1 |

10:20:19 AM 03/10/2023

FR1 n38 / 30MHz / CP OFDM / Middle Channel / Full RB

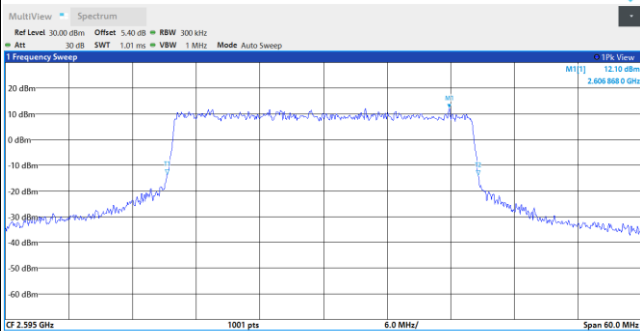
QPSK



| Type | Ref | Trc | X-Value | Y-Value | Function | Function Result |
|------|-----|-----|---------------|------------|--------------|-----------------|
| M1 | 1 | | 2.605 909 GHz | 11.46 dBm | n/dB | 26.0 dB |
| T1 | 1 | | 2.580 255 GHz | -14.95 dBm | n/dB down BW | 29.49 MHz |
| T2 | 1 | | 2.609 745 GHz | -15.93 dBm | Q Factor | 88.4 |

10:20:41 AM 03/10/2023

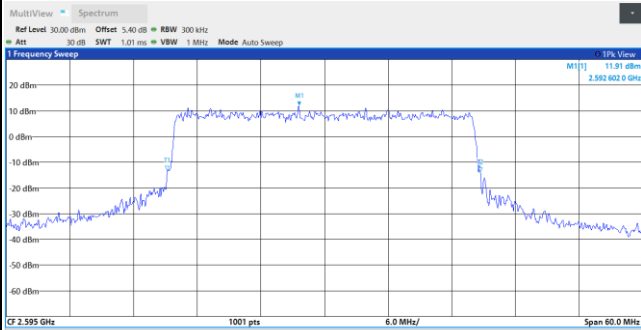
16QAM



| Type | Ref | Trc | X-Value | Y-Value | Function | Function Result |
|------|-----|-----|---------------|------------|--------------|-----------------|
| M1 | 1 | | 2.606 868 GHz | 12.10 dBm | n/dB | 26.0 dB |
| T1 | 1 | | 2.580 255 GHz | -13.54 dBm | n/dB down BW | 29.31 MHz |
| T2 | 1 | | 2.609 565 GHz | -13.77 dBm | Q Factor | 88.9 |

10:20:58 AM 03/10/2023

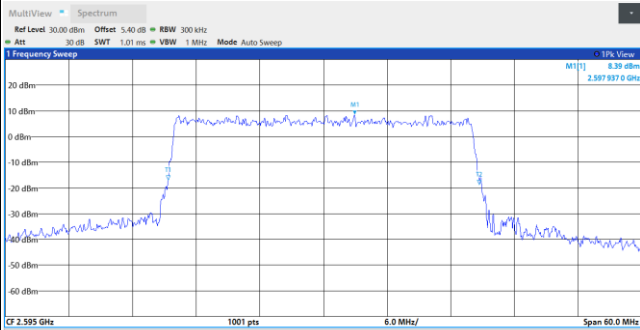
64QAM



| Type | Ref | Trc | X-Value | Y-Value | Function | Function Result |
|------|-----|-----|---------------|------------|--------------|-----------------|
| M1 | 1 | | 2.592 602 GHz | 11.91 dBm | n/dB | 26.0 dB |
| T1 | 1 | | 2.580 195 GHz | -13.21 dBm | n/dB down BW | 29.49 MHz |
| T2 | 1 | | 2.609 685 GHz | -13.76 dBm | Q Factor | 87.3 |

