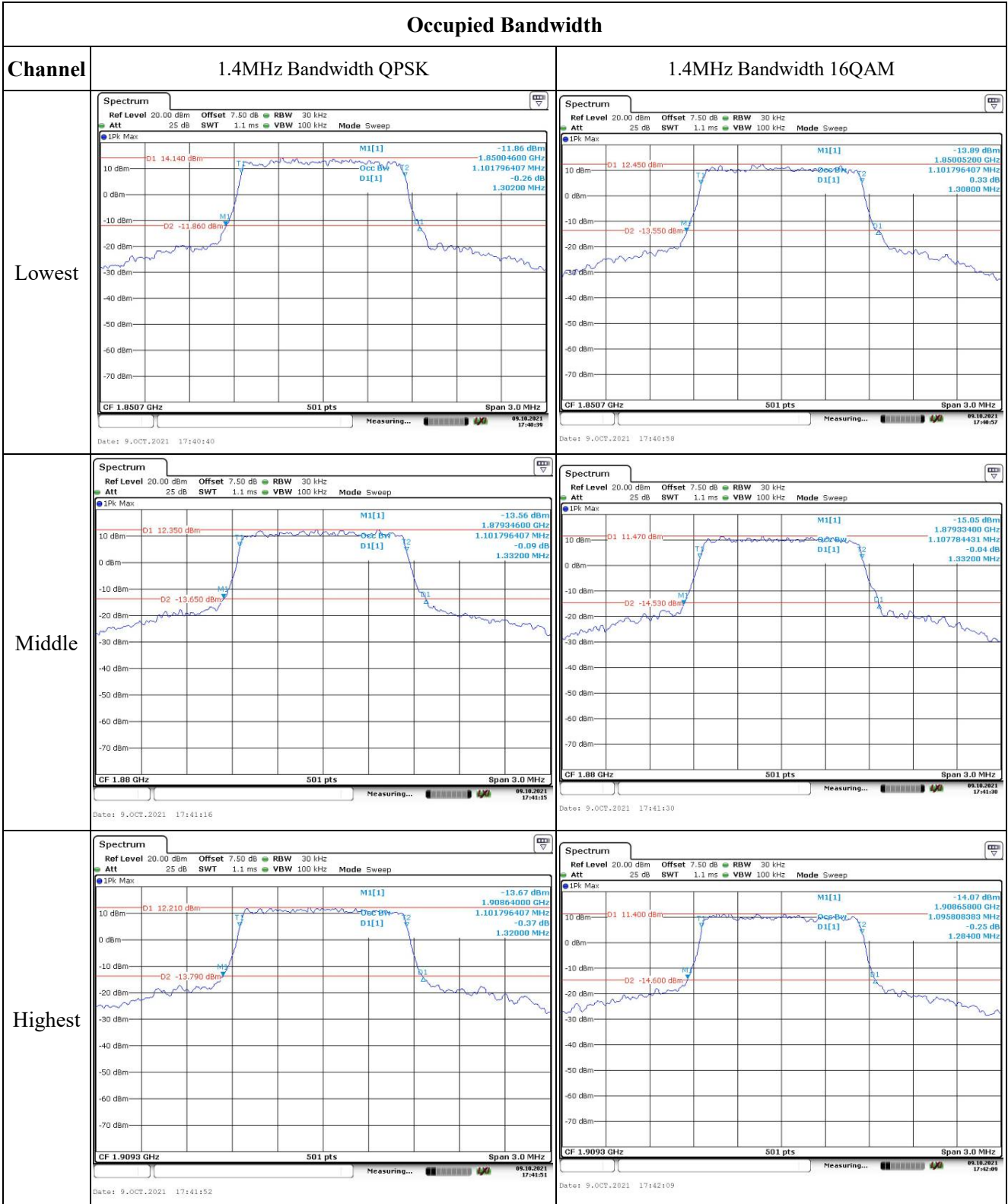


Test Plots:

Occupied Bandwidth



Occupied Bandwidth

Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz                      Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep                      1Pk Max                      M1[1] -15.33 dBm                      1.8500500 GHz                      Occ Bw 2.682634731 MHz                      0.24 dB                      2.8800 MHz                      D1 10.930 dBm                      D2 -16.070 dBm                      CF 1.8515 GHz 501 pts Span 6.0 MHz                      Date: 9.OCT.2021 17:42:33</p>	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz                      Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep                      1Pk Max                      M1[1] -17.29 dBm                      1.8500600 GHz                      Occ Bw 2.682634731 MHz                      0.79 dB                      2.8920 MHz                      D1 9.050 dBm                      D2 -16.950 dBm                      CF 1.8515 GHz 501 pts Span 6.0 MHz                      Date: 9.OCT.2021 17:43:00</p>
Middle	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz                      Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep                      1Pk Max                      M1[1] -16.31 dBm                      1.8785600 GHz                      Occ Bw 2.694610770 MHz                      0.03 dB                      2.8800 MHz                      D1 9.750 dBm                      D2 -16.250 dBm                      CF 1.88 GHz 501 pts Span 6.0 MHz                      Date: 9.OCT.2021 17:43:22</p>	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz                      Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep                      1Pk Max                      M1[1] -17.32 dBm                      1.8785480 GHz                      Occ Bw 2.682634731 MHz                      0.21 dB                      2.8800 MHz                      D1 8.390 dBm                      D2 -17.610 dBm                      CF 1.88 GHz 501 pts Span 6.0 MHz                      Date: 9.OCT.2021 17:43:42</p>
Highest	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz                      Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep                      1Pk Max                      M1[1] -17.98 dBm                      1.9070480 GHz                      Occ Bw 2.682634731 MHz                      0.25 dB                      2.9040 MHz                      D1 8.810 dBm                      D2 -17.190 dBm                      CF 1.9085 GHz 501 pts Span 6.0 MHz                      Date: 9.OCT.2021 17:44:10</p>	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz                      Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep                      1Pk Max                      M1[1] -16.31 dBm                      1.9070600 GHz                      Occ Bw 2.682634731 MHz                      -0.81 dB                      2.8800 MHz                      D1 8.830 dBm                      D2 -17.170 dBm                      CF 1.9085 GHz 501 pts Span 6.0 MHz                      Date: 9.OCT.2021 17:44:33</p>

