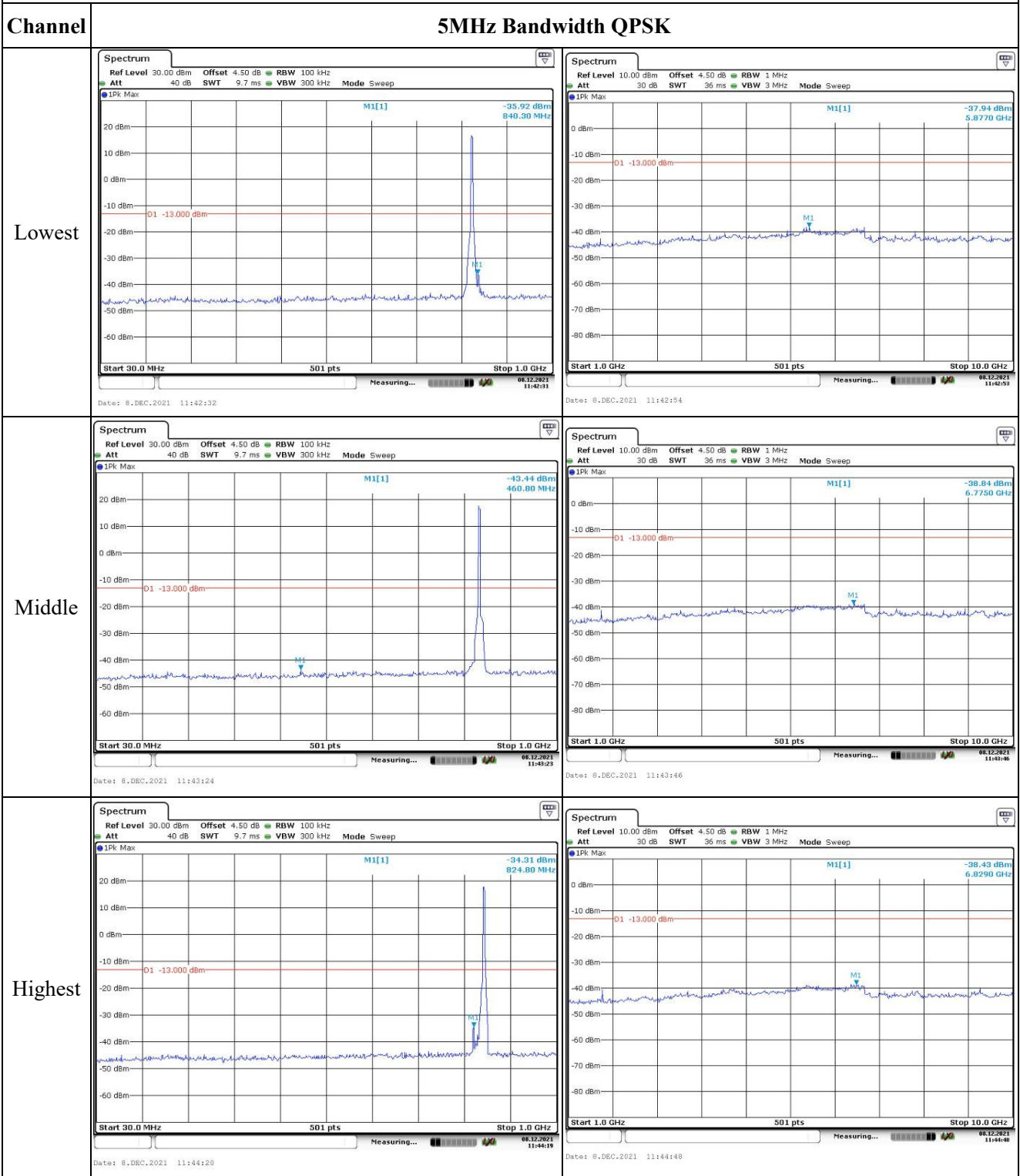


Spurious Emissions at Antenna Terminal

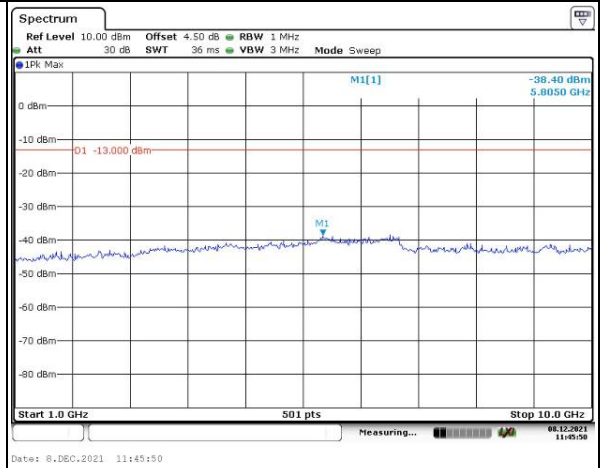
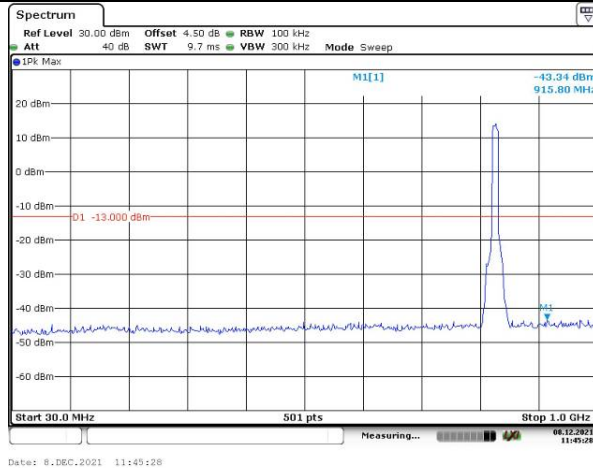


Spurious Emissions at Antenna Terminal

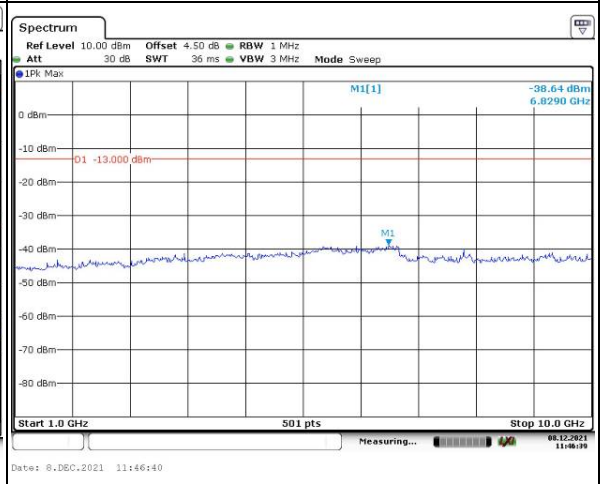
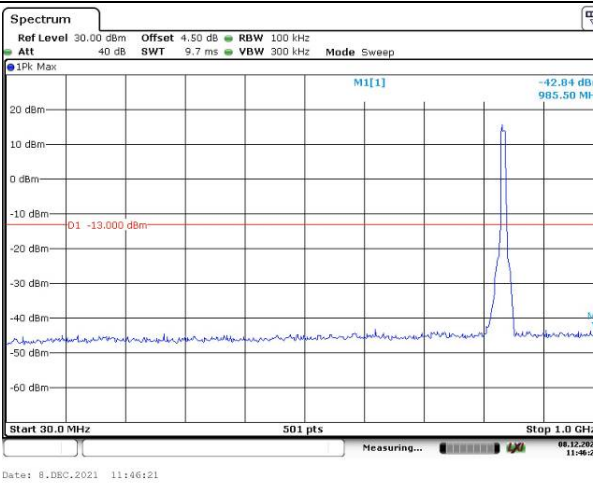
Channel

10MHz Bandwidth QPSK

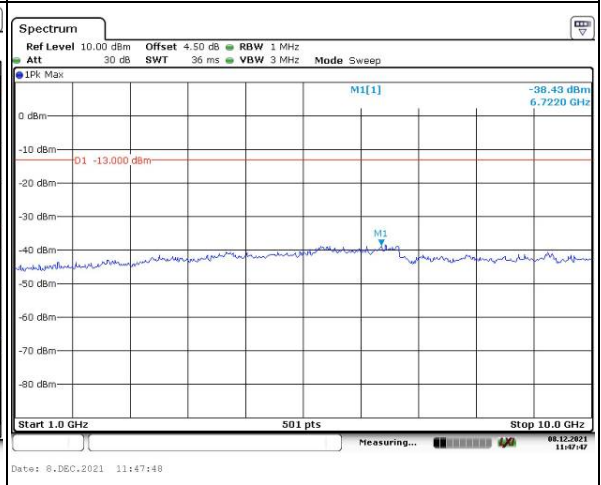
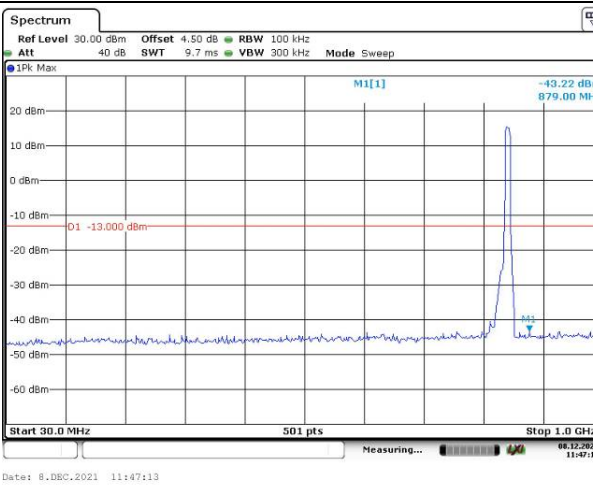
Lowest