10:21:11 AM 03/10/2023

256QAM



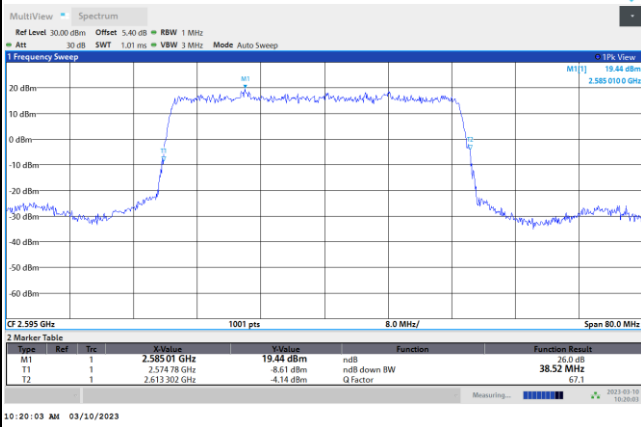
| Type | Ref | Trc | X-Value | Y-Value | Function | Function Result |
|------|-----|-----|---------------|------------|--------------|-----------------|
| M1 | 1 | | 2.597 937 GHz | 8.39 dBm | n/dB | 26.0 dB |
| T1 | 1 | | 2.580 375 GHz | -16.90 dBm | n/dB down BW | 29.31 MHz |
| T2 | 1 | | 2.609 685 GHz | -18.74 dBm | Q Factor | 88.6 |

10:21:24 AM 03/10/2023



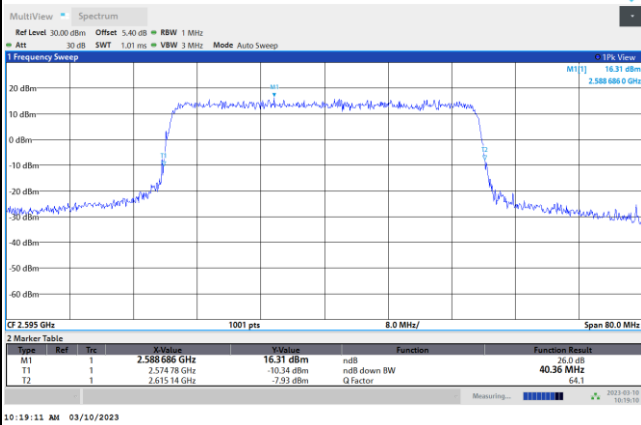
FR1 n38 / 40MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