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -17.10 dBm 1.8500900 GHz 8.942115768 MHz 0.26 dB 9.7600 MHz -16.580 dBm CF 1.855 GHz 501 pts Span 20.0 MHz Date: 9.OCT.2021 17:47:41</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -14.75 dBm 1.8502400 GHz 8.942115768 MHz 0.68 dB 9.5200 MHz -15.830 dBm CF 1.855 GHz 501 pts Span 20.0 MHz Date: 9.OCT.2021 17:48:12</p>
Middle	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -16.00 dBm 1.8752000 GHz 8.982035928 MHz 0.11 dB 9.6000 MHz -16.580 dBm CF 1.88 GHz 501 pts Span 20.0 MHz Date: 9.OCT.2021 17:48:40</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -16.97 dBm 1.8752000 GHz 8.942115768 MHz -0.18 dB 9.6800 MHz -17.440 dBm CF 1.88 GHz 501 pts Span 20.0 MHz Date: 9.OCT.2021 17:49:05</p>
Highest	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -15.94 dBm 1.9002000 GHz 8.942115768 MHz -0.32 dB 9.6000 MHz -16.600 dBm CF 1.905 GHz 501 pts Span 20.0 MHz Date: 9.OCT.2021 17:49:46</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -18.39 dBm 1.9001600 GHz 8.942115768 MHz -0.23 dB 9.6800 MHz -17.700 dBm CF 1.905 GHz 501 pts Span 20.0 MHz Date: 9.OCT.2021 17:50:17</p>

Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

Occupied Bandwidth

Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz                      Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep                      1Pk Max                      M1[1] -14.02 dBm 1.8495200 GHz                      D1[1] -1.52 dB 20.8800 MHz                      D2 -14.11 dBm                      CF 1.86 GHz 501 pts Span 40.0 MHz                      Date: 9.OCT.2021 17:53:40</p>	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz                      Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep                      1Pk Max                      M1[1] -16.06 dBm 1.8503200 GHz                      D1[1] -1.99 dB 19.3600 MHz                      D2 -15.190 dBm                      CF 1.86 GHz 501 pts Span 40.0 MHz                      Date: 9.OCT.2021 17:54:07</p>
Middle	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz                      Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep                      1Pk Max                      M1[1] -14.96 dBm 1.8704000 GHz                      D1[1] 1.77 dB 19.2800 MHz                      D2 -14.160 dBm                      CF 1.88 GHz 501 pts Span 40.0 MHz                      Date: 9.OCT.2021 17:54:35</p>	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz                      Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep                      1Pk Max                      M1[1] -16.45 dBm 1.8702400 GHz                      D1[1] -1.48 dB 19.9200 MHz                      D2 -15.650 dBm                      CF 1.88 GHz 501 pts Span 40.0 MHz                      Date: 9.OCT.2021 17:55:02</p>
Highest	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz                      Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep                      1Pk Max                      M1[1] -15.48 dBm 1.8902400 GHz                      D1[1] 0.07 dB 19.6000 MHz                      D2 -14.790 dBm                      CF 1.9 GHz 501 pts Span 40.0 MHz                      Date: 9.OCT.2021 17:55:33</p>	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz                      Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep                      1Pk Max                      M1[1] -14.34 dBm 1.8904000 GHz                      D1[1] -1.57 dB 19.3600 MHz                      D2 -15.120 dBm                      CF 1.9 GHz 501 pts Span 40.0 MHz                      Date: 9.OCT.2021 17:56:03</p>

### Spurious Emissions at Antenna Terminal

Channel	1.4MHz Bandwidth QPSK	
Lowest	<p>Ref Level 10.00 dBm Offset 7.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -50.63 dBm 960.30 MHz -13.000 dBm Start 30.0 MHz 501 pts Stop 1.0 GHz Date: 9.OCT.2021 19:27:22</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 1 MHz Att 25 dB SWT 76 ms VBW 3 MHz Mode Sweep 1Pk Max M1[1] -39.69 dBm 6.1010 GHz -13.000 dBm Start 1.0 GHz 501 pts Stop 20.0 GHz Date: 9.OCT.2021 19:27:53</p>
Middle	<p>Ref Level 10.00 dBm Offset 7.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -49.86 dBm 817.00 MHz -13.000 dBm Start 30.0 MHz 501 pts Stop 1.0 GHz Date: 9.OCT.2021 19:28:32</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 1 MHz Att 25 dB SWT 76 ms VBW 3 MHz Mode Sweep 1Pk Max M1[1] -35.26 dBm 3.7500 GHz -13.000 dBm Start 1.0 GHz 501 pts Stop 20.0 GHz Date: 9.OCT.2021 19:28:54</p>
Highest	<p>Ref Level 10.00 dBm Offset 7.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep 1Pk Max M1[1] -50.20 dBm 625.40 MHz -13.000 dBm Start 30.0 MHz 501 pts Stop 1.0 GHz Date: 9.OCT.2021 19:29:17</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 1 MHz Att 25 dB SWT 76 ms VBW 3 MHz Mode Sweep 1Pk Max M1[1] -37.15 dBm 3.8250 GHz -13.000 dBm Start 1.0 GHz 501 pts Stop 20.0 GHz Date: 9.OCT.2021 19:29:42</p>

