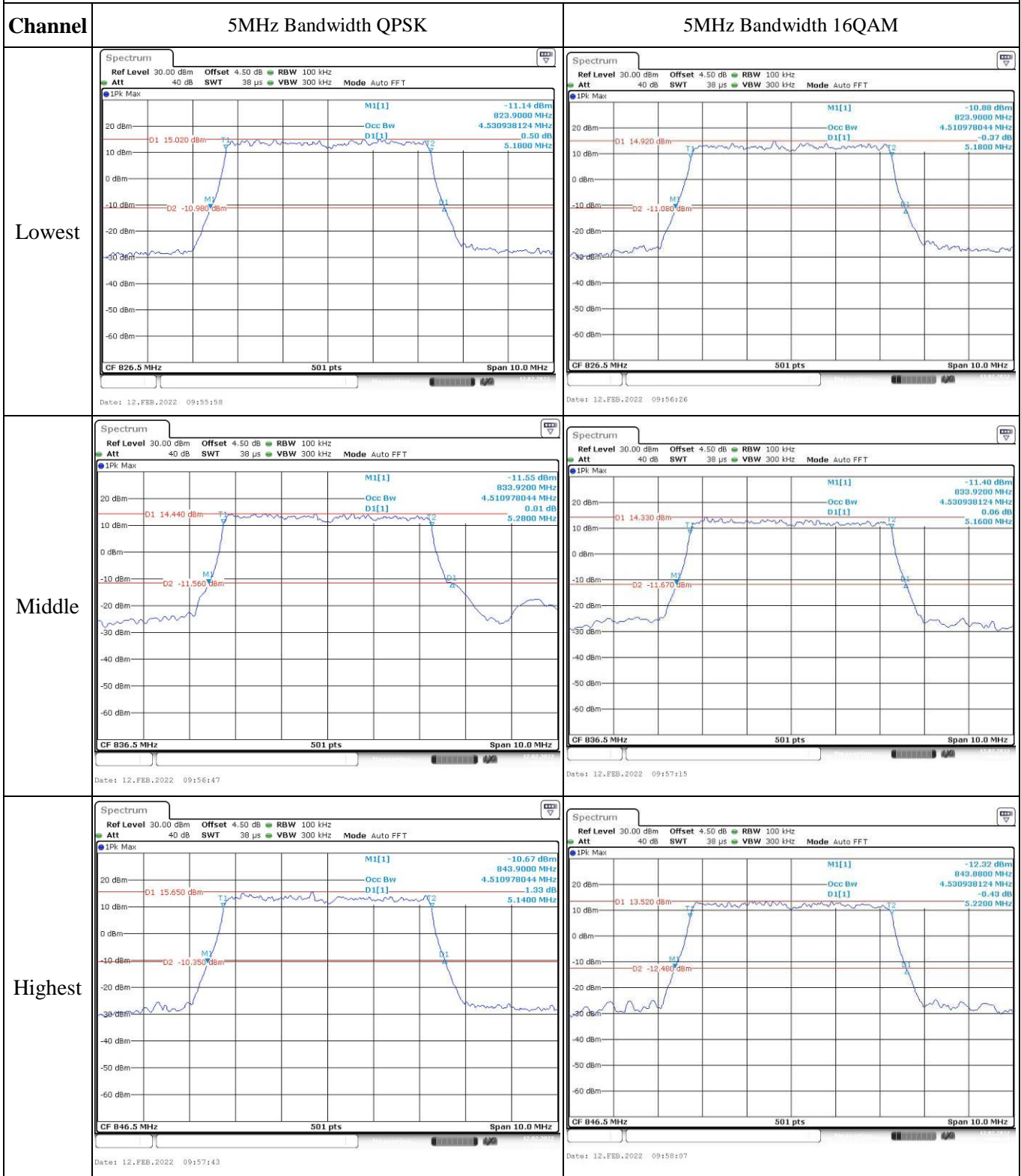


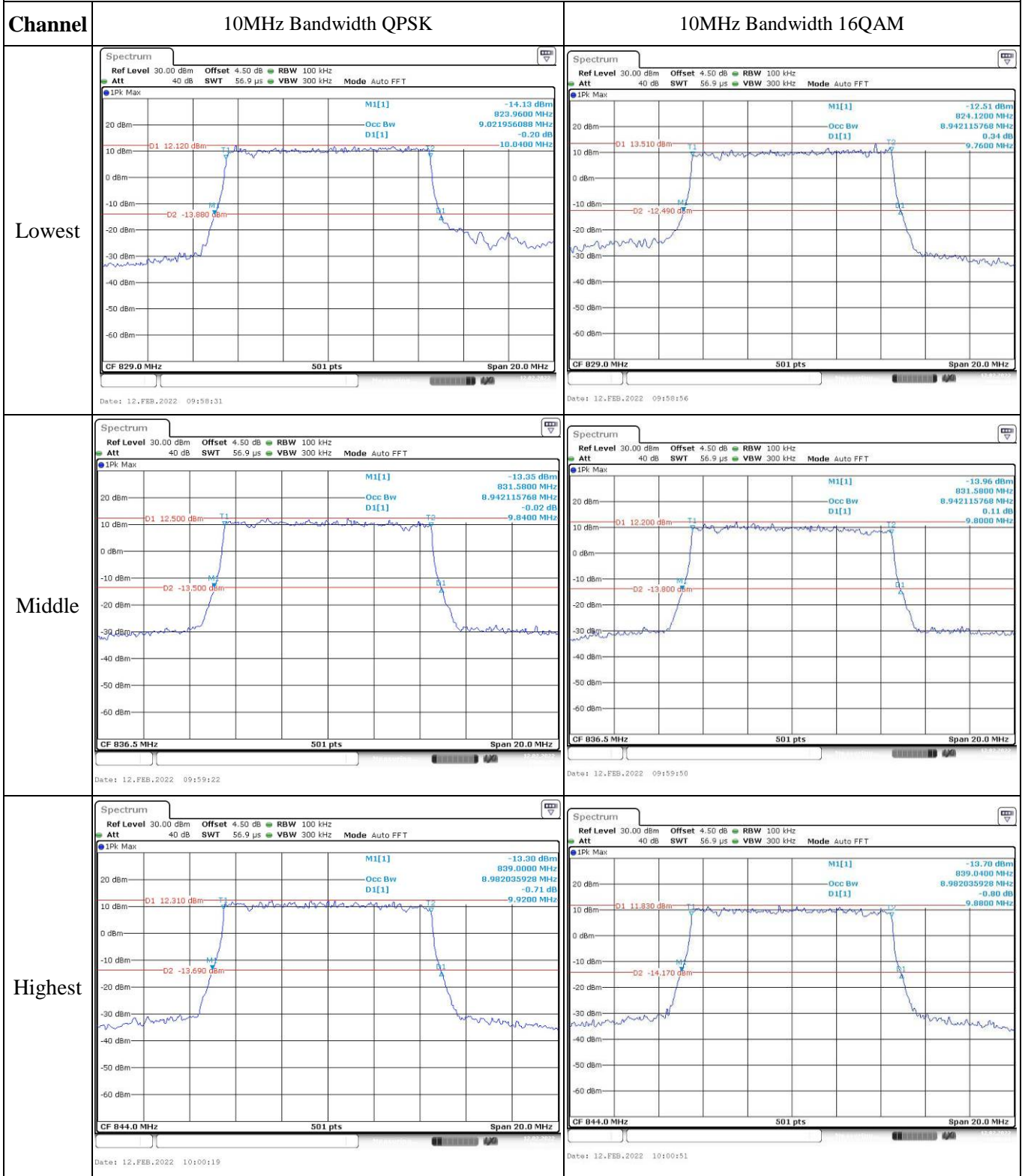
Occupied Bandwidth

| Channel | 3MHz Bandwidth QPSK | 3MHz Bandwidth 16QAM |
|---------|--|--|
| Lowest | <p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -12.91 dBm 824.0600 MHz Occ Bw 2.682634731 MHz D1[1] 1.78 dB</p> <p>D1 13.820 dBm D2 -12.180 dBm</p> <p>CF 825.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 12.FEB.2022 09:54:09</p> | <p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -14.82 dBm 824.0600 MHz Occ Bw 2.682634731 MHz D1[1] 1.06 dB</p> <p>D1 11.950 dBm D2 -14.050 dBm</p> <p>CF 825.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 12.FEB.2022 09:54:27</p> |
| Middle | <p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -13.94 dBm 835.0600 MHz Occ Bw 2.682634731 MHz D1[1] 1.18 dB</p> <p>D1 12.520 dBm D2 -13.480 dBm</p> <p>CF 836.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 12.FEB.2022 09:54:46</p> | <p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -14.31 dBm 835.0600 MHz Occ Bw 2.682634731 MHz D1[1] -1.09 dB</p> <p>D1 11.390 dBm D2 -14.610 dBm</p> <p>CF 836.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 12.FEB.2022 09:55:00</p> |
| Highest | <p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -14.47 dBm 846.0480 MHz Occ Bw 2.682634731 MHz D1[1] -0.44 dB</p> <p>D1 11.690 dBm D2 -14.310 dBm</p> <p>CF 847.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 12.FEB.2022 09:55:19</p> | <p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -13.54 dBm 846.0600 MHz Occ Bw 2.670558693 MHz D1[1] -0.41 dB</p> <p>D1 11.910 dBm D2 -14.090 dBm</p> <p>CF 847.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 12.FEB.2022 09:55:34</p> |