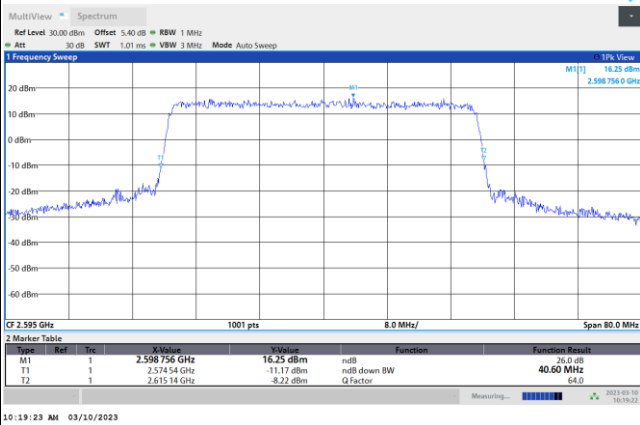


FR1 n38 / 40MHz / CP OFDM / Middle Channel / Full RB

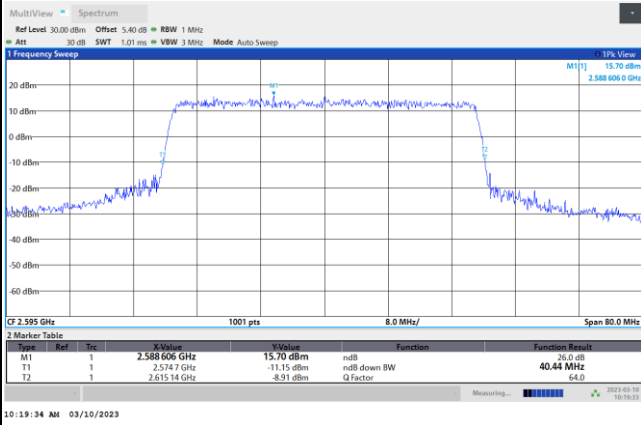
QPSK



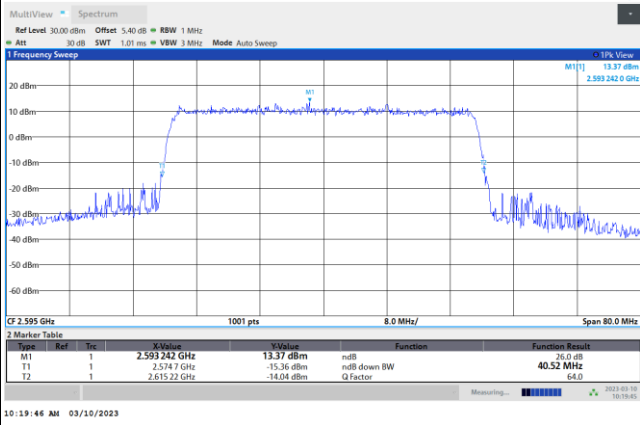
16QAM



64QAM



256QAM





Occupied Bandwidth

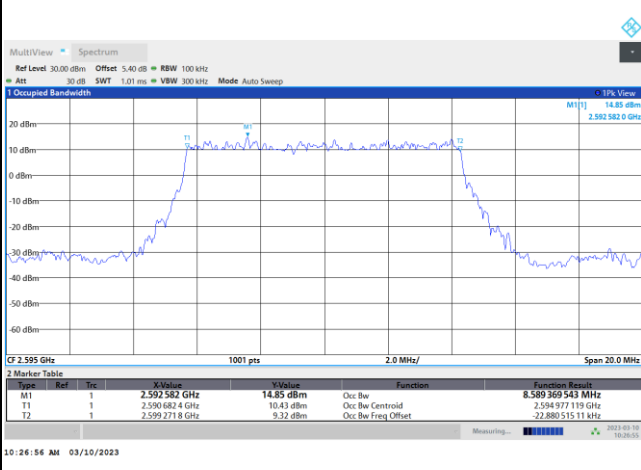
| Mode | FR1 n38 : OB BW(MHz) / DFT-S OFDM | | | | |
|-----------|-----------------------------------|-----------|-----------|-----------|-----------|
| BW | 10MHz | 15MHz | 20MHz | 30MHz | 40MHz |
| Mod. | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK | PI/2 BPSK |
| Middle CH | 8.58 | 12.91 | 17.87 | 26.76 | 35.95 |

| Mode | FR1 n38 : OB BW(MHz) / CP OFDM | | | | | | | | | |
|-----------|--------------------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| BW | 10MHz | | 15MHz | | 20MHz | | 30MHz | | 40MHz | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Middle CH | 8.61 | 8.61 | 13.65 | 13.67 | 18.19 | 18.22 | 27.85 | 27.82 | 38.00 | 38.18 |
| Mod. | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM |
| Middle CH | 8.60 | 8.58 | 13.64 | 13.64 | 18.25 | 18.23 | 27.89 | 27.87 | 37.97 | 38.17 |



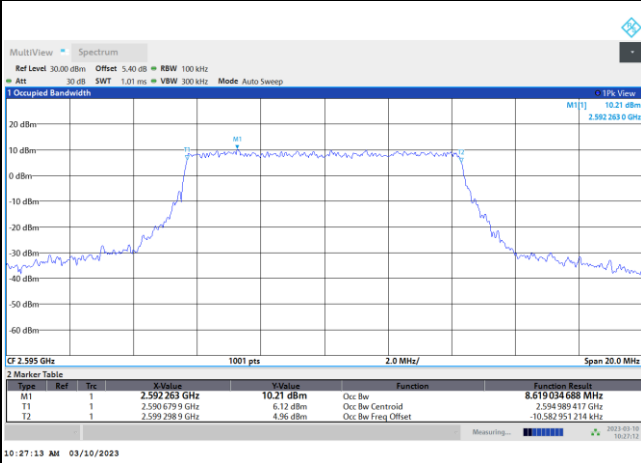
FR1 n38 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