### Spurious Emissions at Antenna Terminal

Channel	3MHz Bandwidth QPSK	
Lowest	<p><b>Spectrum</b>                      Ref Level 10.00 dBm Offset 7.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep                      1Pk Max                      M1[1] -50.13 dBm 830.60 MHz                      -13.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 9.OCT.2021 19:30:11</p>	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 1 MHz                      Att 25 dB SWT 76 ms VBW 3 MHz Mode Sweep                      1Pk Max                      M1[1] -40.17 dBm 6.9350 GHz                      -13.000 dBm                      Start 1.0 GHz 501 pts Stop 20.0 GHz                      Date: 9.OCT.2021 19:30:36</p>
Middle	<p><b>Spectrum</b>                      Ref Level 10.00 dBm Offset 7.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep                      1Pk Max                      M1[1] -50.14 dBm 995.20 MHz                      -13.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 9.OCT.2021 19:31:06</p>	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 1 MHz                      Att 25 dB SWT 76 ms VBW 3 MHz Mode Sweep                      1Pk Max                      M1[1] -39.40 dBm 3.7500 GHz                      -13.000 dBm                      Start 1.0 GHz 501 pts Stop 20.0 GHz                      Date: 9.OCT.2021 19:31:25</p>
Highest	<p><b>Spectrum</b>                      Ref Level 10.00 dBm Offset 7.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep                      1Pk Max                      M1[1] -49.63 dBm 997.10 MHz                      -13.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 9.OCT.2021 19:32:04</p>	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 1 MHz                      Att 25 dB SWT 76 ms VBW 3 MHz Mode Sweep                      1Pk Max                      M1[1] -39.40 dBm 3.8250 GHz                      -13.000 dBm                      Start 1.0 GHz 501 pts Stop 20.0 GHz                      Date: 9.OCT.2021 19:32:23</p>

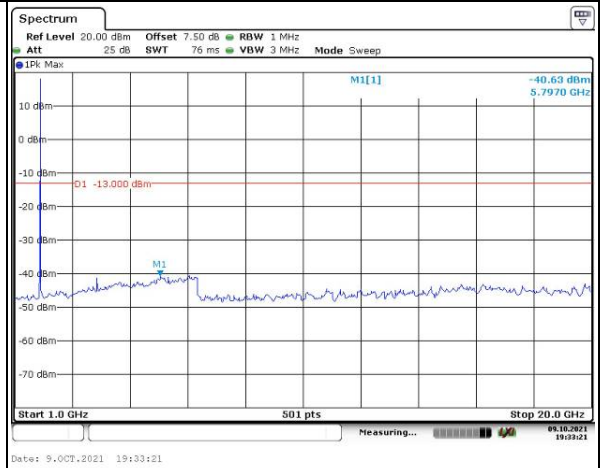
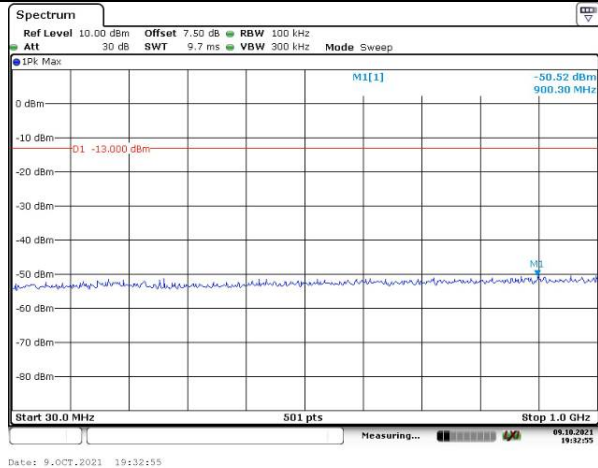


### Spurious Emissions at Antenna Terminal

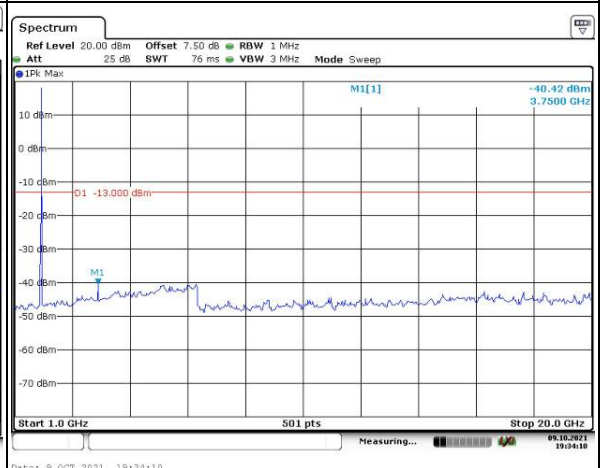
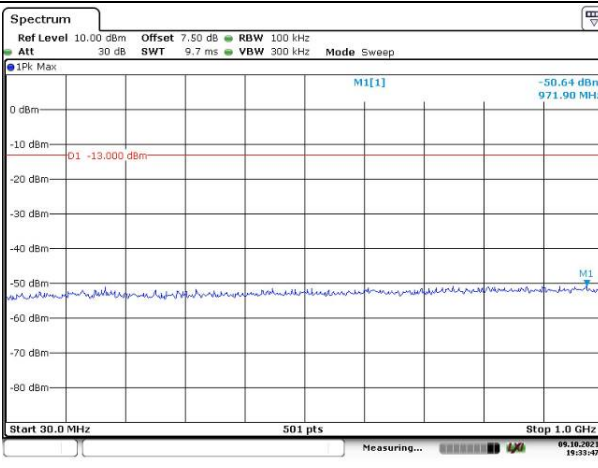
Channel

