

### Spurious Emissions at Antenna Terminal

| Channel | 15MHz Bandwidth QPSK  |   |
|---------|---|---|
| Lowest  | <p>Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz<br/>Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.74 dBm 226.50 MHz</p> <p>D1 -13.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 17:01:19</p> | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz<br/>Att 30 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max M1[1] -31.09 dBm 16.9470 GHz</p> <p>D1 -13.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 20.0 GHz</p> <p>Date: 14.AUG.2023 17:01:44</p> |
|         | <p>Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz<br/>Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.70 dBm 199.40 MHz</p> <p>D1 -13.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 17:02:18</p> | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz<br/>Att 30 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max M1[1] -30.47 dBm 18.3120 GHz</p> <p>D1 -13.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 20.0 GHz</p> <p>Date: 14.AUG.2023 17:02:44</p> |
| Highest | <p>Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz<br/>Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.09 dBm 997.10 MHz</p> <p>D1 -13.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 17:03:24</p> | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz<br/>Att 30 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max M1[1] -30.74 dBm 17.4020 GHz</p> <p>D1 -13.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 20.0 GHz</p> <p>Date: 14.AUG.2023 17:03:47</p> |

### Spurious Emissions at Antenna Terminal

| Channel | 20MHz Bandwidth QPSK  |   |
|---------|---|---|
| Lowest  | <p>Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz<br/>Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.00 dBm 859.60 MHz</p> <p>D1 -13.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 17:04:29</p> | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz<br/>Att 30 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max M1[1] -31.21 dBm 18.3500 GHz</p> <p>D1 -13.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 20.0 GHz</p> <p>Date: 14.AUG.2023 17:04:48</p>     |
|         | Middle  | <p>Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz<br/>Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.95 dBm 977.70 MHz</p> <p>D1 -13.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 17:05:22</p> |
| Highest |   | <p>Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz<br/>Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.60 dBm 654.40 MHz</p> <p>D1 -13.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 17:06:23</p> |

Out of band emission, Band Edge

| Mode           | Lowest  | Highest  |
|----------------|---|--|
| QPSK<br>1.4MHz | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 30 kHz<br/>Att 30 dB SWT 35 ms VBW 100 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -38.13 dBm<br/>1.70999400 GHz<br/>-13.000 dBm<br/>CF 1.71 GHz 501 pts Span 3.0 MHz<br/>Date: 29.AUG.2023 09:15:15</p>  | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 30 kHz<br/>Att 30 dB SWT 35 ms VBW 100 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -35.37 dBm<br/>1.75500600 GHz<br/>-13.000 dBm<br/>CF 1.755 GHz 501 pts Span 3.0 MHz<br/>Date: 29.AUG.2023 09:15:18</p>  |
| QPSK<br>3MHz   | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 30 kHz<br/>Att 30 dB SWT 35 ms VBW 100 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -35.84 dBm<br/>1.7100000 GHz<br/>-13.000 dBm<br/>CF 1.71 GHz 501 pts Span 6.0 MHz<br/>Date: 29.AUG.2023 09:15:25</p>   | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 30 kHz<br/>Att 30 dB SWT 35 ms VBW 100 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -31.07 dBm<br/>1.7550000 GHz<br/>-13.000 dBm<br/>CF 1.755 GHz 501 pts Span 6.0 MHz<br/>Date: 29.AUG.2023 09:15:37</p>   |
| QPSK<br>5MHz   | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz<br/>Att 30 dB SWT 35 ms VBW 300 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -34.75 dBm<br/>1.7100000 GHz<br/>-13.000 dBm<br/>CF 1.71 GHz 501 pts Span 10.0 MHz<br/>Date: 29.AUG.2023 09:15:54</p> | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz<br/>Att 30 dB SWT 35 ms VBW 300 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -32.78 dBm<br/>1.7550000 GHz<br/>-13.000 dBm<br/>CF 1.755 GHz 501 pts Span 10.0 MHz<br/>Date: 29.AUG.2023 09:15:07</p> |

Out of band emission, Band Edge

| Mode          | Lowest | Highest |
|---------------|--------|---------|
| QPSK<br>10MHz |        |         |
| QPSK<br>15MHz |        |         |
| QPSK<br>20MHz |        |         |