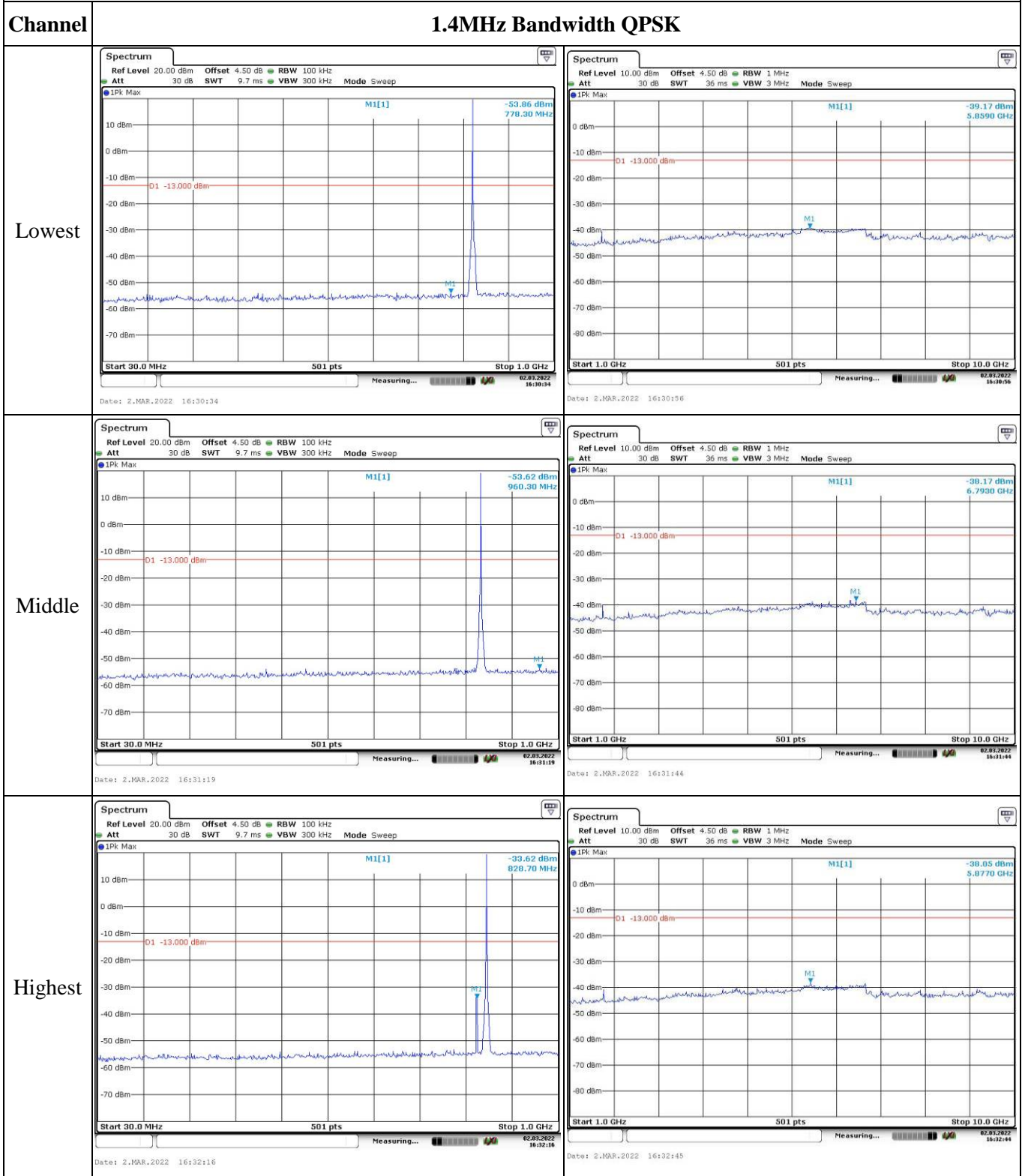
Occupied Bandwidth



Occupied Bandwidth



Spurious Emissions at Antenna Terminal

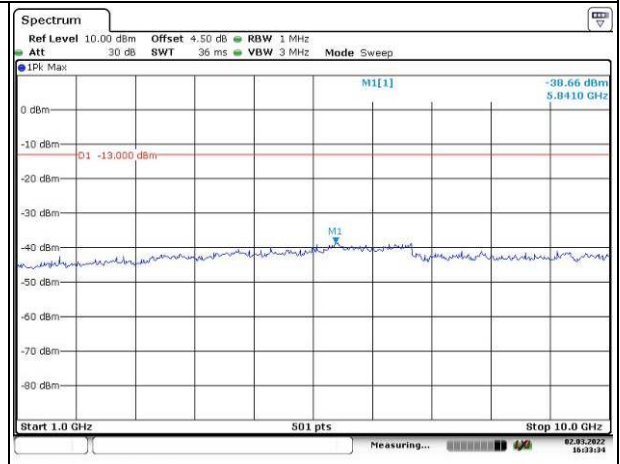
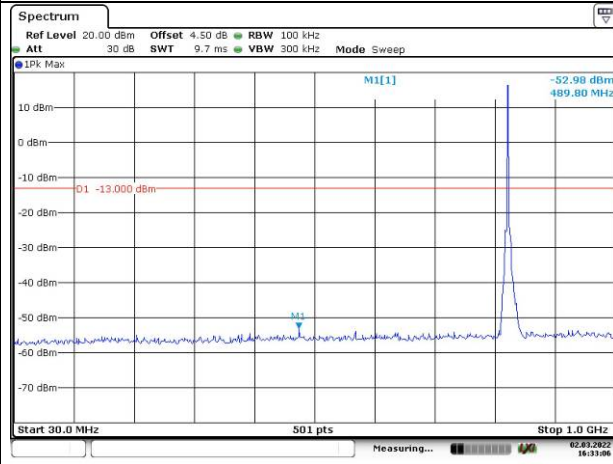


Spurious Emissions at Antenna Terminal

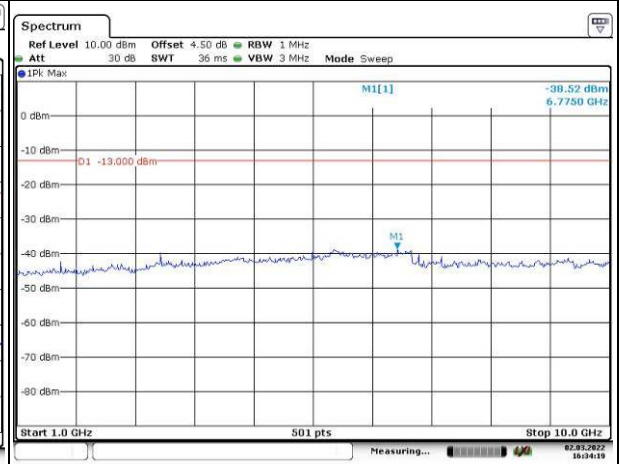
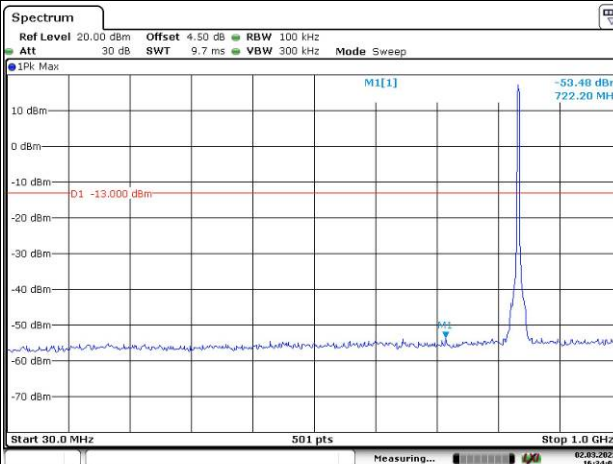
Channel

3MHz Bandwidth QPSK

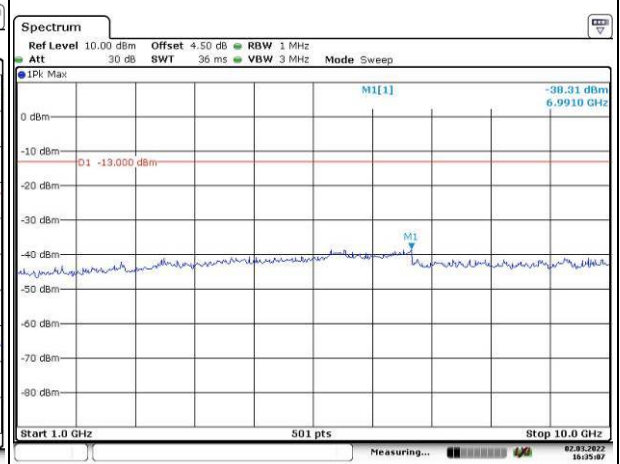
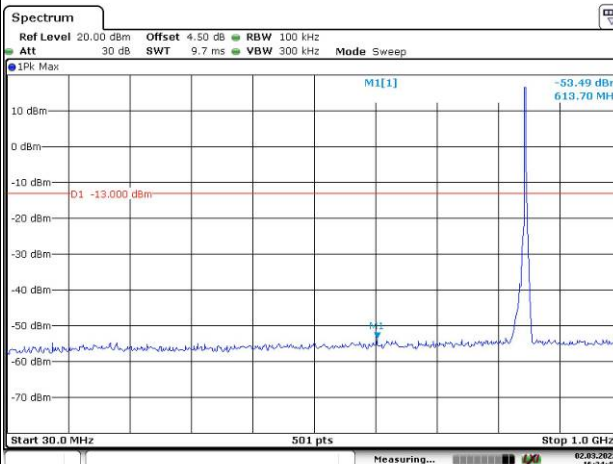
Lowest