5MHz Bandwidth QPSK

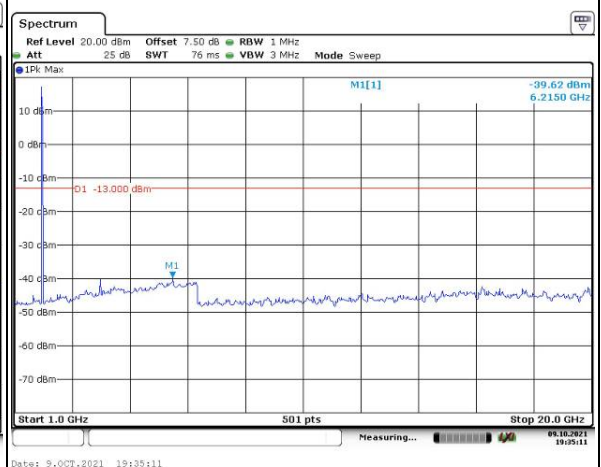
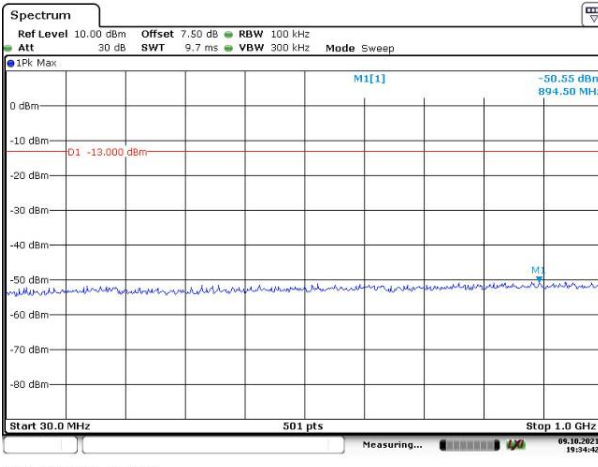
Lowest