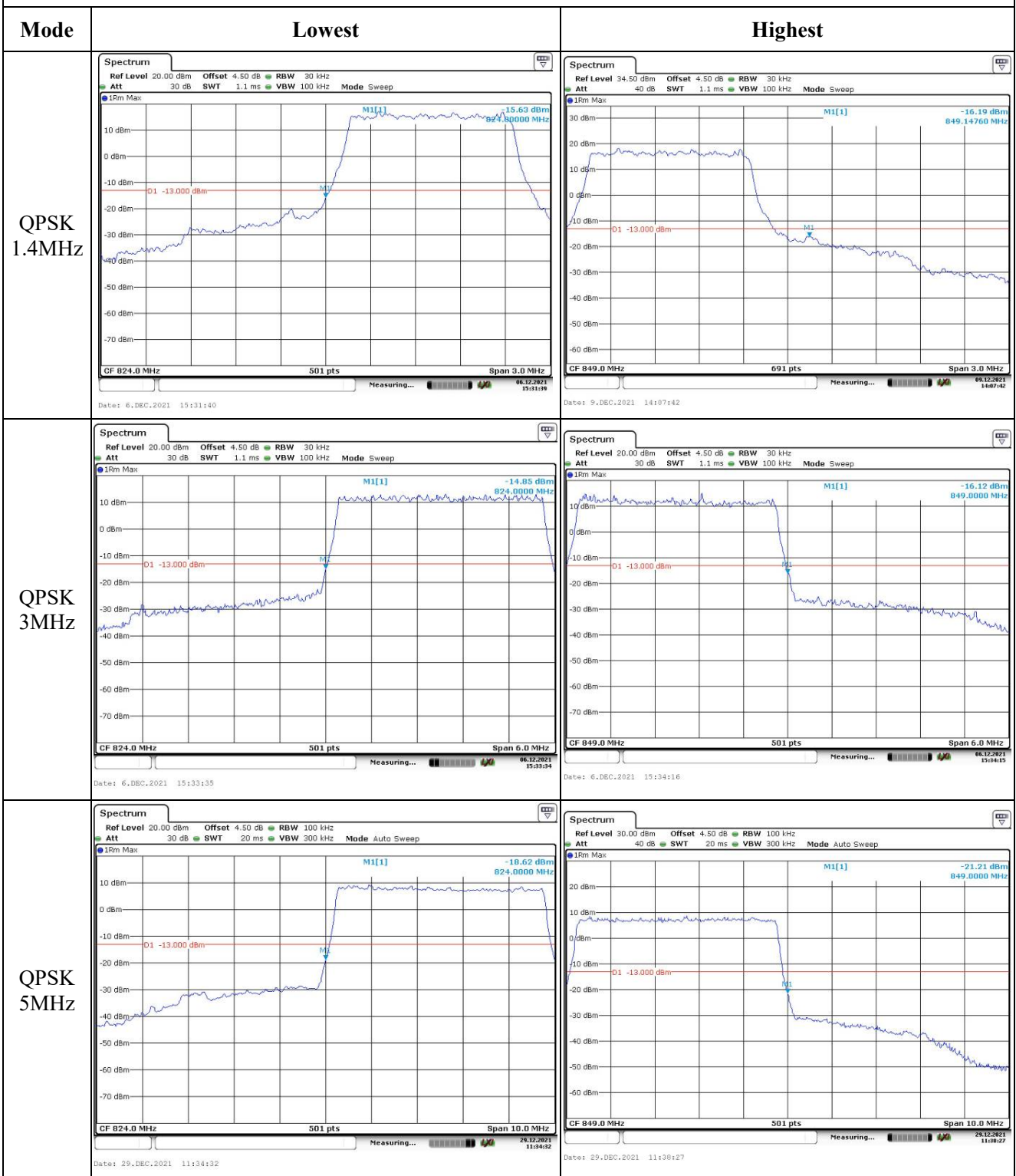
Middle



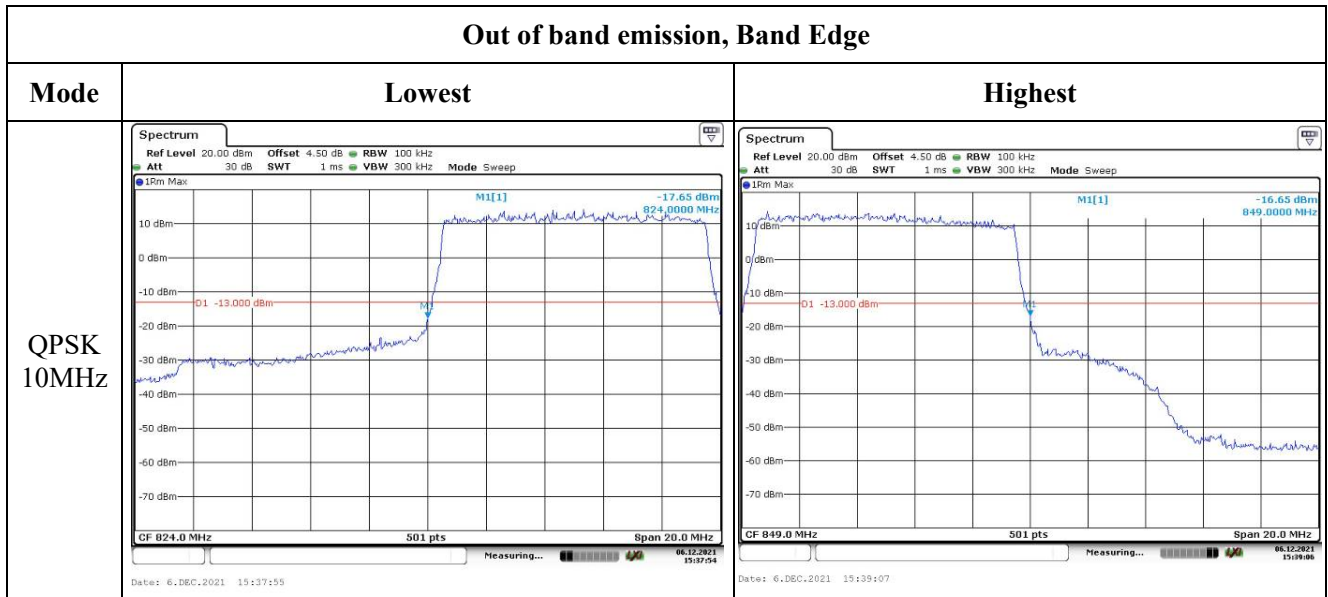
Highest



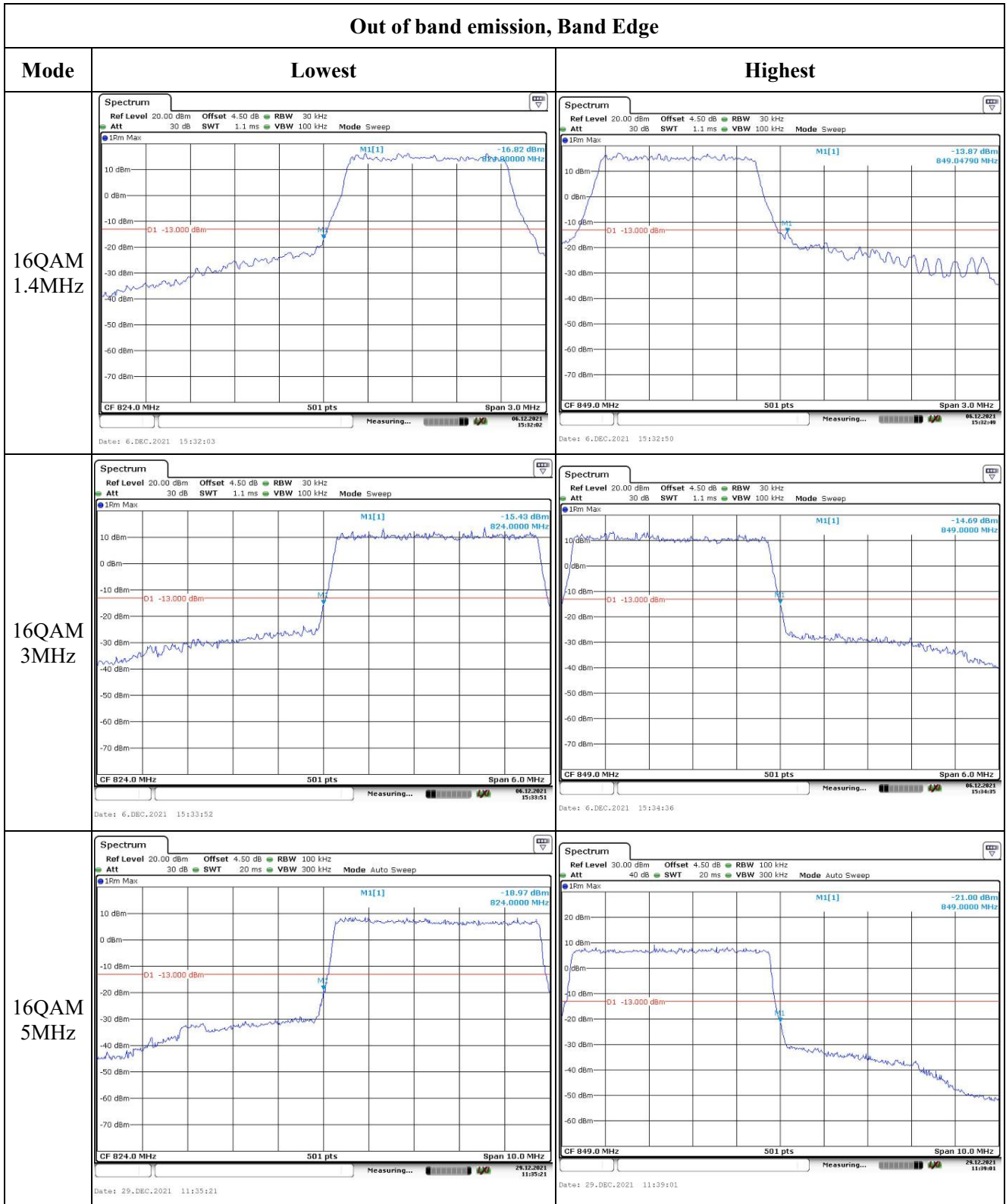
Out of band emission, Band Edge



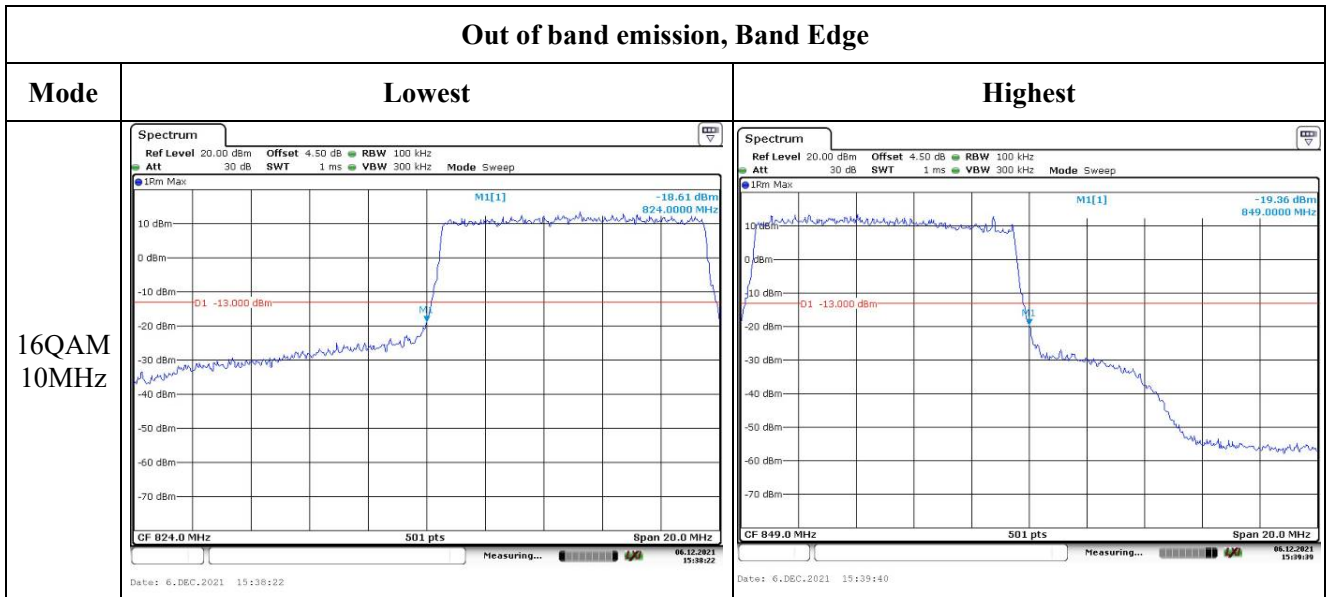
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.9 Antenna Port Test Data and Results for LTE Band 7:

| | | | |
|----------------|------------------|--------------|-----------------------|
| Serial Number: | CR21110036-RF-S1 | Test Date: | 2021/12/06~2021/12/29 |
| Test Site: | RF | Test Mode: | Transmitting |
| Tester: | LE Qiao | Test Result: | Pass |

Environmental Conditions:

| | | | | | |
|----------------------|-----------|------------------------------|-------|---------------------------|-------------|
| Temperature: (°C) | 18.4~21.3 | Relative Humidity: (%) | 32~48 | ATM Pressure: (kPa) | 101.6~101.8 |
|----------------------|-----------|------------------------------|-------|---------------------------|-------------|

Test Equipment List and Details:

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---------------|-------------------------------------|-------------------|---------------|------------------|----------------------|
| R&S | Spectrum Analyzer | Spectrum Analyzer | 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 7▲:

| | | | |
|--------------------------------------|-----|---------------------|------|
| Antenna Gain (dBi): | 1 | Cable Loss (dB): | 0 |
| Operation Voltage(V _{DC}): | | | |
| Lowest: | 3.5 | Normal: | 3.85 |
| | | Highest: | 4.4 |

Test Frequency For Each Mode:

| Operation Bandwidth | Lowest Frequency (MHz) | Middle Frequency (MHz) | Highest Frequency (MHz) |
|---------------------|------------------------|------------------------|-------------------------|
| 5MHz | 2502.5 | 2535 | 2567.5 |
| 10MHz | 2505 | 2535 | 2565 |
| 15MHz | 2507.5 | 2535 | 2562.5 |
| 20MHz | 2510 | 2535 | 2560 |

Test Data:

| FCC§2.1046;§ 27.50(h)(2) | | | | | | |