Middle



Highest

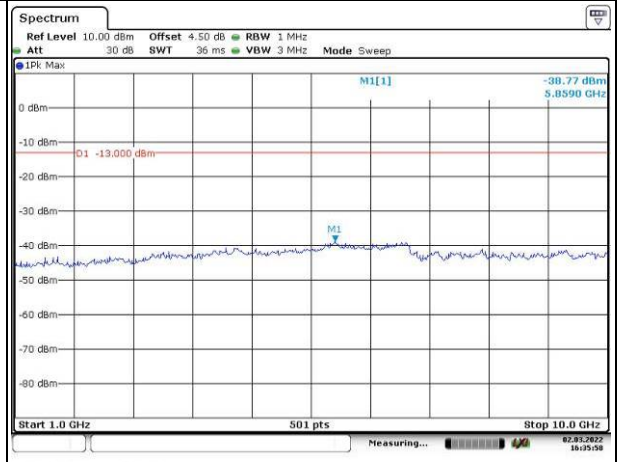
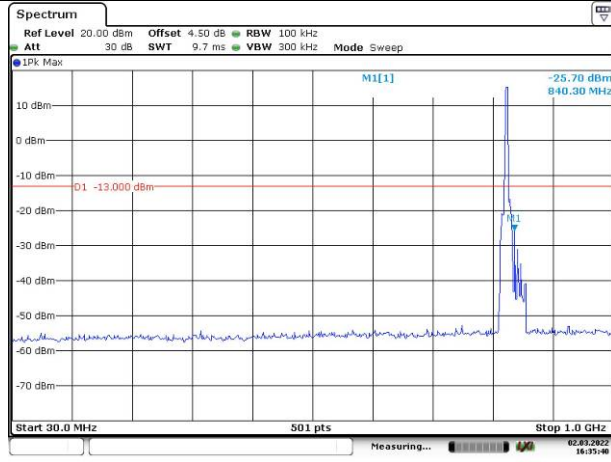


Spurious Emissions at Antenna Terminal

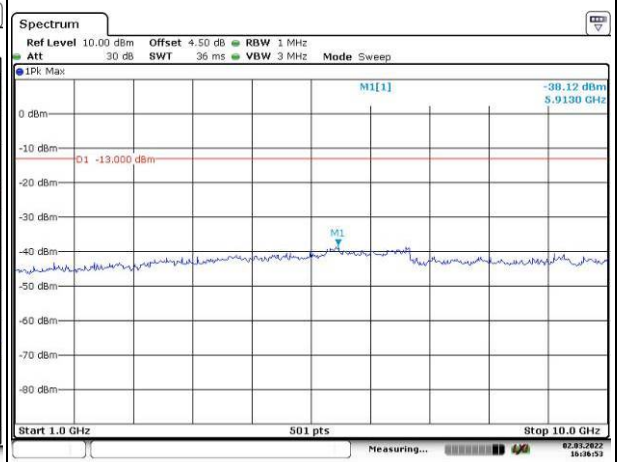
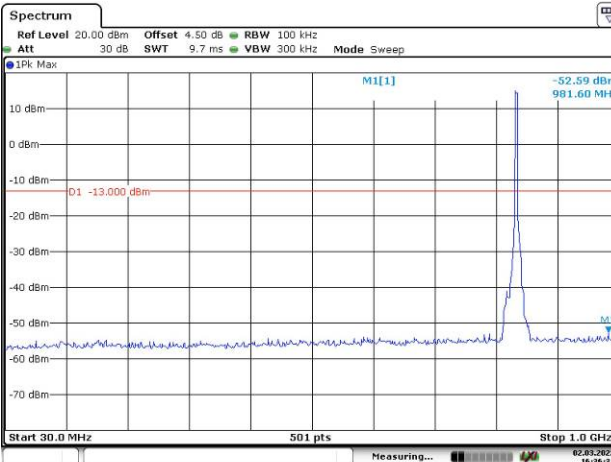
Channel

5MHz Bandwidth QPSK

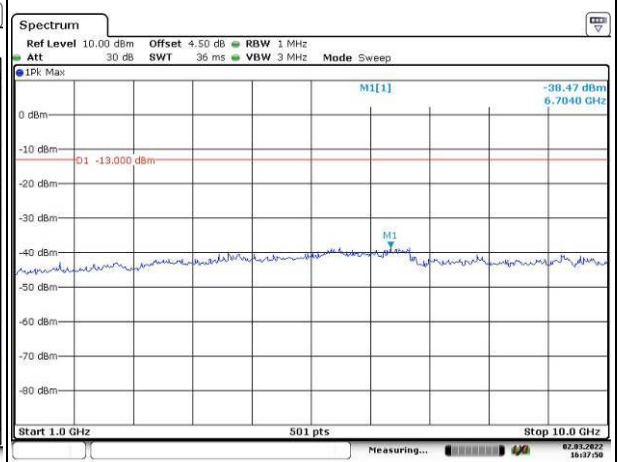
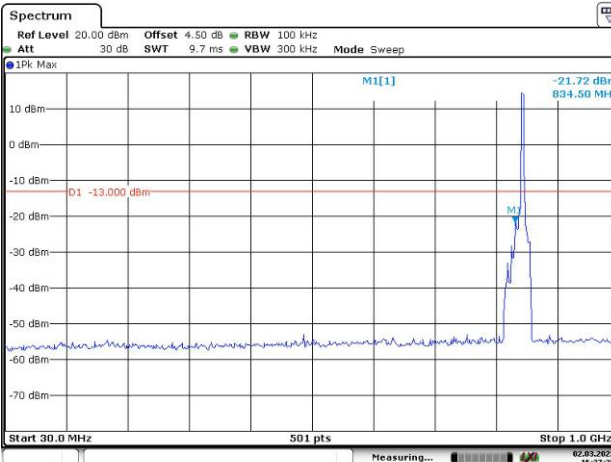
Lowest