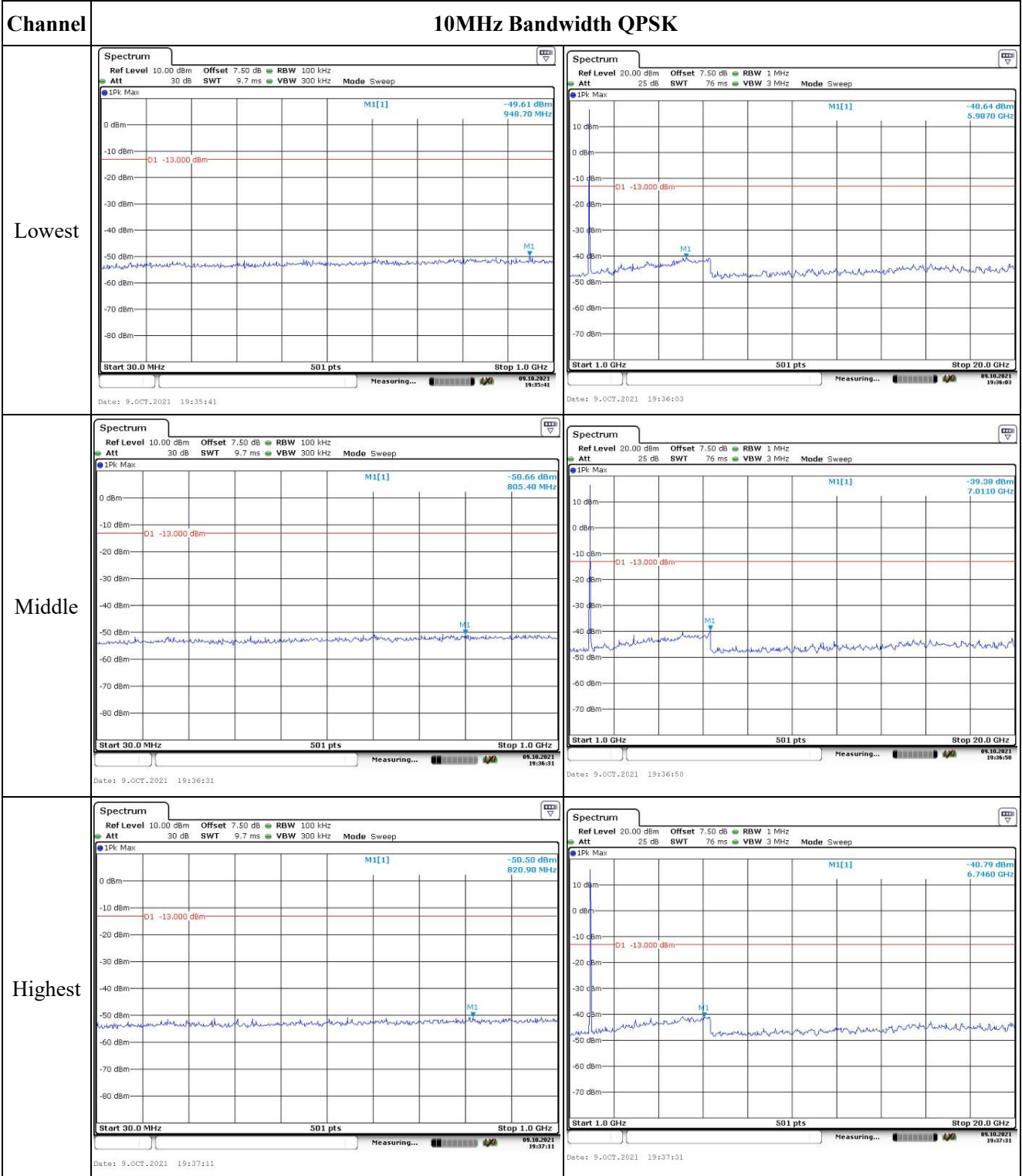
Middle



Highest



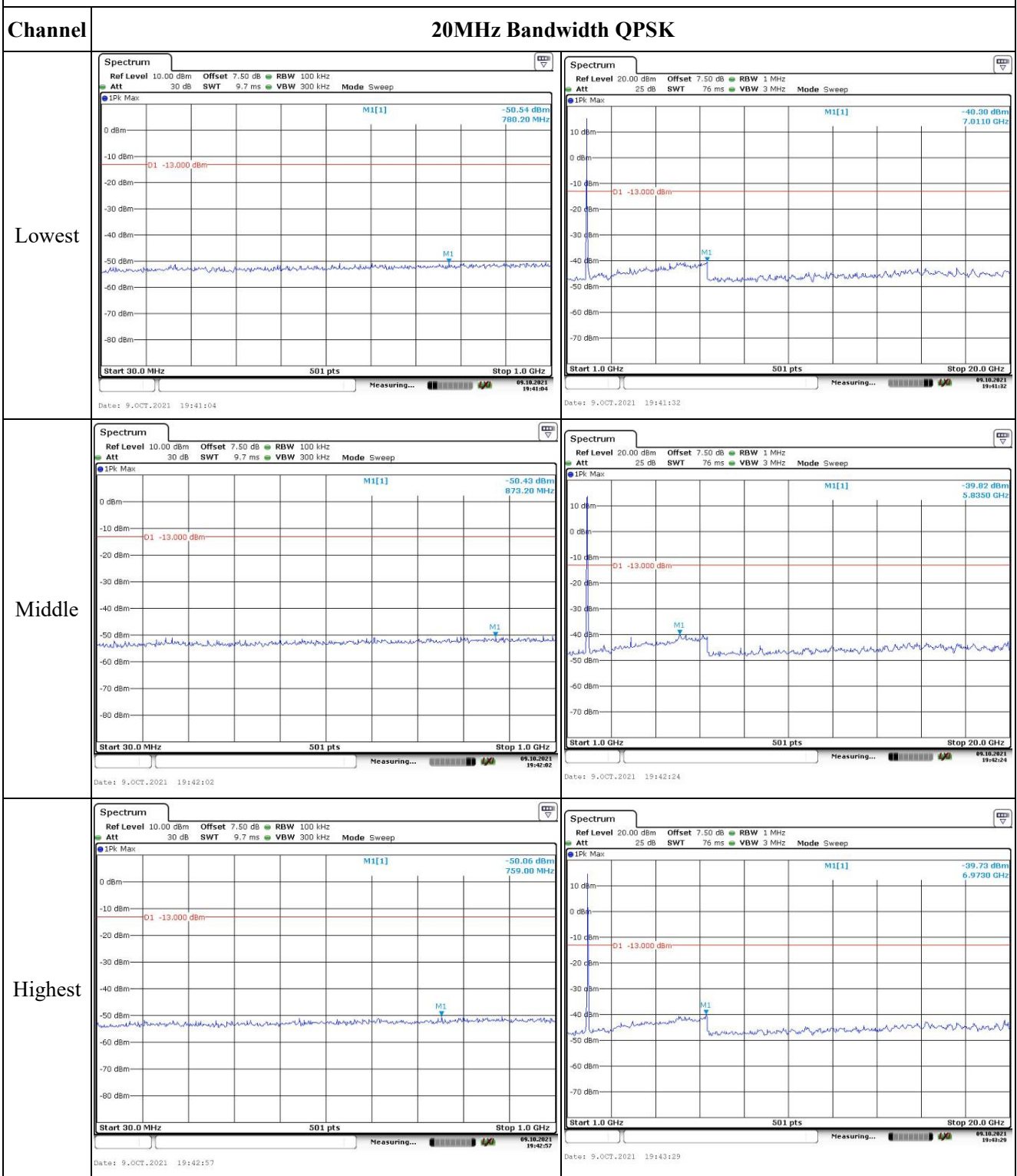
Spurious Emissions at Antenna Terminal



### Spurious Emissions at Antenna Terminal

Channel	15MHz Bandwidth QPSK	
Lowest	<p><b>Spectrum</b>                      Ref Level 10.00 dBm Offset 7.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep                      1Pk Max M1[1] -50.76 dBm 857.70 MHz                      -13.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 9.OCT.2021 19:38:00</p>	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 1 MHz                      Att 25 dB SWT 76 ms VBW 3 MHz Mode Sweep                      1Pk Max M1[1] -39.91 dBm 5.9490 GHz                      -13.000 dBm                      Start 1.0 GHz 501 pts Stop 20.0 GHz                      Date: 9.OCT.2021 19:38:22</p>
Middle	<p><b>Spectrum</b>                      Ref Level 10.00 dBm Offset 7.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep                      1Pk Max M1[1] -49.74 dBm 910.00 MHz                      -13.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 9.OCT.2021 19:38:58</p>	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 1 MHz                      Att 25 dB SWT 76 ms VBW 3 MHz Mode Sweep                      1Pk Max M1[1] -39.59 dBm 7.0110 GHz                      -13.000 dBm                      Start 1.0 GHz 501 pts Stop 20.0 GHz                      Date: 9.OCT.2021 19:39:24</p>
Highest	<p><b>Spectrum</b>                      Ref Level 10.00 dBm Offset 7.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Sweep                      1Pk Max M1[1] -50.26 dBm 931.30 MHz                      -13.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 9.OCT.2021 19:39:56</p>	<p><b>Spectrum</b>                      Ref Level 20.00 dBm Offset 7.50 dB RBW 1 MHz                      Att 25 dB SWT 76 ms VBW 3 MHz Mode Sweep                      1Pk Max M1[1] -39.80 dBm 5.8350 GHz                      -13.000 dBm                      Start 1.0 GHz 501 pts Stop 20.0 GHz                      Date: 9.OCT.2021 19:40:22</p>