|---------------------------------|----------------------------|-------------------------------------|----------------|-----------------|--------------------|------------------|
| RF Output Power: | | | | | | |
| Test Bandwidth & Modulation | Resource Block & RB offset | Conducted Average Output Power(dBm) | | | Maximum EIRP (dBm) | EIRP Limit (dBm) |
| | | Lowest Channel | Middle Channel | Highest Channel | | |
| 5MHz QPSK | RB1#0 | 23.16 | 23.50 | 22.95 | 24.58 | 33 |
| | RB1#13 | 23.09 | 23.34 | 22.92 | | |
| | RB1#24 | 23.42 | 23.58 | 22.94 | | |
| | RB15#0 | 22.35 | 22.46 | 22.16 | | |
| | RB15#10 | 22.54 | 22.46 | 22.21 | | |
| | RB25#0 | 22.57 | 22.47 | 22.10 | | |
| 5MHz 16QAM | RB1#0 | 21.85 | 22.65 | 22.20 | 23.65 | 33 |
| | RB1#13 | 21.50 | 22.57 | 21.72 | | |
| | RB1#24 | 21.63 | 22.55 | 22.15 | | |
| | RB15#0 | 21.64 | 21.23 | 20.98 | | |
| | RB15#10 | 21.61 | 21.26 | 20.99 | | |
| | RB25#0 | 21.76 | 21.45 | 20.97 | | |
| 10MHz QPSK | RB1#0 | 22.37 | 22.81 | 22.62 | 24.04 | 33 |
| | RB1#25 | 22.75 | 22.94 | 22.65 | | |
| | RB1#49 | 23.04 | 22.81 | 22.40 | | |
| | RB25#0 | 22.43 | 22.88 | 22.64 | | |
| | RB25#25 | 22.91 | 22.54 | 22.36 | | |
| | RB50#0 | 22.54 | 22.51 | 22.34 | | |
| 10MHz 16QAM | RB1#0 | 21.52 | 21.94 | 21.56 | 23.49 | 33 |
| | RB1#25 | 22.19 | 22.14 | 21.68 | | |
| | RB1#49 | 22.49 | 22.00 | 21.49 | | |
| | RB25#0 | 21.44 | 21.99 | 21.77 | | |
| | RB25#25 | 21.93 | 21.53 | 21.51 | | |
| | RB50#0 | 21.55 | 21.60 | 21.43 | | |
| 15MHz QPSK | RB1#0 | 22.37 | 22.99 | 23.24 | 24.7 | 33 |
| | RB1#38 | 22.79 | 23.17 | 22.49 | | |
| | RB1#74 | 23.70 | 23.58 | 22.66 | | |
| | RB36#0 | 22.39 | 22.68 | 22.70 | | |
| | RB36#39 | 22.86 | 22.34 | 22.24 | | |
| | RB75#0 | 22.53 | 22.36 | 22.31 | | |
| 15MHz 16QAM | RB1#0 | 21.65 | 22.46 | 22.49 | 24.22 | 33 |
| | RB1#38 | 22.27 | 22.05 | 21.85 | | |
| | RB1#74 | 23.22 | 22.61 | 22.04 | | |
| | RB36#0 | 21.43 | 21.81 | 21.72 | | |
| | RB36#39 | 21.97 | 21.49 | 21.31 | | |
| | RB75#0 | 21.70 | 21.40 | 21.36 | | |
| 20MHz QPSK | RB1#0 | 22.10 | 23.35 | 23.42 | 24.6 | 33 |