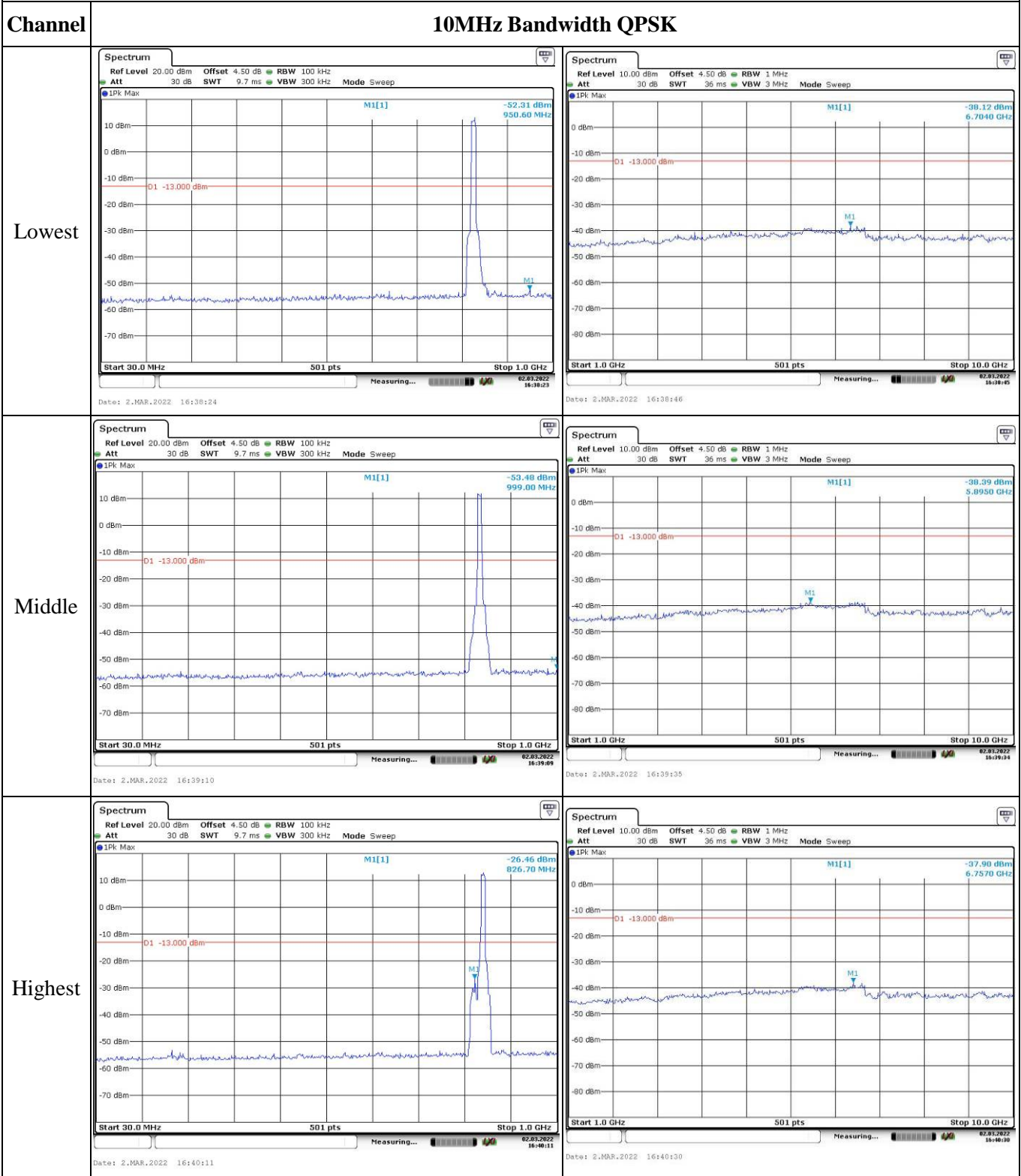
Middle



Highest



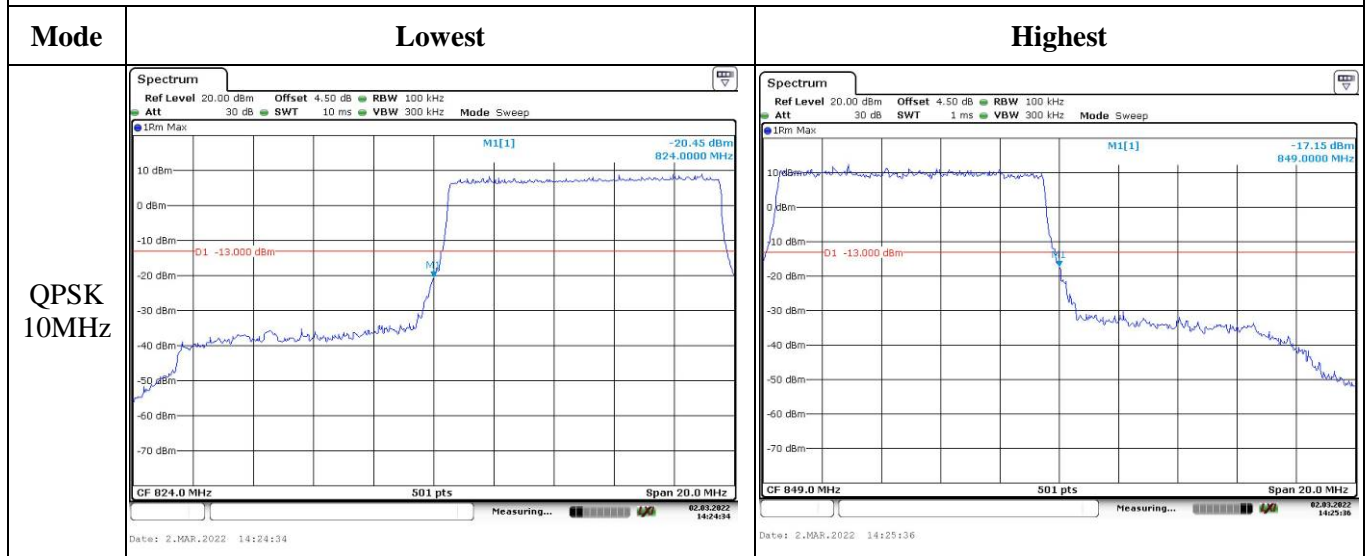
Spurious Emissions at Antenna Terminal



Out of band emission, Band Edge

| Mode | Lowest | Highest |
|----------------|--------|---------|
| QPSK 1.4MHz | | |
| QPSK 3MHz | | |
| QPSK 5MHz | | |

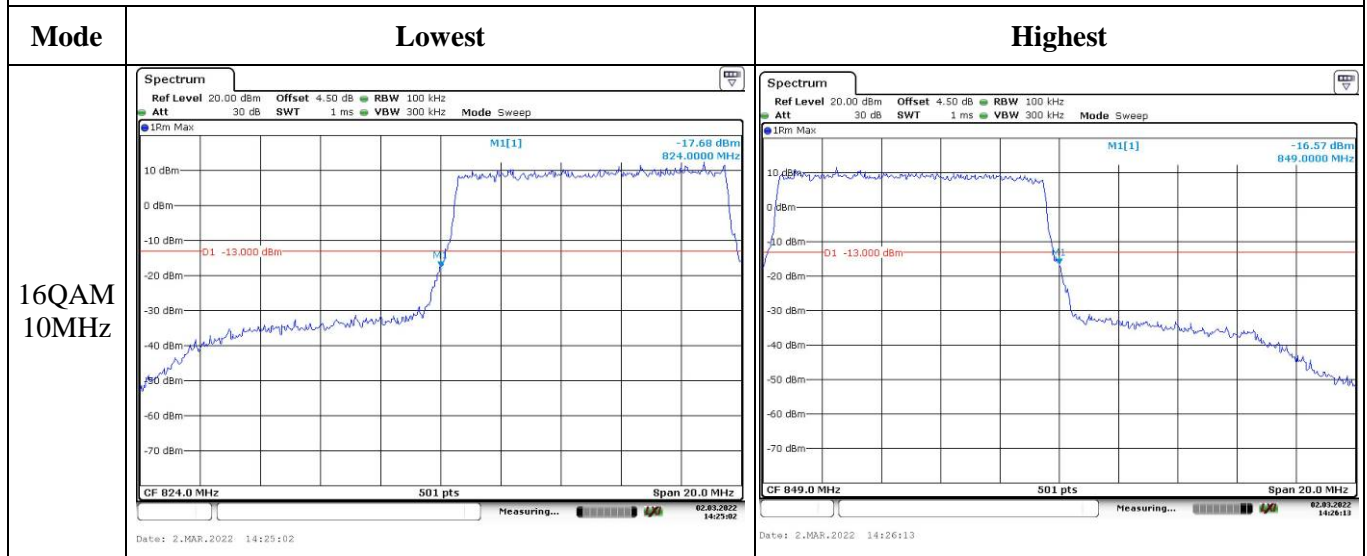
Out of band emission, Band Edge



Out of band emission, Band Edge

| Mode | Lowest | Highest |
|-----------------|--------|---------|
| 16QAM 1.4MHz | | |
| 16QAM 3MHz | | |
| 16QAM 5MHz | | |

Out of band emission, Band Edge



4.9 Antenna Port Test Data and Results for LTE Band 12

| | | | |
|----------------|--------------------|--------------|-----------------------|
| Serial Number: | CR22020002-RF-S1/3 | Test Date: | 2022-02-12~2022-03-03 |
| Test Site: | RF | Test Mode: | Transmitting |
| Tester: | Le Qiao | Test Result: | Pass |

Environmental Conditions:

| | | | | | |
|----------------------|---------|------------------------------|-------|---------------------------|-------------|
| Temperature: (°C) | 21~23.1 | Relative Humidity: (%) | 51~62 | ATM Pressure: (kPa) | 100.8~101.2 |
|----------------------|---------|------------------------------|-------|---------------------------|-------------|

Test Equipment List and Details:

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---------------|-------------------------------------|-----------|---------------|------------------|----------------------|
| R&S | Spectrum Analyzer | FSV40 | 101474 | 2021/7/22 | 2022/7/21 |
| zhuoxiang | Coaxial Cable | SMA-178 | 211001 | Each time | N/A |
| Mini-Circuits | DC Block | BLK-18-S+ | 1554403 | Each time | N/A |
| Weinschel | Coaxial Attenuators | 53-20-34 | LN751 | Each time | N/A |
| R&S | Wideband Radio Communication Tester | CMW500 | 149218 | 2021/7/22 | 2022/7/21 |
| BACL | TEMP&HUMI Test Chamber | BTH-150 | 30026 | 2021/7/22 | 2022/7/22 |
| UNI-T | Multimeter | UT39A+ | C210582554 | 2021/9/30 | 2022/9/30 |
| E-Microwave | Two-way Splitter | ODP-1-6 | OE0120176 | Each Time | N/A |

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

EUT Information@ LTE Band 12▲:

| | | | | | |
|--------------------------------------|-----|---------------------|-------|------------------|-----|
| Antenna Gain (dBi): | 0.7 | Antenna Gain (dBd): | -1.45 | Cable Loss (dB): | 0.1 |
| Operation Voltage(V _{DC}): | | | | | |
| Lowest: | 3.6 | Normal: | 3.8 | Highest: | 4.3 |

Test Frequency For Each Mode:

| Operation Bandwidth | Lowest Frequency (MHz) | Middle Frequency (MHz) | Highest Frequency (MHz) |
|---------------------|------------------------|------------------------|-------------------------|
| 1.4MHz | 699.7 | 707.5 | 715.3 |
| 3MHz | 700.5 | 707.5 | 714.5 |
| 5MHz | 701.5 | 707.5 | 713.5 |
| 10MHz | 704 | 707.5 | 711 |