### Spurious Emissions at Antenna Terminal



Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz	<p>Spectrum Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep 1Rm Max M1[1] -17.18 dBm 1.84996410 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 3.0 MHz Date: 9.OCT.2021 16:31:42</p>	<p>Spectrum Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep 1Rm Max M1[1] -17.19 dBm 1.91000000 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 3.0 MHz Date: 9.OCT.2021 16:32:27</p>
QPSK 3MHz	<p>Spectrum Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep 1Rm Max M1[1] -23.89 dBm 1.85000000 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 6.0 MHz Date: 9.OCT.2021 16:33:10</p>	<p>Spectrum Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep 1Rm Max M1[1] -21.61 dBm 1.91021600 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 6.0 MHz Date: 9.OCT.2021 16:33:57</p>
QPSK 5MHz	<p>Spectrum Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Rm Max M1[1] -16.10 dBm 1.85000000 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 10.0 MHz Date: 9.OCT.2021 16:34:50</p>	<p>Spectrum Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 5 ms VBW 300 kHz Mode Sweep 1Rm Max M1[1] -18.49 dBm 1.91000000 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 10.0 MHz Date: 9.OCT.2021 16:36:17</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 10MHz	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Fm Max M1[1] -22.62 dBm 1.850000 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 20.0 MHz Date: 9.OCT.2021 16:37:38</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Fm Max M1[1] -23.87 dBm 1.910040 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 20.0 MHz Date: 9.OCT.2021 16:38:40</p>
QPSK 15MHz	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Fm Max M1[1] -19.17 dBm 1.850000 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 30.0 MHz Date: 9.OCT.2021 16:39:46</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Fm Max M1[1] -17.61 dBm 1.910000 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 30.0 MHz Date: 9.OCT.2021 16:40:43</p>
QPSK 20MHz	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Fm Max M1[1] -23.82 dBm 1.850000 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 40.0 MHz Date: 9.OCT.2021 16:41:46</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Fm Max M1[1] -22.18 dBm 1.910000 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 40.0 MHz Date: 9.OCT.2021 16:42:46</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>M1[1] -18.59 dBm 1.84990420 GHz</p> <p>D1 -13.000 dBm</p> <p>CF 1.85 GHz 501 pts Span 3.0 MHz</p> <p>Date: 9.OCT.2021 16:32:03</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>M1[1] -18.55 dBm 1.91005990 GHz</p> <p>D1 -13.000 dBm</p> <p>CF 1.91 GHz 501 pts Span 3.0 MHz</p> <p>Date: 9.OCT.2021 16:32:44</p>
16QAM 3MHz	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>M1[1] -22.65 dBm 1.8500000 GHz</p> <p>D1 -13.000 dBm</p> <p>CF 1.85 GHz 501 pts Span 6.0 MHz</p> <p>Date: 9.OCT.2021 16:33:30</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>M1[1] -23.92 dBm 1.9105630 GHz</p> <p>D1 -13.000 dBm</p> <p>CF 1.91 GHz 501 pts Span 6.0 MHz</p> <p>Date: 9.OCT.2021 16:34:21</p>
16QAM 5MHz	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>M1[1] -16.95 dBm 1.8500000 GHz</p> <p>D1 -13.000 dBm</p> <p>CF 1.85 GHz 501 pts Span 10.0 MHz</p> <p>Date: 9.OCT.2021 16:35:22</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>M1[1] -17.51 dBm 1.9100000 GHz</p> <p>D1 -13.000 dBm</p> <p>CF 1.91 GHz 501 pts Span 10.0 MHz</p> <p>Date: 9.OCT.2021 16:36:53</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 10MHz	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep M1[1] -25.98 dBm 1.8499600 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 20.0 MHz Date: 9.OCT.2021 16:38:09</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep M1[1] -24.85 dBm 1.9104790 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 20.0 MHz Date: 9.OCT.2021 16:39:14</p>
16QAM 15MHz	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep M1[1] -15.95 dBm 1.8492810 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 30.0 MHz Date: 9.OCT.2021 16:40:16</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep M1[1] -21.04 dBm 1.9100000 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 30.0 MHz Date: 9.OCT.2021 16:41:10</p>
16QAM 20MHz	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep M1[1] -25.33 dBm 1.8500000 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 40.0 MHz Date: 9.OCT.2021 16:42:15</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep M1[1] -22.66 dBm 1.9100000 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 40.0 MHz Date: 9.OCT.2021 16:43:12</p>



**4.7 Antenna Port Test Data and Results for LTE Band 4:**

Serial Number:	CR21090086-RF-S1	Test Date:	2021/10/18
Test Site:	RF	Test Mode:	Transmitting
Tester:	Thor Lei	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	26.7	Relative Humidity: (%)	59	ATM Pressure: (kPa)	101.6
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**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 4▲:**

Antenna Gain (dBi):	1.5	Cable Loss (dB):	0.4
Operation Voltage(V <sub>dc</sub> ):			
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	1710.7	1732.5	1754.3
3MHz	1711.5	1732.5	1753.5
5MHz	1712.5	1732.5	1752.5
10MHz	1715	1732.5	1750
15MHz	1717.5	1732.5	1747.5
20MHz	1720	1732.5	1745

**Test Data:****FCC§2.1046;§ 27.50(d)(4)****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		
1.4MHz QPSK	RB1#0	25.12	25.13	25.09	26.36	30
	RB1#3	25.25	25.26	25.23		
	RB1#5	25.14	25.12	25.05		
	RB3#0	25.19	25.18	25.13		
	RB3#3	25.19	25.18	25.08		
	RB6#0	24.16	24.16	24.12		
1.4MHz 16QAM	RB1#0	24.05	24.21	24	25.44	30
	RB1#3	24.19	24.34	24.17		
	RB1#5	24.07	24.18	24.03		
	RB3#0	24.34	24.14	24.16		
	RB3#3	24.32	24.08	24.14		
	RB6#0	23.15	23.2	23.04		
3MHz QPSK	RB1#0	25.3	25.27	25.3	26.4	30
	RB1#8	25.24	25.27	24.74		
	RB1#14	25.3	25.26	24.73		
	RB6#0	24.23	24.25	23.68		
	RB6#9	24.23	24.23	23.64		
	RB15#0	24.27	24.24	23.71		
3MHz 16QAM	RB1#0	24.74	24.37	23.73	25.84	30
	RB1#8	24.69	24.38	23.7		
	RB1#14	24.72	24.38	23.69		
	RB6#0	23.3	23.24	22.65		
	RB6#9	23.29	23.27	22.62		
	RB15#0	23.37	23.2	22.79		
5MHz QPSK	RB1#0	24.65	24.68	24.66	25.88	30
	RB1#13	24.76	24.78	24.75		