| | | | | | | |
|--|---------|-------|-------|-------|----------------|-------------|
| | RB1#50 | 23.25 | 23.60 | 22.96 | | |
| | RB1#99 | 23.41 | 23.37 | 22.73 | | |
| | RB50#0 | 22.58 | 22.55 | 22.68 | | |
| | RB50#50 | 22.90 | 22.39 | 22.22 | | |
| | RB100#0 | 22.59 | 22.44 | 22.48 | | |
| 20MHz 16QAM | RB1#0 | 21.16 | 22.76 | 23.15 | 24.15 | 33 |
| | RB1#50 | 22.20 | 22.77 | 22.46 | | |
| | RB1#99 | 22.00 | 23.04 | 22.25 | | |
| | RB50#0 | 21.37 | 21.53 | 21.72 | | |
| | RB50#50 | 21.45 | 21.50 | 21.06 | | |
| | RB100#0 | 21.24 | 21.49 | 21.41 | | |
| Note: EIRP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBi) | | | | | | |
| | | | | | 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 | |
| 20MHz QPSK | RB1#0 | 3.51 | 3.10 | 2.99 | 13 |
| | RB100#0 | 4.20 | 4.00 | 3.86 | 13 |
| 20MHz 16QAM | RB1#0 | 4.52 | 3.91 | 3.86 | 13 |
| | RB100#0 | 5.33 | 5.07 | 4.90 | 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 |
| 5MHz QPSK | 4.551 | 4.511 | 4.531 | 5.060 | 5.080 | 5.020 |
| 5MHz 16QAM | 4.531 | 4.551 | 4.531 | 5.060 | 5.040 | 5.060 |
| 10MHz QPSK | 8.981 | 8.942 | 8.981 | 9.880 | 9.760 | 9.840 |
| 10MHz 16QAM | 8.981 | 8.942 | 8.981 | 9.680 | 9.680 | 9.800 |
| 15MHz QPSK | 13.593 | 13.533 | 13.593 | 15.000 | 14.940 | 16.800 |
| 15MHz 16QAM | 13.533 | 13.533 | 13.593 | 14.880 | 14.940 | 15.180 |
| 20MHz QPSK | 17.964 | 17.964 | 17.964 | 19.920 | 19.600 | 20.560 |
| 20MHz 16QAM | 18.044 | 18.044 | 17.964 | 19.760 | 19.680 | 23.440 |
| 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. |
|----------------|---|

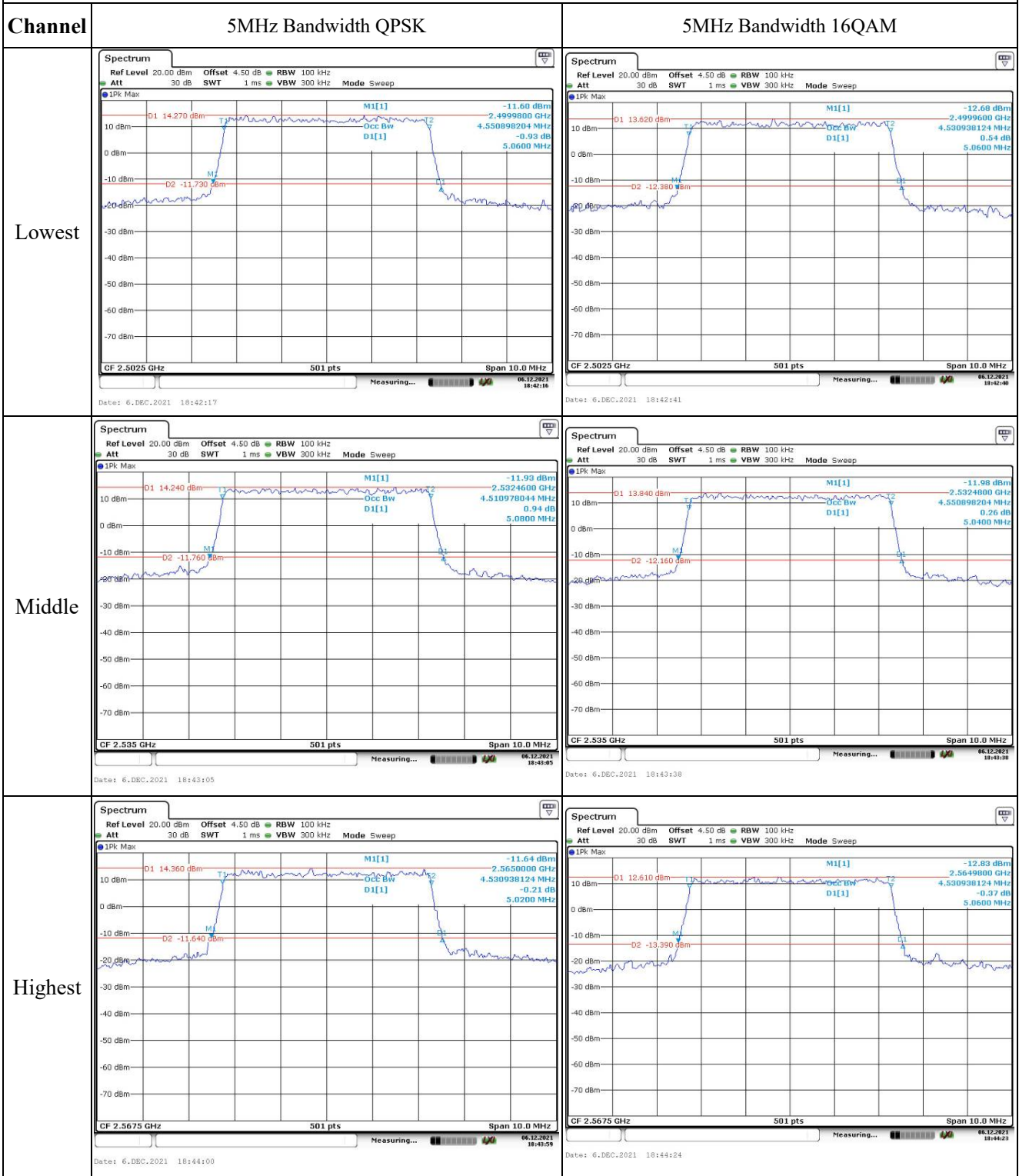
FCC §2.1055, §27.54: Frequency Stability

| Test Mode: | 20M 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 | 3.85 | 2500.529 | 2500.00 | 2569.511 | 2570 |
| | -20 | 3.85 | 2500.521 | 2500.00 | 2569.512 | 2570 |
| | -10 | 3.85 | 2500.522 | 2500.00 | 2569.518 | 2570 |
| | 0 | 3.85 | 2500.527 | 2500.00 | 2569.513 | 2570 |
| | 10 | 3.85 | 2500.526 | 2500.00 | 2569.517 | 2570 |
| | 20 | 3.85 | 2500.529 | 2500.00 | 2569.511 | 2570 |
| | 30 | 3.85 | 2500.527 | 2500.00 | 2569.518 | 2570 |
| | 40 | 3.85 | 2500.528 | 2500.00 | 2569.513 | 2570 |
| Frequency Stability vs. Voltage | 20 | 3.5 | 2500.527 | 2500.00 | 2569.515 | 2570 |
| | 20 | 4.4 | 2500.529 | 2500.00 | 2569.511 | 2570 |
| | | | | | Result: | Pass |

| Test Mode: | 20M 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 | 3.85 | 2500.529 | 2500.00 | 2569.471 | 2570 |
| | -20 | 3.85 | 2500.528 | 2500.00 | 2569.477 | 2570 |
| | -10 | 3.85 | 2500.524 | 2500.00 | 2569.475 | 2570 |
| | 0 | 3.85 | 2500.529 | 2500.00 | 2569.476 | 2570 |
| | 10 | 3.85 | 2500.523 | 2500.00 | 2569.471 | 2570 |
| | 20 | 3.85 | 2500.529 | 2500.00 | 2569.471 | 2570 |
| | 30 | 3.85 | 2500.527 | 2500.00 | 2569.477 | 2570 |
| | 40 | 3.85 | 2500.528 | 2500.00 | 2569.478 | 2570 |
| Frequency Stability vs. Voltage | 20 | 3.5 | 2500.527 | 2500.00 | 2569.479 | 2570 |
| | 20 | 4.4 | 2500.529 | 2500.00 | 2569.471 | 2570 |
| | | | | | Result: | Pass |