Test Data:**FCC§2.1046;§ 27.50(c) (10)****RF Output Power:**

| Test Bandwidth & Modulation | Resource Block & RB offset | Conducted Average Output Power(dBm) | | | Maximum ERP (dBm) | ERP Limit (dBm) |
|-----------------------------|----------------------------|-------------------------------------|----------------|-----------------|-------------------|-----------------|
| | | Lowest Channel | Middle Channel | Highest Channel | | |
| 1.4MHz QPSK | RB1#0 | 22.80 | 22.72 | 22.69 | 21.4 | 34.77 |
| | RB1#3 | 22.95 | 22.91 | 22.94 | | |
| | RB1#5 | 22.77 | 22.77 | 22.76 | | |
| | RB3#0 | 22.85 | 22.82 | 22.85 | | |
| | RB3#3 | 22.84 | 22.86 | 22.90 | | |
| | RB6#0 | 21.82 | 21.80 | 21.78 | | |
| 1.4MHz 16QAM | RB1#0 | 21.76 | 21.84 | 21.69 | 20.56 | 34.77 |
| | RB1#3 | 21.91 | 22.02 | 21.90 | | |
| | RB1#5 | 21.78 | 21.90 | 21.77 | | |
| | RB3#0 | 22.07 | 21.78 | 21.92 | | |
| | RB3#3 | 22.11 | 21.89 | 21.96 | | |
| | RB6#0 | 20.86 | 20.83 | 20.69 | | |
| 3MHz QPSK | RB1#0 | 22.79 | 22.78 | 22.78 | 21.29 | 34.77 |
| | RB1#8 | 22.81 | 22.77 | 22.80 | | |
| | RB1#14 | 22.76 | 22.81 | 22.84 | | |
| | RB6#0 | 21.75 | 21.71 | 21.76 | | |
| | RB6#9 | 21.78 | 21.78 | 21.75 | | |
| | RB15#0 | 21.82 | 21.79 | 21.79 | | |
| 3MHz 16QAM | RB1#0 | 22.40 | 21.90 | 21.82 | 20.85 | 34.77 |
| | RB1#8 | 22.39 | 21.90 | 21.78 | | |
| | RB1#14 | 22.36 | 21.89 | 21.82 | | |
| | RB6#0 | 20.85 | 20.75 | 20.72 | | |
| | RB6#9 | 20.84 | 20.83 | 20.70 | | |
| | RB15#0 | 20.91 | 20.76 | 20.80 | | |
| 5MHz QPSK | RB1#0 | 22.73 | 22.67 | 22.67 | 21.31 | 34.77 |
| | RB1#13 | 22.86 | 22.83 | 22.83 | | |
| | RB1#24 | 22.77 | 22.73 | 22.74 | | |
| | RB15#0 | 21.85 | 21.82 | 21.97 | | |
| | RB15#10 | 21.80 | 21.87 | 21.79 | | |
| | RB25#0 | 21.80 | 21.81 | 21.83 | | |
| 5MHz 16QAM | RB1#0 | 21.62 | 21.98 | 21.75 | 20.57 | 34.77 |
| | RB1#13 | 21.73 | 22.12 | 21.86 | | |
| | RB1#24 | 21.63 | 22.05 | 21.80 | | |
| | RB15#0 | 20.88 | 20.78 | 20.95 | | |
| | RB15#10 | 20.83 | 20.85 | 20.79 | | |
| | RB25#0 | 20.88 | 20.78 | 20.86 | | |

| | | | | | | |
|---|---------|-------|-------|-------|----------------|-------------|
| 10MHz QPSK | RB1#0 | 22.73 | 22.76 | 22.72 | 21.44 | 34.77 |
| | RB1#25 | 22.94 | 22.92 | 22.99 | | |
| | RB1#49 | 22.77 | 22.81 | 22.82 | | |
| | RB25#0 | 21.87 | 21.80 | 21.76 | | |
| | RB25#25 | 21.84 | 21.83 | 21.68 | | |
| | RB50#0 | 21.89 | 21.85 | 21.79 | | |
| 10MHz 16QAM | RB1#0 | 22.30 | 21.88 | 21.71 | 21.05 | 34.77 |
| | RB1#25 | 22.60 | 22.09 | 21.98 | | |
| | RB1#49 | 22.37 | 21.96 | 21.78 | | |
| | RB25#0 | 20.91 | 20.83 | 20.84 | | |
| | RB25#25 | 20.90 | 20.89 | 20.79 | | |
| | RB50#0 | 20.88 | 20.85 | 20.77 | | |
| Note: ERP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBd) | | | | | | |
| | | | | | Result: | Pass |

| Peak-to-average Ratio(PAR) | | | | | |
|-----------------------------|----------------------------|---------------------------|----------------|-----------------|-------------|
| Test Bandwidth & Modulation | Resource Block & RB offset | Peak-to-average Ratio(dB) | | | Limit (dB) |
| | | Lowest Channel | Middle Channel | Highest Channel | |
| 10MHz QPSK | RB1#0 | 5.10 | 5.65 | 5.19 | 13 |
| | RB50#0 | 5.62 | 5.57 | 5.13 | 13 |
| 10MHz 16QAM | RB1#0 | 5.65 | 6.58 | 6.00 | 13 |
| | RB50#0 | 6.46 | 6.55 | 6.26 | 13 |
| Result: | | | | | Pass |

| FCC §2.1049, §27.53:Occupied Bandwidth | | | | | | |
|--|------------------------------|----------------|--------------|--------------------------------|----------------|--------------|
| Operation Mode | 99% Occupied Bandwidth (MHz) | | | 26 dB Occupied Bandwidth (MHz) | | |
| | Low Channel | Middle channel | High Channel | Low Channel | Middle Channel | High Channel |
| 1.4MHz QPSK | 1.096 | 1.108 | 1.102 | 1.290 | 1.332 | 1.290 |
| 1.4MHz 16QAM | 1.096 | 1.126 | 1.096 | 1.320 | 1.632 | 1.302 |
| 3MHz QPSK | 2.683 | 2.695 | 2.683 | 2.868 | 3.036 | 2.892 |
| 3MHz 16QAM | 2.683 | 2.683 | 2.671 | 2.868 | 2.892 | 2.880 |
| 5MHz QPSK | 4.531 | 4.531 | 4.511 | 5.200 | 5.160 | 5.140 |
| 5MHz 16QAM | 4.511 | 4.551 | 4.591 | 5.080 | 5.260 | 5.480 |
| 10MHz QPSK | 8.981 | 8.981 | 8.901 | 9.920 | 10.200 | 9.800 |
| 10MHz 16QAM | 8.981 | 8.981 | 8.901 | 9.960 | 10.080 | 9.720 |
| Note: The test plots please refer to the Plots of Occupied Bandwidth | | | | | | |

FCC §2.1051, §27.53:Spurious Emissions at Antenna Terminal

| | |
|----------------|--|
| Result: | Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal. |
|----------------|--|

FCC §2.1051, §27.53:Out of band emission, Band Edge

| | |
|----------------|---|
| Result: | Pass, Please refer to the test plots of Out of band emission, Band Edge. |
|----------------|---|

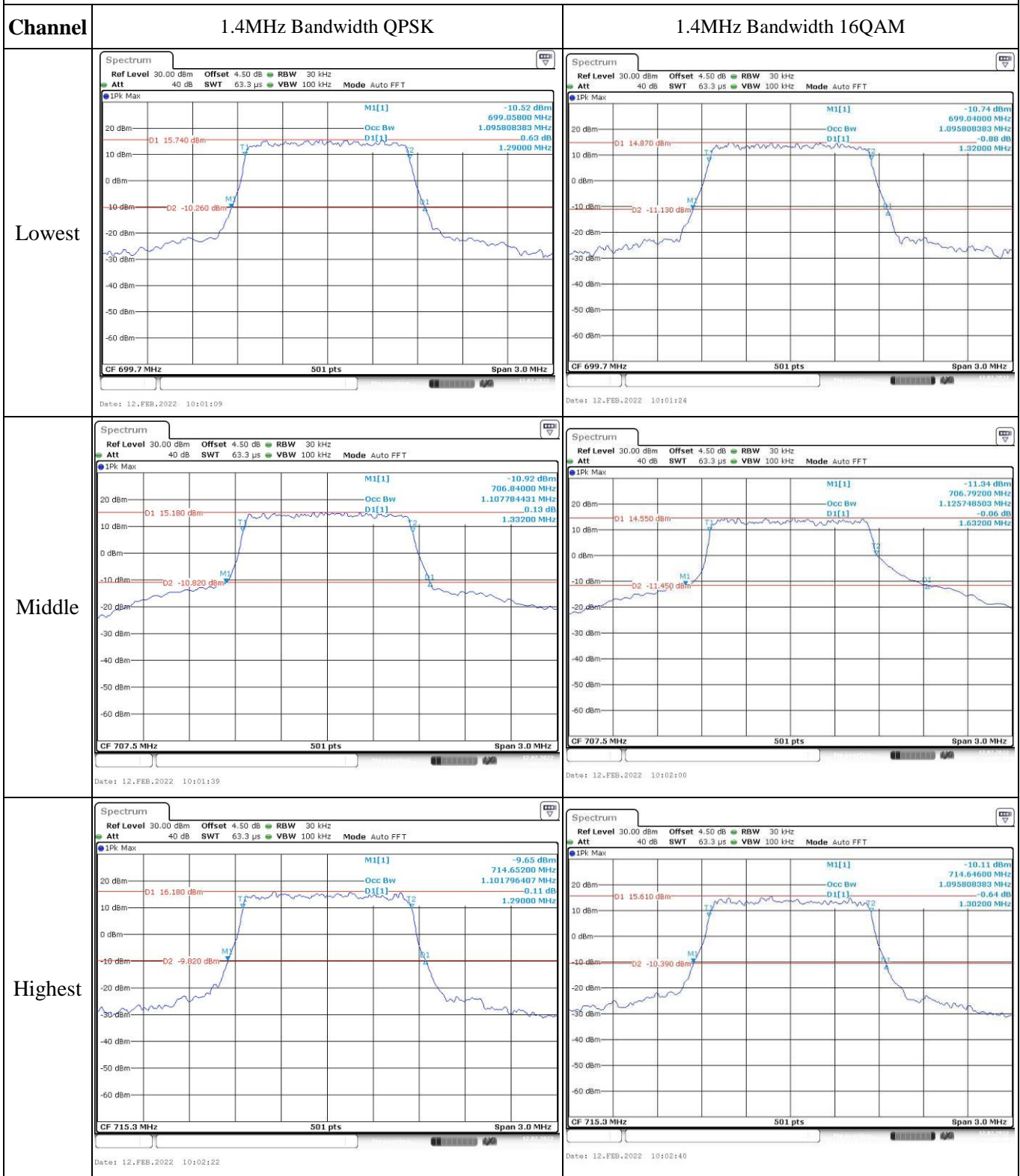
FCC §2.1055, §27.54: Frequency Stability