	RB1#24	24.68	24.7	24.64		
	RB15#0	23.79	23.77	23.76		
	RB15#10	23.78	23.73	23.74		
	RB25#0	23.69	23.69	23.7		
5MHz 16QAM	RB1#0	23.54	23.94	23.68	25.1	30
	RB1#13	23.6	24	23.76		
	RB1#24	23.51	23.92	23.7		
	RB15#0	22.84	22.75	22.79		
	RB15#10	22.87	22.77	22.78		
	RB25#0	22.81	22.74	22.78		
10MHz QPSK	RB1#0	24.77	24.74	24.74	26.12	30
	RB1#25	25.02	24.95	25.01		
	RB1#49	24.75	24.74	24.72		
	RB25#0	23.77	23.82	23.74		
	RB25#25	23.84	23.82	23.76		
	RB50#0	23.83	23.79	23.76		
10MHz 16QAM	RB1#0	24.21	23.83	23.68	25.51	30
	RB1#25	24.41	24.09	23.85		
	RB1#49	24.21	23.85	23.64		
	RB25#0	22.86	22.84	22.84		
	RB25#25	22.9	22.87	22.85		
	RB50#0	22.87	22.85	22.84		
15MHz QPSK	RB1#0	24.64	24.69	24.69	25.94	30
	RB1#38	24.84	24.81	24.83		
	RB1#74	24.69	24.67	24.66		
	RB36#0	23.88	23.89	23.9		
	RB36#39	23.95	23.92	23.89		
	RB75#0	23.87	23.9	23.9		
15MHz 16QAM	RB1#0	24.1	23.75	23.93	25.37	30
	RB1#38	24.27	23.93	24.08		
	RB1#74	24.16	23.76	23.96		
	RB36#0	22.79	22.84	22.83		
	RB36#39	22.85	22.87	22.83		
	RB75#0	22.89	22.88	22.83		
20MHz QPSK	RB1#0	24.5	24.52	24.51	26.1	30
	RB1#50	24.94	24.96	25		
	RB1#99	24.56	24.53	24.54		
	RB50#0	23.72	23.75	23.73		
	RB50#50	23.78	23.74	23.67		
	RB100#0	23.75	23.77	23.74		
20MHz 16QAM	RB1#0	23.78	23.79	23.63	25.33	30
	RB1#50	24.23	24.23	24.04		
	RB1#99	23.81	23.77	23.65		
	RB50#0	22.77	22.8	22.76		
	RB50#50	22.82	22.75	22.72		
	RB100#0	22.83	22.81	22.77		
					<b>Result:</b>	<b>Pass</b>

<b>Peak-to-average Ratio(PAR)</b>					
Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	3.42	4.06	3.04	13
	RB100#0	4.43	4.93	4.29	13
20MHz 16QAM	RB1#0	4.49	5.01	4.12	13
	RB100#0	5.39	5.94	5.19	13
<b>Result:</b>					<b>Pass</b>

<b>FCC §2.1049, §27.53:Occupied Bandwidth</b>						
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	1.102	1.096	1.102	1.314	1.32	1.296
1.4MHz 16QAM	1.108	1.096	1.096	1.32	1.284	1.29
3MHz QPSK	2.695	2.695	2.683	2.892	2.868	2.892
3MHz 16QAM	2.683	2.683	2.683	2.892	2.892	2.88
5MHz QPSK	4.511	4.511	4.491	4.96	4.94	4.94
5MHz 16QAM	4.491	4.531	4.531	4.96	4.96	4.98
10MHz QPSK	8.942	8.942	8.942	9.76	9.6	9.6
10MHz 16QAM	8.942	8.942	8.942	9.72	9.6	9.6
15MHz QPSK	13.473	13.473	13.533	14.82	14.76	14.88
15MHz 16QAM	13.473	13.473	13.533	14.7	14.76	15.72
20MHz QPSK	17.964	17.964	18.044	19.28	19.28	19.52
20MHz 16QAM	17.964	17.964	17.964	19.36	19.36	19.36

Note: The test plots please refer to the Plots of Occupied Bandwidth

<b>FCC §2.1051, § 27.53:Spurious Emissions at Antenna Terminal</b>	
<b>Result:</b>	<b>Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.</b>

<b>FCC §2.1051, § 27.53:Out of band emission, Band Edge</b>	
<b>Result:</b>	<b>Pass, Please refer to the test plots of Out of band emission, Band Edge.</b>