Test Plots:

Occupied Bandwidth



Occupied Bandwidth

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

Occupied Bandwidth

| Channel | 15MHz Bandwidth QPSK | 15MHz Bandwidth 16QAM |
|---------|---|---|
| Lowest | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max D1 15.300 dBm M1[1] -11.34 dBm 2.5006500 GHz 13.592814371 MHz Occ Bw 0.12 dB D1[1] 15.0000 MHz CF 2.5075 GHz 501 pts Span 30.0 MHz Date: 6.DEC.2021 18:48:05</p> | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max D1 13.860 dBm M1[1] -12.73 dBm 2.5001200 GHz 13.532934132 MHz Occ Bw 1.52 dB D1[1] 14.8800 MHz CF 2.5075 GHz 501 pts Span 30.0 MHz Date: 6.DEC.2021 18:48:29</p> |
| Middle | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max D1 15.050 dBm M1[1] -9.94 dBm 2.5275600 GHz 13.532934132 MHz Occ Bw -0.84 dB D1[1] 14.9400 MHz CF 2.535 GHz 501 pts Span 30.0 MHz Date: 6.DEC.2021 18:48:57</p> | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max D1 14.190 dBm M1[1] -12.38 dBm 2.5275600 GHz 13.532934132 MHz Occ Bw -0.01 dB D1[1] 14.9400 MHz CF 2.535 GHz 501 pts Span 30.0 MHz Date: 6.DEC.2021 18:49:21</p> |
| Highest | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max D1 14.720 dBm M1[1] -11.05 dBm 2.5592600 GHz 13.592814371 MHz Occ Bw -0.36 dB D1[1] 16.8000 MHz CF 2.5625 GHz 501 pts Span 30.0 MHz Date: 6.DEC.2021 18:49:49</p> | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max D1 14.540 dBm M1[1] -11.46 dBm 2.5548200 GHz 13.592814371 MHz Occ Bw -0.34 dB D1[1] 15.1000 MHz CF 2.5625 GHz 501 pts Span 30.0 MHz Date: 6.DEC.2021 18:50:16</p> |

Occupied Bandwidth

| Channel | 20MHz Bandwidth QPSK | 20MHz Bandwidth 16QAM |
|---------|---|--|
| Lowest | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max D1 14.310 dBm M1[1] -11.38 dBm 2.5003200 GHz Dcc Bw 17.964071856 MHz D1[1] -0.05 dB 19.9200 MHz D2 -11.690 dBm CF 2.51 GHz 501 pts Span 40.0 MHz Date: 6.DEC.2021 18:50:49</p> | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max D1 13.000 dBm M1[1] -12.93 dBm 2.5003200 GHz Dcc Bw 18.043912176 MHz D1[1] -0.56 dB 19.7600 MHz D2 -13.000 dBm CF 2.51 GHz 501 pts Span 40.0 MHz Date: 6.DEC.2021 18:51:16</p> |
| Middle | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max D1 14.420 dBm M1[1] -12.13 dBm 2.5252400 GHz Dcc Bw 17.964071856 MHz D1[1] -0.07 dB 19.6000 MHz D2 -11.580 dBm CF 2.535 GHz 501 pts Span 40.0 MHz Date: 6.DEC.2021 18:51:41</p> | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max D1 13.060 dBm M1[1] -12.22 dBm 2.5251600 GHz Dcc Bw 18.043912176 MHz D1[1] 1.28 dB 19.6000 MHz D2 -12.940 dBm CF 2.535 GHz 501 pts Span 40.0 MHz Date: 6.DEC.2021 18:52:11</p> |
| Highest | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max D1 14.220 dBm M1[1] -11.82 dBm 2.5492800 GHz Dcc Bw 17.964071856 MHz D1[1] 0.51 dB 20.5600 MHz D2 -11.780 dBm CF 2.56 GHz 501 pts Span 40.0 MHz Date: 6.DEC.2021 18:52:39</p> | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max D1 14.400 dBm M1[1] -11.25 dBm 2.5464000 GHz Dcc Bw 17.964071856 MHz D1[1] 0.09 dB 22.4400 MHz D2 -11.400 dBm CF 2.56 GHz 501 pts Span 40.0 MHz Date: 6.DEC.2021 18:53:09</p> |

Spurious Emissions at Antenna Terminal

| Channel | 5MHz Bandwidth QPSK | |
|---------|--|--|
| Lowest | <p>Spectrum Ref Level 0.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -53.14 dBm 956.40 MHz -25.000 dBm Start 30.0 MHz 501 pts Stop 1.0 GHz Date: 8.DEC.2021 11:48:24</p> | <p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 1 MHz Att 40 dB SWT 102 ms VBW 3 MHz Mode Sweep 1Pk Max M1[1] -27.29 dBm 17.7200 GHz -25.000 dBm Start 1.0 GHz 501 pts Stop 26.5 GHz Date: 8.DEC.2021 11:48:49</p> |
| Middle | <p>Spectrum Ref Level 0.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -53.05 dBm 836.40 MHz -25.000 dBm Start 30.0 MHz 501 pts Stop 1.0 GHz Date: 8.DEC.2021 11:49:16</p> | <p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 1 MHz Att 40 dB SWT 102 ms VBW 3 MHz Mode Sweep 1Pk Max M1[1] -27.54 dBm 19.7050 GHz -25.000 dBm Start 1.0 GHz 501 pts Stop 26.5 GHz Date: 8.DEC.2021 11:49:38</p> |
| Highest | <p>Spectrum Ref Level 0.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -53.17 dBm 900.30 MHz -25.000 dBm Start 30.0 MHz 501 pts Stop 1.0 GHz Date: 8.DEC.2021 11:50:07</p> | <p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 1 MHz Att 40 dB SWT 102 ms VBW 3 MHz Mode Sweep 1Pk Max M1[1] -27.80 dBm 18.4330 GHz -25.000 dBm Start 1.0 GHz 501 pts Stop 26.5 GHz Date: 8.DEC.2021 11:50:35</p> |