| Test Mode: | 10M QPSK | Test Channel: Lowest for Lower Edge,Highest for Upper Edge | | | | |
|-------------------------------------|------------------|--|------------------|--------|------------------|-------------|
| Test Item | Temperature (°C) | Voltage (V _{DC}) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.8 | 699.514 | 699.00 | 715.457 | 716.00 |
| | -20 | 3.8 | 699.518 | 699.00 | 715.456 | 716.00 |
| | -10 | 3.8 | 699.514 | 699.00 | 715.457 | 716.00 |
| | 0 | 3.8 | 699.513 | 699.00 | 715.453 | 716.00 |
| | 10 | 3.8 | 699.519 | 699.00 | 715.456 | 716.00 |
| | 20 | 3.8 | 699.514 | 699.00 | 715.457 | 716.00 |
| | 30 | 3.8 | 699.516 | 699.00 | 715.456 | 716.00 |
| | 40 | 3.8 | 699.514 | 699.00 | 715.457 | 716.00 |
| Frequency Stability vs. Voltage | 20 | 3.6 | 699.514 | 699.00 | 715.457 | 716.00 |
| | 20 | 4.3 | 699.511 | 699.00 | 715.453 | 716.00 |
| | | | | | Result: | Pass |

| Test Mode: | 10M 16QAM | Test Channel: Lowest for Lower Edge,Highest for Upper Edge | | | | |
|-------------------------------------|------------------|--|------------------|--------|------------------|-------------|
| Test Item | Temperature (°C) | Voltage (V _{DC}) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.8 | 699.514 | 699.00 | 715.457 | 716.00 |
| | -20 | 3.8 | 699.515 | 699.00 | 715.456 | 716.00 |
| | -10 | 3.8 | 699.514 | 699.00 | 715.457 | 716.00 |
| | 0 | 3.8 | 699.516 | 699.00 | 715.450 | 716.00 |
| | 10 | 3.8 | 699.518 | 699.00 | 715.457 | 716.00 |
| | 20 | 3.8 | 699.514 | 699.00 | 715.457 | 716.00 |
| | 30 | 3.8 | 699.515 | 699.00 | 715.454 | 716.00 |
| | 40 | 3.8 | 699.514 | 699.00 | 715.457 | 716.00 |
| | 50 | 3.8 | 699.518 | 699.00 | 715.451 | 716.00 |
| Frequency Stability vs. Voltage | 20 | 3.6 | 699.514 | 699.00 | 715.457 | 716.00 |
| | 20 | 4.3 | 699.514 | 699.00 | 715.456 | 716.00 |
| | | | | | Result: | Pass |

Test Plots:

Occupied Bandwidth



Occupied Bandwidth

| Channel | 3MHz Bandwidth QPSK | 3MHz Bandwidth 16QAM |
|---------|---------------------|----------------------|
| Lowest | | |
| Middle | | |
| Highest | | |

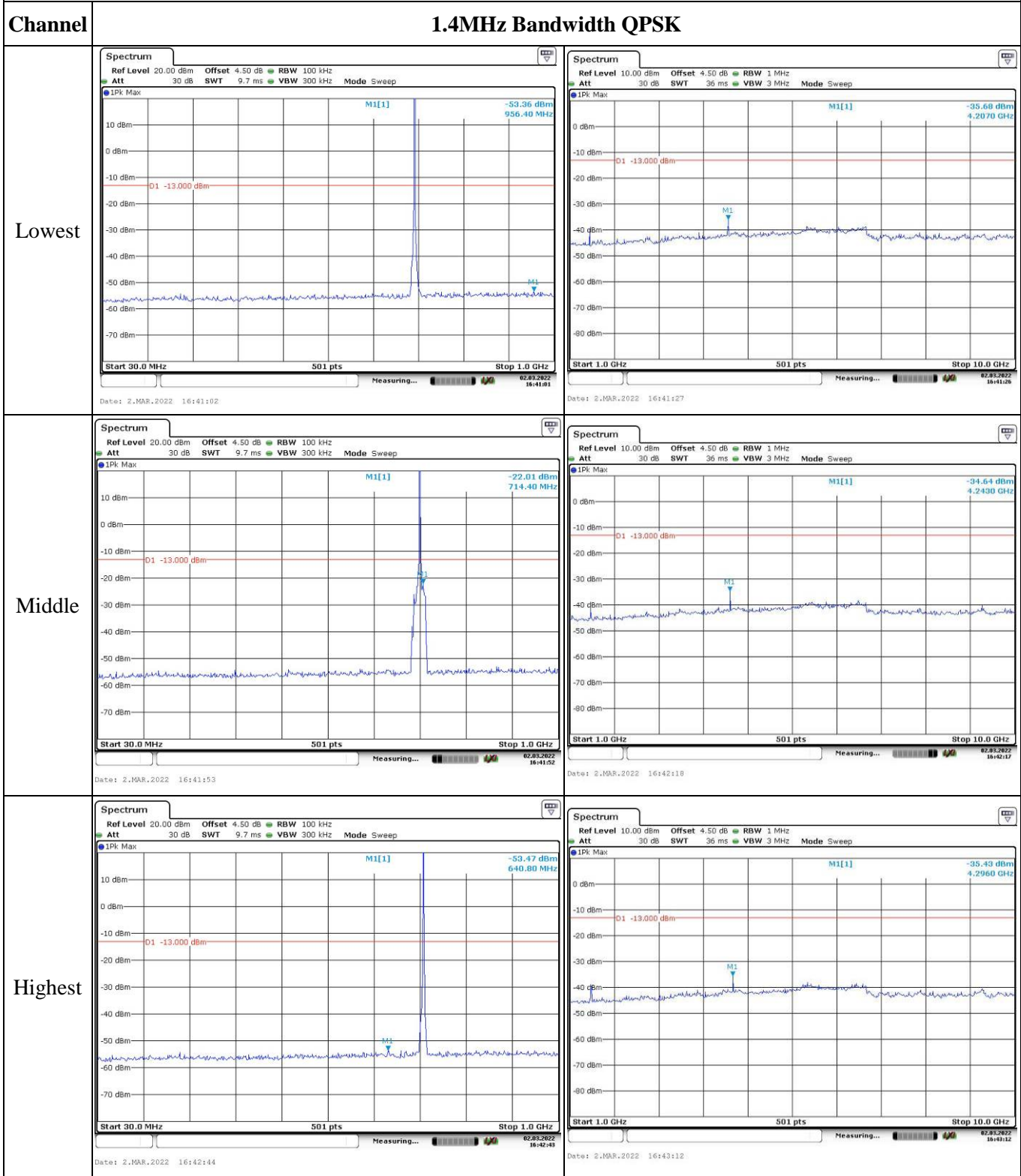
Occupied Bandwidth

| Channel | 5MHz Bandwidth QPSK | 5MHz Bandwidth 16QAM |
|---------|---|---|
| Lowest | <p>Ref Level 30.00 dBm Offset 4.50 dB RBW 100 kHz Att 40 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -10.34 dBm 698.8800 MHz Occ Bw 4.530938124 MHz D1[1] -0.21 dB 5.2000 MHz</p> <p>O1 15.920 dBm O2 -10.080 dBm</p> <p>CF 701.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 12.FEB.2022 10:05:08</p> | <p>Ref Level 30.00 dBm Offset 4.50 dB RBW 100 kHz Att 40 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -9.76 dBm 698.9200 MHz Occ Bw 4.510976044 MHz D1[1] -0.32 dB 5.0800 MHz</p> <p>O1 16.150 dBm O2 -9.850 dBm</p> <p>CF 701.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 12.FEB.2022 10:05:32</p> |
| Middle | <p>Ref Level 30.00 dBm Offset 4.50 dB RBW 100 kHz Att 40 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -9.63 dBm 704.9600 MHz Occ Bw 4.530938124 MHz D1[1] -0.65 dB 5.1600 MHz</p> <p>O1 15.960 dBm O2 -10.040 dBm</p> <p>CF 707.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 12.FEB.2022 10:05:57</p> | <p>Ref Level 30.00 dBm Offset 4.50 dB RBW 100 kHz Att 40 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -11.79 dBm 704.9000 MHz Occ Bw 4.530982034 MHz D1[1] -0.22 dB 5.2600 MHz</p> <p>O1 14.360 dBm O2 -11.620 dBm</p> <p>CF 707.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 12.FEB.2022 10:06:24</p> |
| Highest | <p>Ref Level 30.00 dBm Offset 4.50 dB RBW 100 kHz Att 40 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -9.23 dBm 710.8800 MHz Occ Bw 4.510978044 MHz D1[1] -0.23 dB 5.1400 MHz</p> <p>O1 16.580 dBm O2 -9.420 dBm</p> <p>CF 713.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 12.FEB.2022 10:06:43</p> | <p>Ref Level 30.00 dBm Offset 4.50 dB RBW 100 kHz Att 40 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -10.69 dBm 710.8600 MHz Occ Bw 4.590818363 MHz D1[1] -0.05 dB 5.4800 MHz</p> <p>O1 15.360 dBm O2 -10.540 dBm</p> <p>CF 713.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 12.FEB.2022 10:07:04</p> |