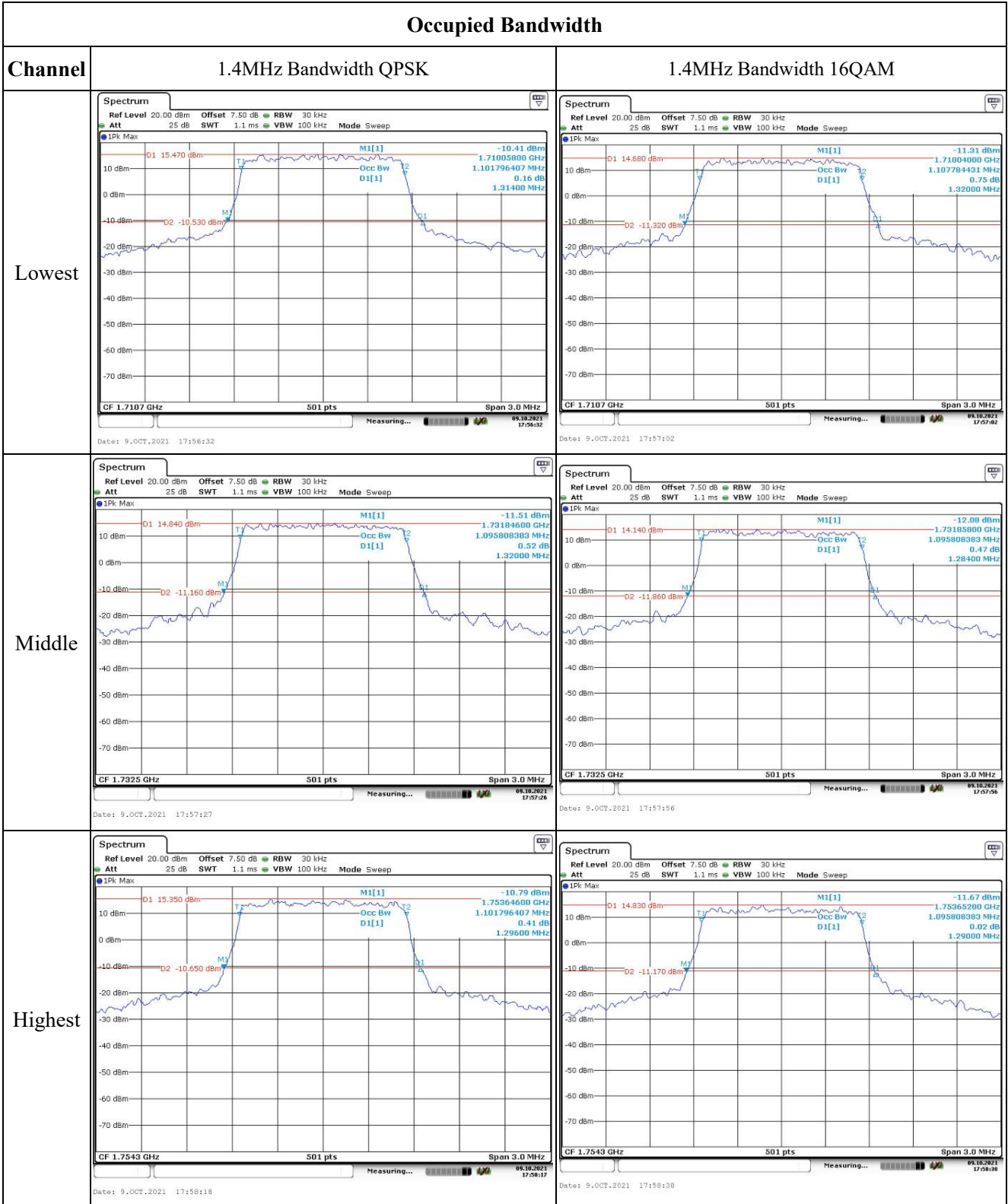
**FCC §2.1055, §27.54: Frequency Stability**

Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1710.5282	1710.00	1754.4718	1755
	-20	3.8	1710.5285	1710.00	1754.4714	1755
	-10	3.8	1710.5287	1710.00	1754.4712	1755
	0	3.8	1710.5281	1710.00	1754.4715	1755
	10	3.8	1710.5286	1710.00	1754.4716	1755
	20	3.8	1710.5289	1710.00	1754.4711	1755
	30	3.8	1710.5283	1710.00	1754.4712	1755
	40	3.8	1710.5287	1710.00	1754.4717	1755
	50	3.8	1710.5285	1710.00	1754.4712	1755
Frequency Stability vs. Voltage	20	3.6	1710.5286	1710.00	1754.4717	1755
	20	4.3	1710.5284	1710.00	1754.4714	1755
					<b>Result:</b>	<b>Pass</b>

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1710.5284	1710.00	1754.4717	1755
	-20	3.8	1710.5285	1710.00	1754.4715	1755
	-10	3.8	1710.5284	1710.00	1754.4716	1755
	0	3.8	1710.5285	1710.00	1754.4717	1755
	10	3.8	1710.5287	1710.00	1754.4715	1755
	20	3.8	1710.5289	1710.00	1754.4711	1755
	30	3.8	1710.5285	1710.00	1754.4714	1755
	40	3.8	1710.5286	1710.00	1754.4717	1755
	50	3.8	1710.5287	1710.00	1754.4712	1755
Frequency Stability vs. Voltage	20	3.6	1710.5282	1710.00	1754.4713	1755
	20	4.3	1710.5283	1710.00	1754.4716	1755
					<b>Result:</b>	<b>Pass</b>

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 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max D1 15.050 dBm M1[1] -11.57 dBm 1.7100200 GHz Occ Bw 4.510978044 MHz D1[1] 1.09 dB 4.9600 MHz D2 -10.950 dBm CF 1.7125 GHz 501 pts Span 10.0 MHz Date: 9.OCT.2021 18:01:39</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max D1 14.310 dBm M1[1] -11.58 dBm 1.7100200 GHz Occ Bw 4.491017964 MHz D1[1] -0.14 dB 4.9600 MHz D2 -11.690 dBm CF 1.7125 GHz 501 pts Span 10.0 MHz Date: 9.OCT.2021 18:02:06</p>
Middle	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max D1 14.320 dBm M1[1] -11.08 dBm 1.7300400 GHz Occ Bw 4.510978044 MHz D1[1] -0.45 dB 4.9400 MHz D2 -11.680 dBm CF 1.7325 GHz 501 pts Span 10.0 MHz Date: 9.OCT.2021 18:02:33</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max D1 14.020 dBm M1[1] -11.93 dBm 1.7300200 GHz Occ Bw 4.530938124 MHz D1[1] 0.38 dB 4.9600 MHz D2 -11.980 dBm CF 1.7325 GHz 501 pts Span 10.0 MHz Date: 9.OCT.2021 18:03:00</p>
Highest	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max D1 15.170 dBm M1[1] -11.02 dBm 1.7500400 GHz Occ Bw 4.491017964 MHz D1[1] -0.45 dB 4.9400 MHz D2 -10.830 dBm CF 1.7525 GHz 501 pts Span 10.0 MHz Date: 9.OCT.2021 18:03:22</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Pk Max D1 13.460 dBm M1[1] -12.77 dBm 1.7500200 GHz Occ Bw 4.530938124 MHz D1[1] -0.27 dB 4.9800 MHz D2 -12.540 dBm CF 1.7525 GHz 501 pts Span 10.0 MHz Date: 9.OCT.2021 18:03:51</p>