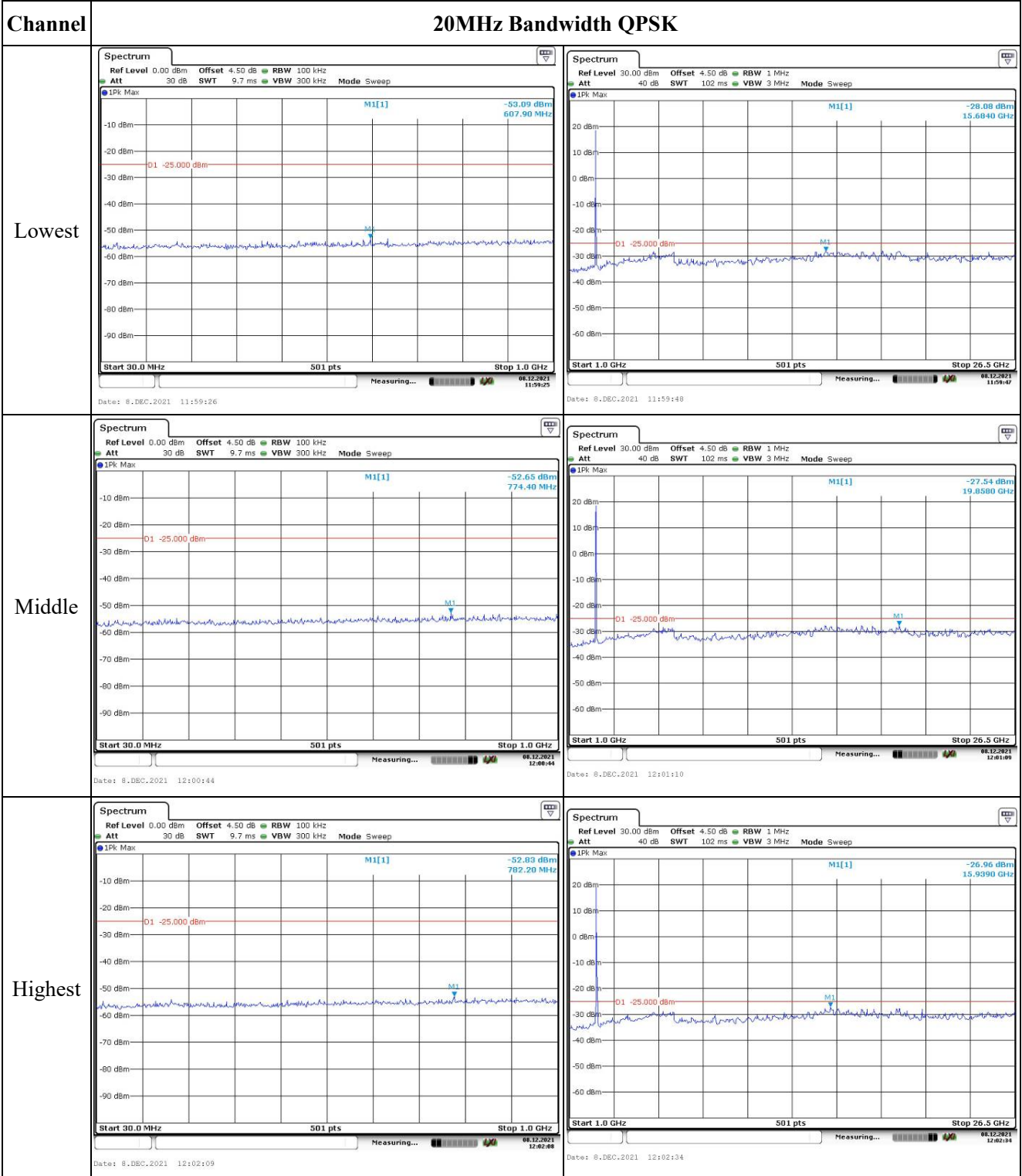
Spurious Emissions at Antenna Terminal

| Channel | 10MHz Bandwidth QPSK | |
|---------|--|--|
| Lowest | <p>Spectrum Ref Level 0.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -51.90 dBm 791.90 MHz -25.000 dBm Start 30.0 MHz 501 pts Stop 1.0 GHz Date: 8.DEC.2021 11:51:12</p> | <p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 1 MHz Att 40 dB SWT 102 ms VBW 3 MHz Mode Sweep 1Pk Max M1[1] -26.35 dBm 17.7200 GHz -25.000 dBm Start 1.0 GHz 501 pts Stop 26.5 GHz Date: 8.DEC.2021 11:51:34</p> |
| Middle | <p>Spectrum Ref Level 0.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -53.29 dBm 910.00 MHz -25.000 dBm Start 30.0 MHz 501 pts Stop 1.0 GHz Date: 8.DEC.2021 11:52:09</p> | <p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 1 MHz Att 40 dB SWT 102 ms VBW 3 MHz Mode Sweep 1Pk Max M1[1] -27.59 dBm 16.9970 GHz -25.000 dBm Start 1.0 GHz 501 pts Stop 26.5 GHz Date: 8.DEC.2021 11:52:28</p> |
| Highest | <p>Spectrum Ref Level 0.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -53.19 dBm 940.90 MHz -25.000 dBm Start 30.0 MHz 501 pts Stop 1.0 GHz Date: 8.DEC.2021 11:53:02</p> | <p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 1 MHz Att 40 dB SWT 102 ms VBW 3 MHz Mode Sweep 1Pk Max M1[1] -27.49 dBm 17.7200 GHz -25.000 dBm Start 1.0 GHz 501 pts Stop 26.5 GHz Date: 8.DEC.2021 11:53:27</p> |

Spurious Emissions at Antenna Terminal

| Channel | 15MHz Bandwidth QPSK | |
|---------|--|--|
| Lowest | <p>Spectrum Ref Level 0.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -59.45 dBm 919.70 MHz -25.000 dBm Start 30.0 MHz 501 pts Stop 1.0 GHz Date: 8.DEC.2021 11:55:00</p> | <p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 1 MHz Att 40 dB SWT 102 ms VBW 3 MHz Mode Sweep 1Pk Max M1[1] -27.69 dBm 16.3460 GHz -25.000 dBm Start 1.0 GHz 501 pts Stop 26.5 GHz Date: 8.DEC.2021 11:55:25</p> |
| Middle | <p>Spectrum Ref Level 0.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -53.22 dBm 850.00 MHz -25.000 dBm Start 30.0 MHz 501 pts Stop 1.0 GHz Date: 8.DEC.2021 11:56:34</p> | <p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 1 MHz Att 40 dB SWT 102 ms VBW 3 MHz Mode Sweep 1Pk Max M1[1] -27.53 dBm 15.9980 GHz -25.000 dBm Start 1.0 GHz 501 pts Stop 26.5 GHz Date: 8.DEC.2021 11:56:56</p> |
| Highest | <p>Spectrum Ref Level 0.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -53.60 dBm 882.90 MHz -25.000 dBm Start 30.0 MHz 501 pts Stop 1.0 GHz Date: 8.DEC.2021 11:57:56</p> | <p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 1 MHz Att 40 dB SWT 102 ms VBW 3 MHz Mode Sweep 1Pk Max M1[1] -27.56 dBm 17.7200 GHz -25.000 dBm Start 1.0 GHz 501 pts Stop 26.5 GHz Date: 8.DEC.2021 11:58:18</p> |

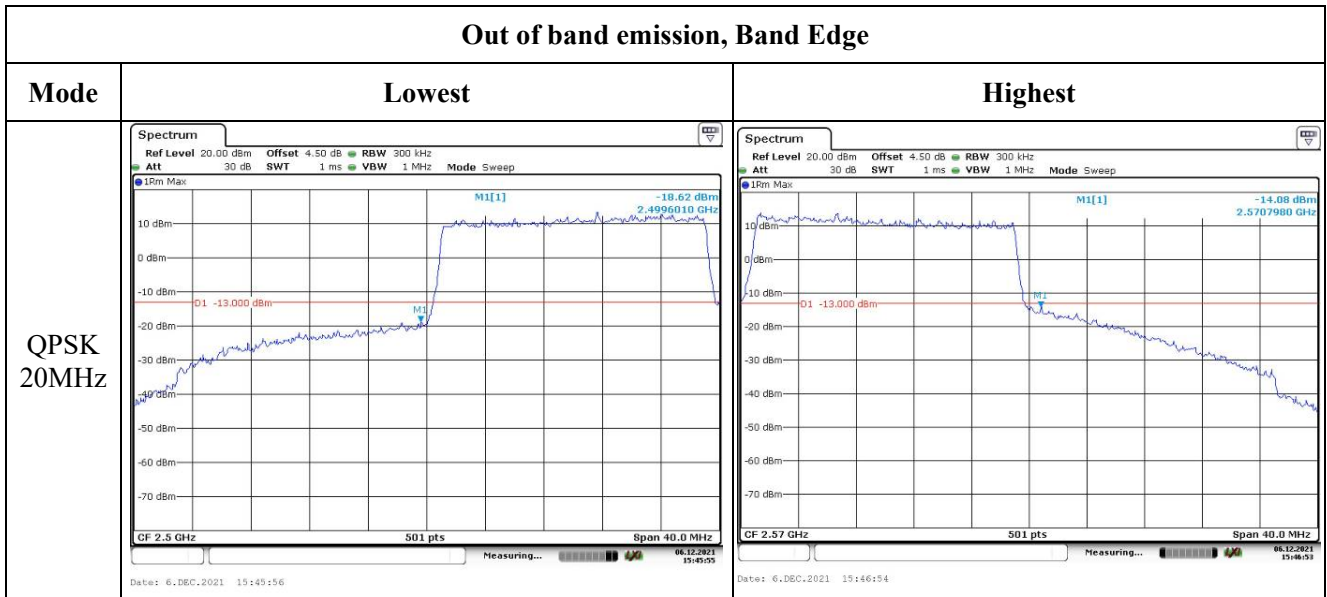
Spurious Emissions at Antenna Terminal



Out of band emission, Band Edge

| Mode | Lowest | Highest |
|---------------|---|--|
| QPSK 5MHz | <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 M1[1] -16.53 dBm 2.4999860 GHz D1 -13.000 dBm CF 2.5 GHz 501 pts Span 10.0 MHz Date: 29.DEC.2021 14:09:38</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 M1[1] -17.21 dBm 2.5700250 GHz D1 -13.000 dBm CF 2.57 GHz 501 pts Span 10.0 MHz Date: 29.DEC.2021 14:14:01</p> |
| QPSK 10MHz | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep M1[1] -18.32 dBm 2.5000000 GHz D1 -13.000 dBm CF 2.5 GHz 501 pts Span 20.0 MHz Date: 6.DEC.2021 15:41:59</p> | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep M1[1] -17.55 dBm 2.5700400 GHz D1 -13.000 dBm CF 2.57 GHz 501 pts Span 20.0 MHz Date: 6.DEC.2021 15:42:54</p> |
| QPSK 15MHz | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep M1[1] -16.22 dBm 2.5000000 GHz D1 -13.000 dBm CF 2.5 GHz 501 pts Span 30.0 MHz Date: 6.DEC.2021 15:43:59</p> | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep M1[1] -13.38 dBm 2.5700000 GHz D1 -13.000 dBm CF 2.57 GHz 501 pts Span 30.0 MHz Date: 6.DEC.2021 15:44:54</p> |