Occupied Bandwidth

| Channel | 10MHz Bandwidth QPSK | 10MHz Bandwidth 16QAM |
|---------|----------------------|-----------------------|
| Lowest | | |
| Middle | | |
| Highest | | |

Spurious Emissions at Antenna Terminal

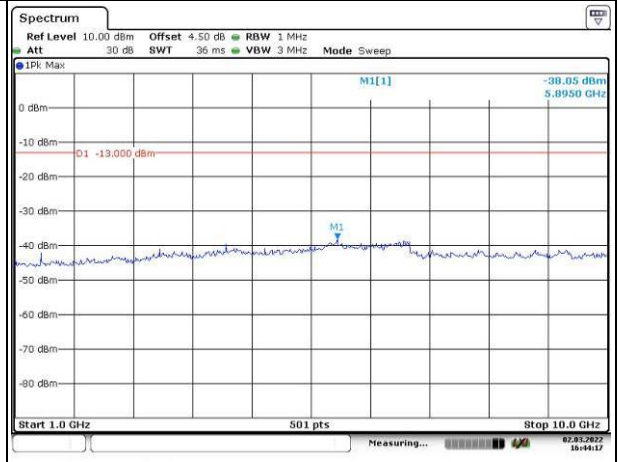
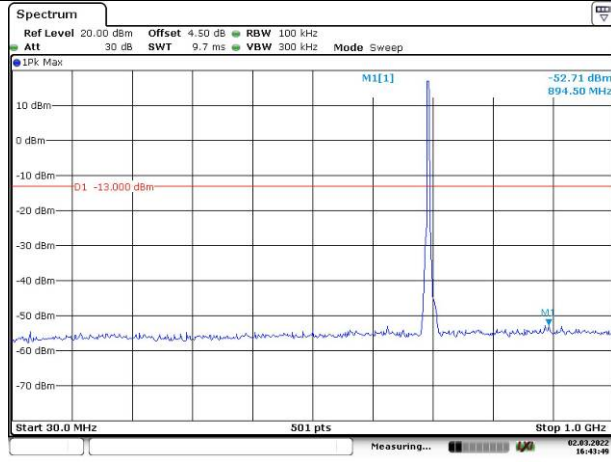


Spurious Emissions at Antenna Terminal

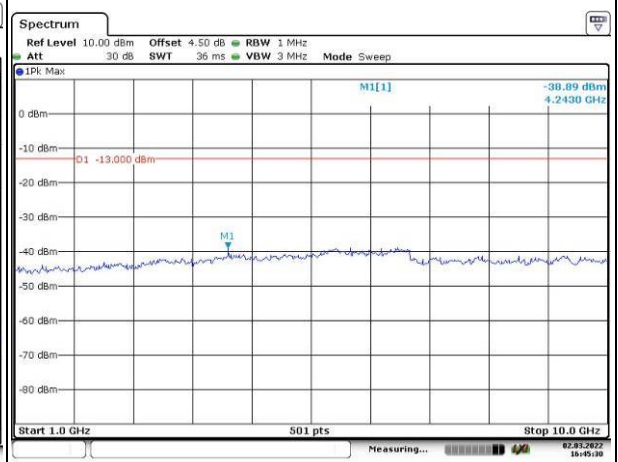
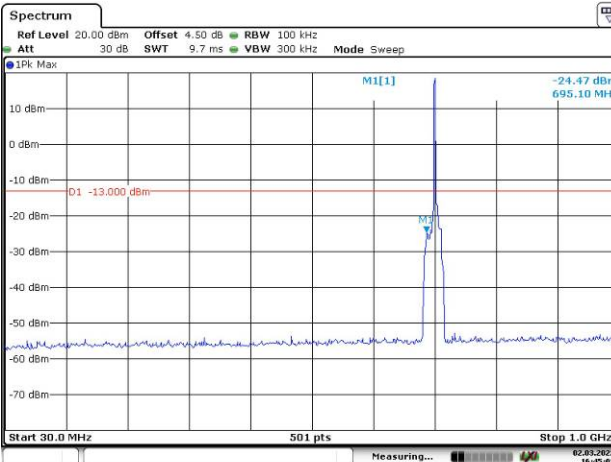
Channel

3MHz Bandwidth QPSK

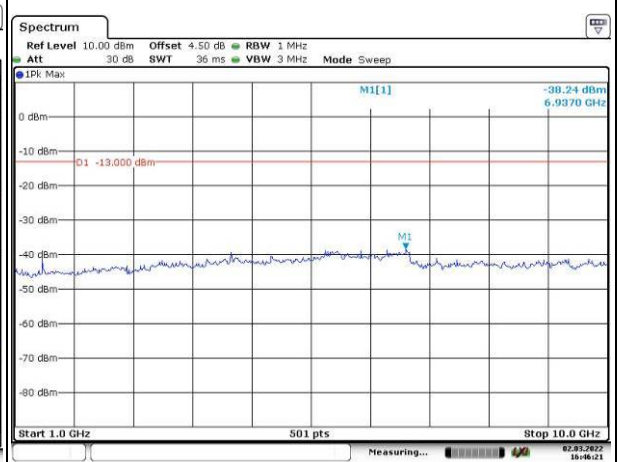
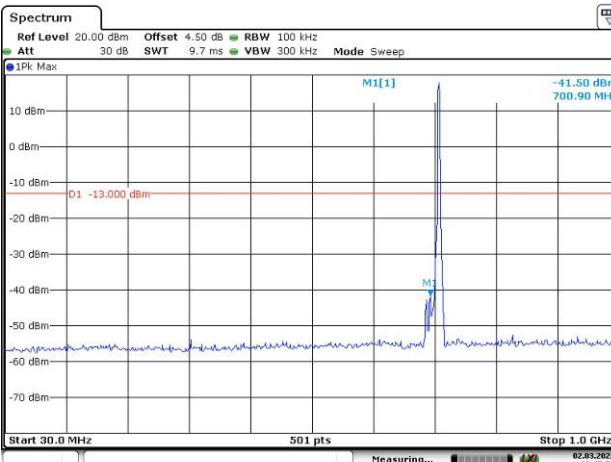
Lowest



Middle



Highest

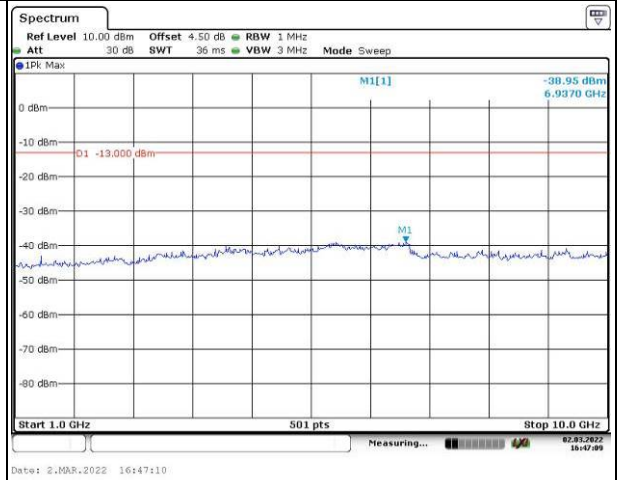
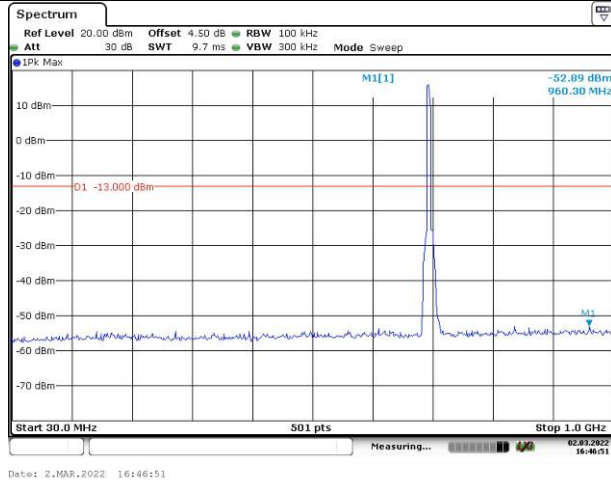