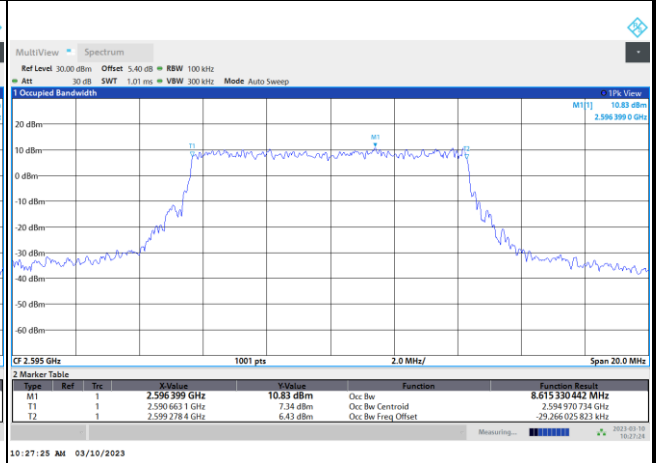


FR1 n38 / 10MHz / CP OFDM / Middle Channel / Full RB

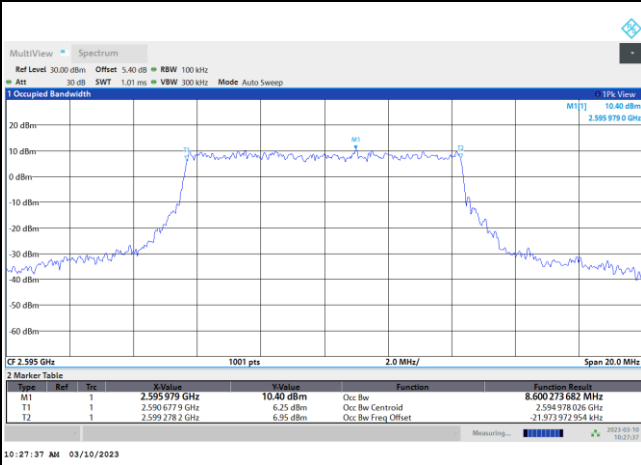
QPSK



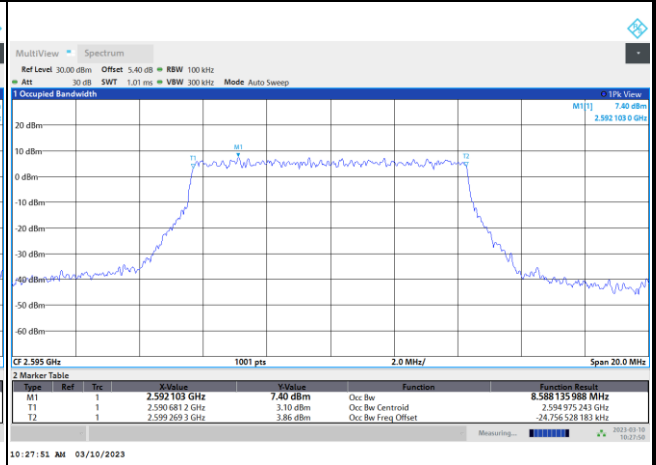
16QAM



64QAM



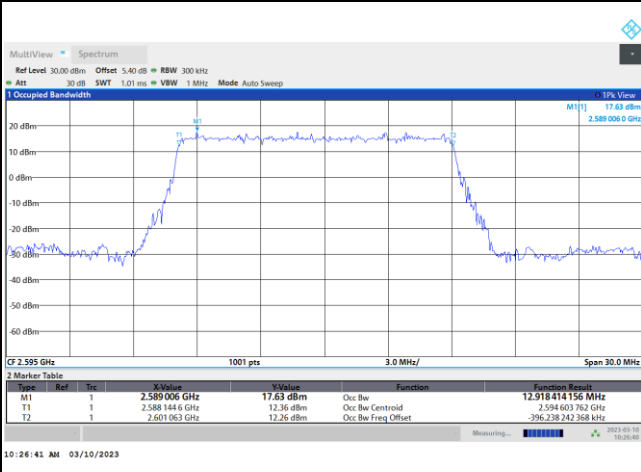
256QAM