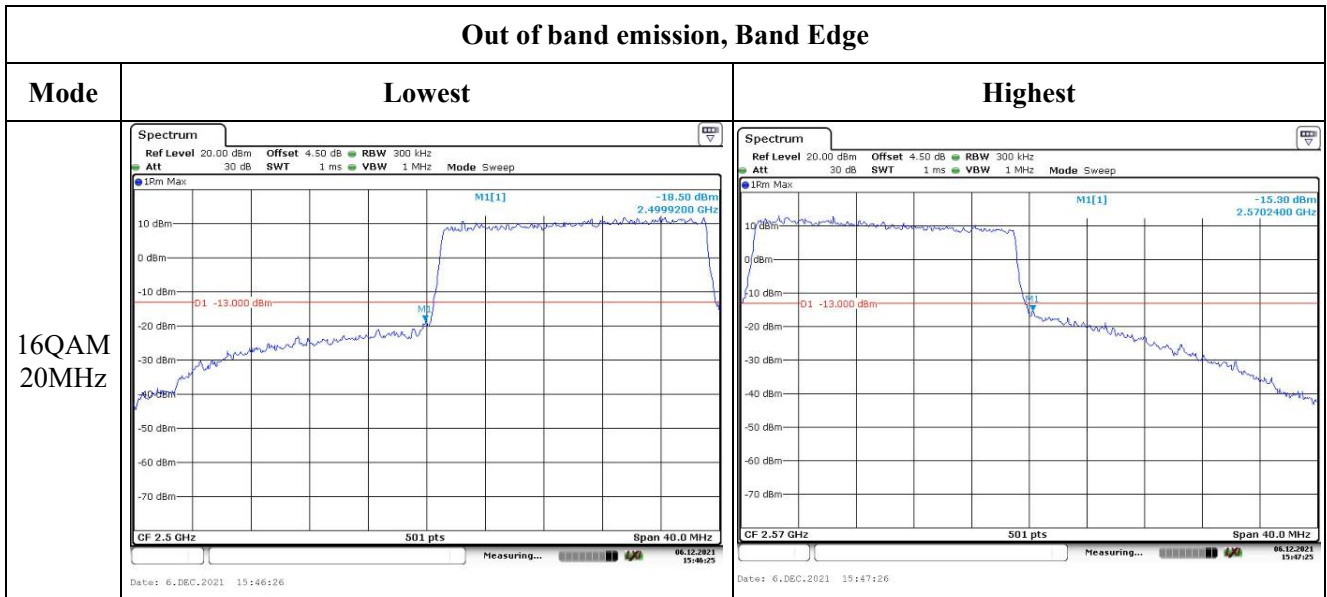
Out of band emission, Band Edge



Out of band emission, Band Edge

| Mode | Lowest | Highest |
|----------------|---|--|
| 16QAM 5MHz | <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 M1[1] -16.17 dBm 2.4999860 GHz D1 -13.000 dBm CF 2.5 GHz 501 pts Span 10.0 MHz Date: 29.DEC.2021 14:10:05</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 M1[1] -15.63 dBm 2.5700050 GHz D1 -13.000 dBm CF 2.57 GHz 501 pts Span 10.0 MHz Date: 29.DEC.2021 14:13:41</p> |
| 16QAM 10MHz | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep M1[1] -22.21 dBm 2.5000000 GHz D1 -13.000 dBm CF 2.5 GHz 501 pts Span 20.0 MHz Date: 6.DEC.2021 15:42:26</p> | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep M1[1] -20.23 dBm 2.5700000 GHz D1 -13.000 dBm CF 2.57 GHz 501 pts Span 20.0 MHz Date: 6.DEC.2021 15:43:27</p> |
| 16QAM 15MHz | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep M1[1] -10.76 dBm 2.5000000 GHz D1 -13.000 dBm CF 2.5 GHz 501 pts Span 30.0 MHz Date: 6.DEC.2021 15:44:28</p> | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 300 kHz Att 30 dB SWT 1 ms VBW 1 MHz Mode Sweep M1[1] -15.19 dBm 2.5700000 GHz D1 -13.000 dBm CF 2.57 GHz 501 pts Span 30.0 MHz Date: 6.DEC.2021 15:45:24</p> |

Out of band emission, Band Edge



4.10 Antenna Port Test Data and Results for LTE Band 12:

| | | | |
|----------------|------------------|--------------|-----------------------|
| Serial Number: | CR21110036-RF-S1 | Test Date: | 2021/12/06~2021/12/29 |
| Test Site: | RF | Test Mode: | Transmitting |
| Tester: | LE Qiao | Test Result: | Pass |

Environmental Conditions:

| | | | | | |
|----------------------|-----------|---------------------------|-------|------------------------|-------------|
| Temperature: (°C) | 18.4~21.3 | Relative Humidity: (%) | 32~48 | ATM Pressure: (kPa) | 101.6~101.8 |
|----------------------|-----------|---------------------------|-------|------------------------|-------------|

Test Equipment List and Details:

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---------------|-------------------------------------|-------------------|---------------|------------------|----------------------|
| R&S | Spectrum Analyzer | Spectrum Analyzer | 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): | 3 | Antenna Gain (dBd): | 0.85 | Cable Loss (dB): | 0 |
| Operation Voltage(V _{DC}): | | | | | |
| Lowest: | 3.5 | Normal: | 3.8 | Highest: | 4.4 |

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 | 22.37 | 22.51 | 22.43 | 23.47 | 34.77 |
| | RB1#3 | 22.32 | 22.42 | 22.58 | | |
| | RB1#5 | 22.49 | 22.52 | 22.58 | | |
| | RB3#0 | 22.43 | 22.62 | 22.49 | | |
| | RB3#3 | 22.31 | 22.36 | 22.53 | | |
| | RB6#0 | 21.14 | 21.51 | 21.65 | | |
| 1.4MHz 16QAM | RB1#0 | 21.67 | 21.78 | 21.07 | 22.66 | 34.77 |
| | RB1#3 | 21.71 | 21.81 | 21.20 | | |
| | RB1#5 | 21.77 | 21.81 | 21.20 | | |
| | RB3#0 | 21.48 | 21.37 | 21.14 | | |
| | RB3#3 | 21.42 | 21.32 | 21.20 | | |
| | RB6#0 | 20.36 | 20.74 | 20.53 | | |
| 3MHz QPSK | RB1#0 | 22.31 | 22.42 | 22.42 | 23.46 | 34.77 |
| | RB1#8 | 22.27 | 22.52 | 22.26 | | |
| | RB1#14 | 22.57 | 22.61 | 22.35 | | |
| | RB6#0 | 21.24 | 21.63 | 21.32 | | |
| | RB6#9 | 21.49 | 21.60 | 21.41 | | |
| | RB15#0 | 21.40 | 21.48 | 21.35 | | |
| 3MHz 16QAM | RB1#0 | 21.78 | 21.57 | 21.62 | 22.69 | 34.77 |
| | RB1#8 | 21.60 | 21.52 | 21.66 | | |
| | RB1#14 | 21.84 | 21.78 | 21.82 | | |
| | RB6#0 | 20.21 | 20.54 | 20.22 | | |
| | RB6#9 | 20.35 | 20.66 | 20.39 | | |
| | RB15#0 | 20.48 | 20.48 | 20.23 | | |
| 5MHz QPSK | RB1#0 | 21.79 | 22.20 | 22.30 | 23.45 | 34.77 |
| | RB1#13 | 22.00 | 22.19 | 22.26 | | |
| | RB1#24 | 22.41 | 22.60 | 22.50 | | |
| | RB15#0 | 21.12 | 21.36 | 21.31 | | |
| | RB15#10 | 21.25 | 21.33 | 21.47 | | |
| | RB25#0 | 21.13 | 21.38 | 21.31 | | |
| 5MHz 16QAM | RB1#0 | 20.50 | 21.46 | 20.91 | 22.42 | 34.77 |
| | RB1#13 | 20.16 | 20.86 | 21.26 | | |
| | RB1#24 | 20.57 | 21.50 | 21.57 | | |
| | RB15#0 | 20.03 | 20.06 | 20.16 | | |
| | RB15#10 | 20.06 | 20.11 | 20.27 | | |
| | RB25#0 | 20.06 | 20.17 | 20.37 | | |
| 10MHz QPSK | RB1#0 | 22.00 | 22.22 | 22.43 | 23.49 | 34.77 |