Spurious Emissions at Antenna Terminal

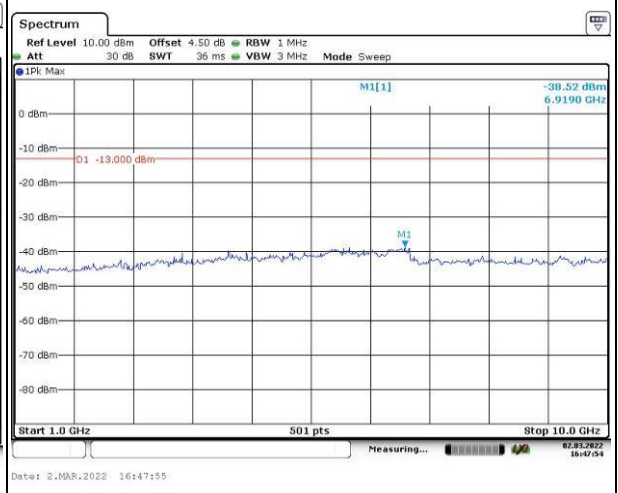
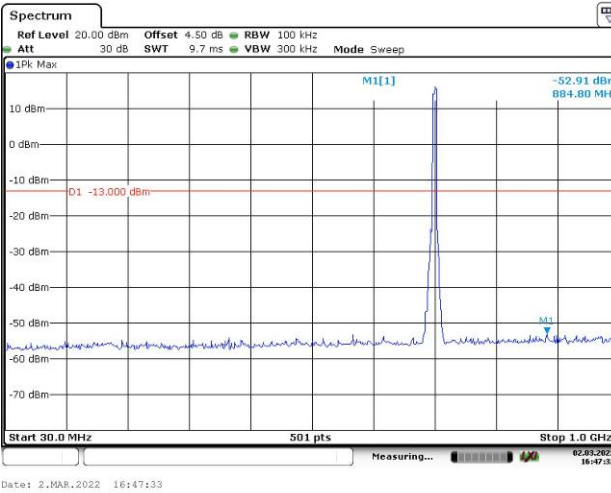
Channel

5MHz Bandwidth QPSK

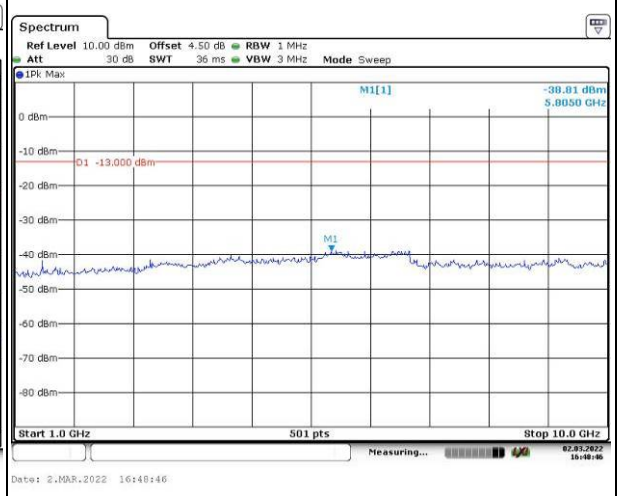
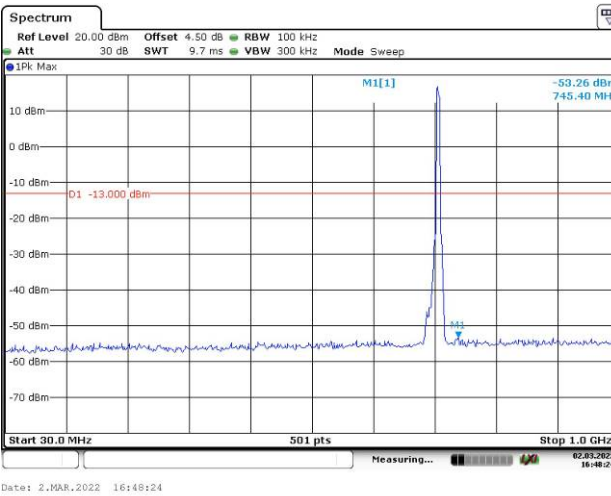
Lowest



Middle



Highest

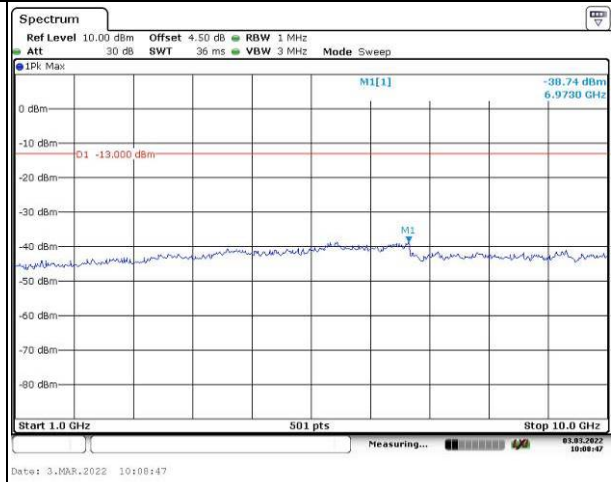
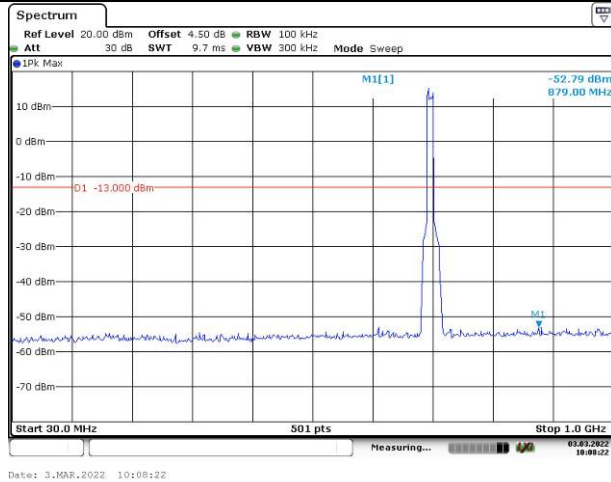


Spurious Emissions at Antenna Terminal

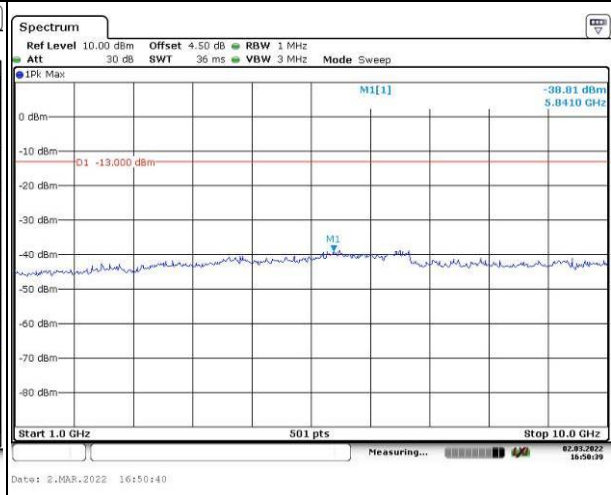
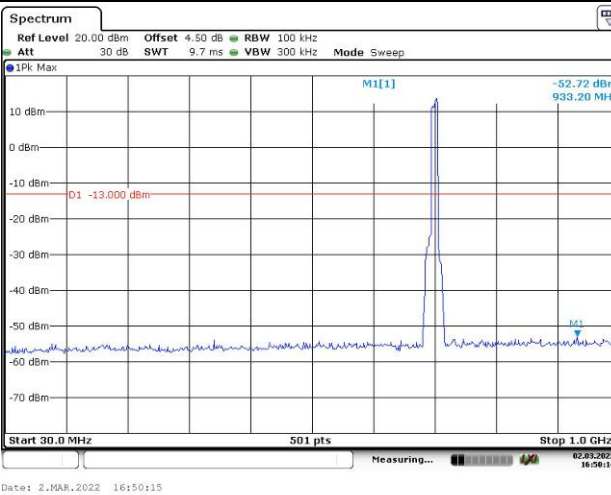
Channel

10MHz Bandwidth QPSK

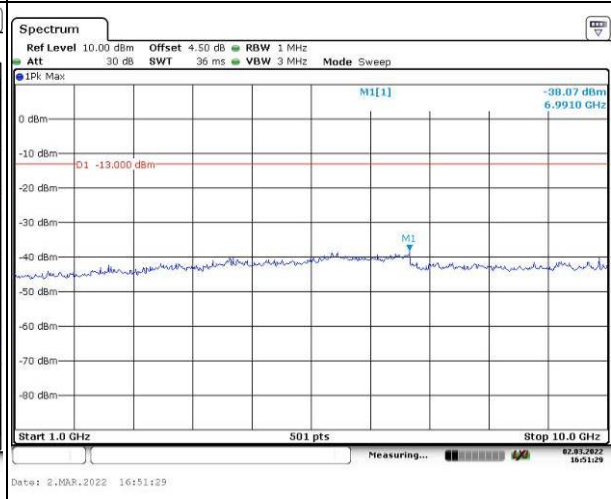
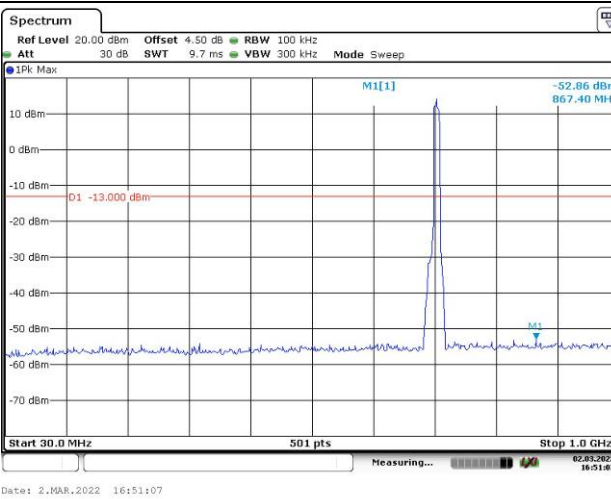
Lowest



Middle



Highest



Out of band emission, Band Edge

| Mode | Lowest | Highest |
|----------------|--------|---------|
| QPSK 1.4MHz | | |
| QPSK 3MHz | | |
| QPSK 5MHz | | |

Out of band emission, Band Edge