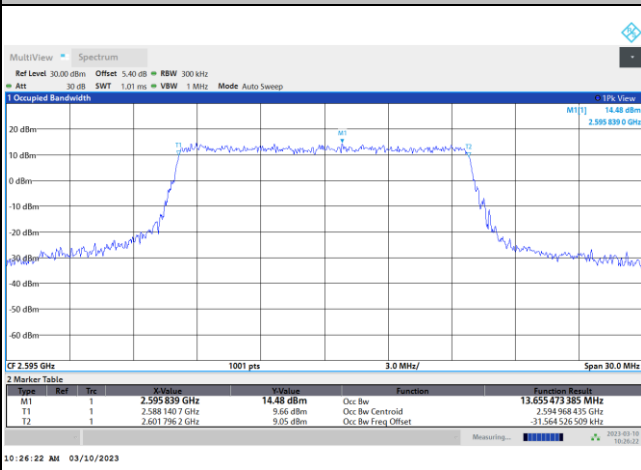
FR1 n38 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

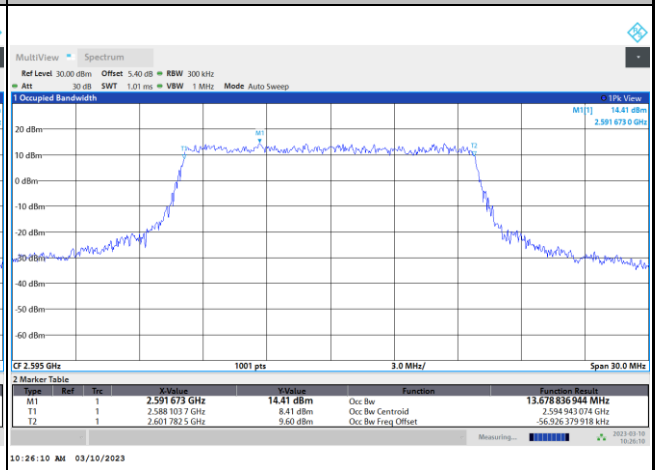


FR1 n38 / 15MHz / CP OFDM / Middle Channel / Full RB

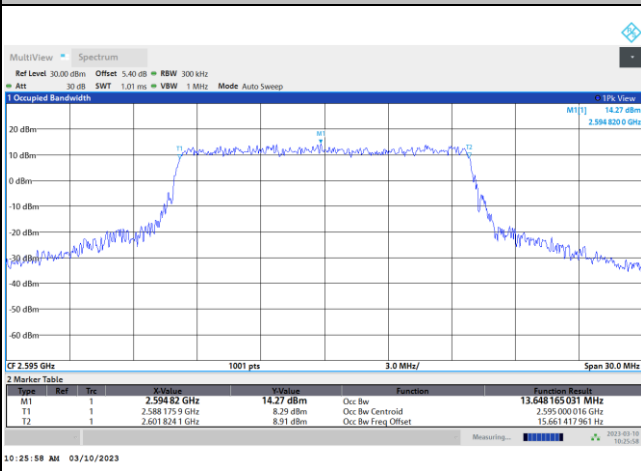
QPSK



16QAM



64QAM



256QAM