| | | | | | | |
|---|---------|-------|-------|-------|----------------|-------------|
| | RB1#25 | 22.55 | 22.26 | 22.57 | | |
| | RB1#49 | 22.22 | 22.40 | 22.64 | | |
| | RB25#0 | 21.28 | 21.32 | 21.42 | | |
| | RB25#25 | 21.28 | 21.34 | 21.60 | | |
| | RB50#0 | 21.37 | 21.42 | 21.45 | | |
| 10MHz 16QAM | RB1#0 | 21.40 | 21.50 | 21.26 | 22.66 | 34.77 |
| | RB1#25 | 21.81 | 21.57 | 21.49 | | |
| | RB1#49 | 21.52 | 21.63 | 21.62 | | |
| | RB25#0 | 20.32 | 20.40 | 20.39 | | |
| | RB25#25 | 20.23 | 20.29 | 20.59 | | |
| | RB50#0 | 20.29 | 20.26 | 20.35 | | |
| 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 | 3.97 | 4.00 | 4.00 | 13 |
| | RB50#0 | 5.22 | 5.65 | 5.62 | 13 |
| 10MHz 16QAM | RB1#0 | 5.01 | 5.04 | 5.04 | 13 |
| | RB50#0 | 6.41 | 6.70 | 6.61 | 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 | 1.108 | 1.296 | 1.314 | 1.290 |
| 1.4MHz 16QAM | 1.102 | 1.102 | 1.102 | 1.326 | 1.290 | 1.308 |
| 3MHz QPSK | 2.695 | 2.707 | 2.683 | 2.940 | 2.964 | 2.952 |
| 3MHz 16QAM | 2.695 | 2.695 | 2.683 | 2.964 | 2.976 | 2.928 |
| 5MHz QPSK | 4.551 | 4.531 | 4.511 | 5.040 | 5.040 | 5.000 |
| 5MHz 16QAM | 4.511 | 4.551 | 4.551 | 4.980 | 5.040 | 5.060 |
| 10MHz QPSK | 8.942 | 8.942 | 8.981 | 9.680 | 9.760 | 9.760 |
| 10MHz 16QAM | 8.901 | 8.981 | 8.981 | 9.680 | 9.720 | 9.840 |
| 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. |
|----------------|---|

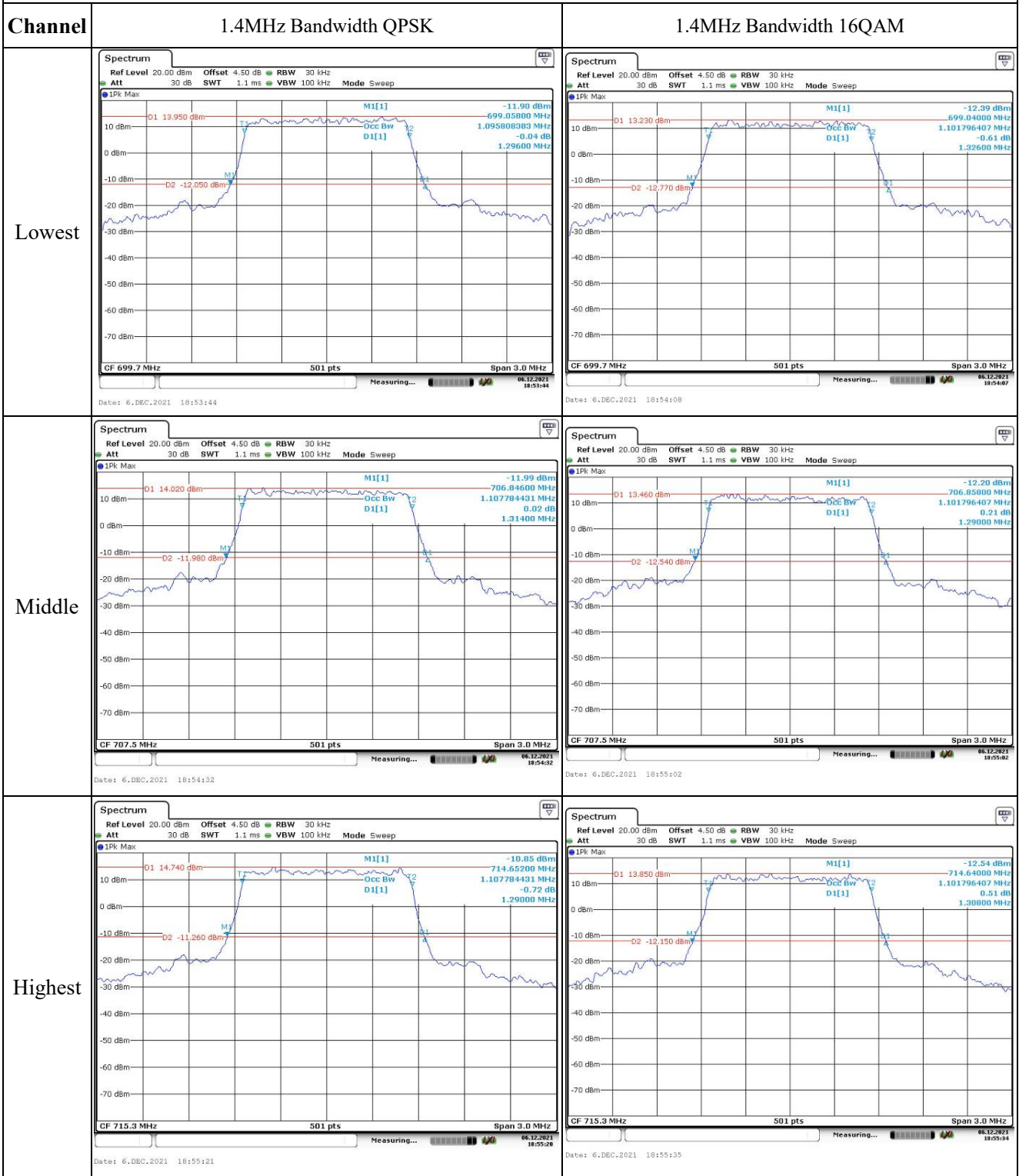
FCC §2.1055, §27.54: Frequency Stability

| 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 | 3.85 | 699.527 | 699.00 | 715.511 | 716.00 |
| | -20 | 3.85 | 699.522 | 699.00 | 715.514 | 716.00 |
| | -10 | 3.85 | 699.523 | 699.00 | 715.512 | 716.00 |
| | 0 | 3.85 | 699.527 | 699.00 | 715.513 | 716.00 |
| | 10 | 3.85 | 699.522 | 699.00 | 715.517 | 716.00 |
| | 20 | 3.85 | 699.529 | 699.00 | 715.511 | 716.00 |
| | 30 | 3.85 | 699.528 | 699.00 | 715.513 | 716.00 |
| | 40 | 3.85 | 699.521 | 699.00 | 715.517 | 716.00 |
| Frequency Stability vs. Voltage | 20 | 3.5 | 699.523 | 699.00 | 715.512 | 716.00 |
| | 20 | 4.4 | 699.529 | 699.00 | 715.511 | 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 | 3.85 | 699.523 | 699.00 | 715.513 | 716.00 |
| | -20 | 3.85 | 699.524 | 699.00 | 715.514 | 716.00 |
| | -10 | 3.85 | 699.525 | 699.00 | 715.515 | 716.00 |
| | 0 | 3.85 | 699.526 | 699.00 | 715.516 | 716.00 |
| | 10 | 3.85 | 699.527 | 699.00 | 715.517 | 716.00 |
| | 20 | 3.85 | 699.529 | 699.00 | 715.511 | 716.00 |
| | 30 | 3.85 | 699.528 | 699.00 | 715.518 | 716.00 |
| | 40 | 3.85 | 699.529 | 699.00 | 715.510 | 716.00 |
| Frequency Stability vs. Voltage | 20 | 3.5 | 699.521 | 699.00 | 715.515 | 716.00 |
| | 20 | 4.4 | 699.529 | 699.00 | 715.511 | 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 20.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max D1 14.330 dBm M1[1] -13.01 dBm Dcc Bw 5.0400 MHz D1[1] 4.550898204 MHz 1.25 dB D2 -11.670 dBm CF 701.5 MHz 501 pts Span 10.0 MHz Date: 6.DEC.2021 18:58:31</p> | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max D1 13.540 dBm M1[1] -11.48 dBm Dcc Bw 5.0400 MHz D1[1] 4.550898204 MHz -1.12 dB D2 -12.460 dBm CF 701.5 MHz 501 pts Span 10.0 MHz Date: 6.DEC.2021 18:59:01</p> |
| Middle | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max D1 13.700 dBm M1[1] -11.53 dBm Dcc Bw 5.0400 MHz D1[1] 4.550938124 MHz -1.07 dB D2 -12.300 dBm CF 707.5 MHz 501 pts Span 10.0 MHz Date: 6.DEC.2021 18:59:31</p> | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max D1 13.030 dBm M1[1] -13.06 dBm Dcc Bw 5.0400 MHz D1[1] 4.550898204 MHz -0.31 dB D2 -12.970 dBm CF 707.5 MHz 501 pts Span 10.0 MHz Date: 6.DEC.2021 18:59:58</p> |
| Highest | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max D1 14.690 dBm M1[1] -11.08 dBm Dcc Bw 5.0000 MHz D1[1] 4.551097804 MHz -0.94 dB D2 -11.310 dBm CF 713.5 MHz 501 pts Span 10.0 MHz Date: 6.DEC.2021 19:00:17</p> | <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max D1 12.990 dBm M1[1] -12.43 dBm Dcc Bw 5.0600 MHz D1[1] 4.550898204 MHz 0.30 dB D2 -13.010 dBm CF 713.5 MHz 501 pts Span 10.0 MHz Date: 6.DEC.2021 19:00:47</p> |

Occupied Bandwidth

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