Out of band emission, Band Edge

| Mode            | Lowest  | Highest  |
|-----------------|---|--|
| 16QAM<br>1.4MHz | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 30 kHz<br/>Att 30 dB SWT 35 ms VBW 100 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -37.87 dBm<br/>1.70999400 GHz<br/>-13.000 dBm<br/>CF 1.71 GHz 501 pts Span 3.0 MHz<br/>Date: 29.AUG.2023 09:15:10</p>  | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 30 kHz<br/>Att 30 dB SWT 35 ms VBW 100 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -34.51 dBm<br/>1.7550000 GHz<br/>-13.000 dBm<br/>CF 1.755 GHz 501 pts Span 3.0 MHz<br/>Date: 29.AUG.2023 09:15:14</p>   |
| 16QAM<br>3MHz   | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 30 kHz<br/>Att 30 dB SWT 35 ms VBW 100 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -39.50 dBm<br/>1.7100000 GHz<br/>-13.000 dBm<br/>CF 1.71 GHz 501 pts Span 6.0 MHz<br/>Date: 29.AUG.2023 09:15:31</p>   | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 30 kHz<br/>Att 30 dB SWT 35 ms VBW 100 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -32.35 dBm<br/>1.7550000 GHz<br/>-13.000 dBm<br/>CF 1.755 GHz 501 pts Span 6.0 MHz<br/>Date: 29.AUG.2023 09:15:13</p>   |
| 16QAM<br>5MHz   | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz<br/>Att 30 dB SWT 35 ms VBW 300 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -34.97 dBm<br/>1.7100000 GHz<br/>-13.000 dBm<br/>CF 1.71 GHz 501 pts Span 10.0 MHz<br/>Date: 29.AUG.2023 09:15:00</p> | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz<br/>Att 30 dB SWT 35 ms VBW 300 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -32.78 dBm<br/>1.7550000 GHz<br/>-13.000 dBm<br/>CF 1.755 GHz 501 pts Span 10.0 MHz<br/>Date: 29.AUG.2023 09:15:12</p> |

Out of band emission, Band Edge

| Mode           | Lowest  | Highest  |
|----------------|---|--|
| 16QAM<br>10MHz | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz<br/>Att 30 dB SWT 35 ms VBW 300 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -40.69 dBm<br/>1.7100000 GHz<br/>-13.000 dBm<br/>CF 1.71 GHz 501 pts Span 20.0 MHz<br/>Date: 29.AUG.2023 09:15:13</p> | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz<br/>Att 30 dB SWT 35 ms VBW 300 kHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -30.04 dBm<br/>1.7550000 GHz<br/>-13.000 dBm<br/>CF 1.755 GHz 501 pts Span 20.0 MHz<br/>Date: 29.AUG.2023 09:15:14</p> |
| 16QAM<br>15MHz | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz<br/>Att 30 dB SWT 35 ms VBW 1 MHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -37.17 dBm<br/>1.7100000 GHz<br/>-13.000 dBm<br/>CF 1.71 GHz 501 pts Span 30.0 MHz<br/>Date: 29.AUG.2023 09:15:14</p>   | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz<br/>Att 30 dB SWT 35 ms VBW 1 MHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -34.90 dBm<br/>1.7550000 GHz<br/>-13.000 dBm<br/>CF 1.755 GHz 501 pts Span 30.0 MHz<br/>Date: 29.AUG.2023 09:15:20</p>   |
| 16QAM<br>20MHz | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz<br/>Att 30 dB SWT 35 ms VBW 1 MHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -38.66 dBm<br/>1.7100000 GHz<br/>-13.000 dBm<br/>CF 1.71 GHz 501 pts Span 40.0 MHz<br/>Date: 29.AUG.2023 09:15:38</p>   | <p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz<br/>Att 30 dB SWT 35 ms VBW 1 MHz Mode Auto Sweep<br/>SGL Count 50/50<br/>IRm AvgPwr<br/>MI[1] -36.18 dBm<br/>1.7550000 GHz<br/>-13.000 dBm<br/>CF 1.755 GHz 501 pts Span 40.0 MHz<br/>Date: 29.AUG.2023 09:15:54</p>   |

**4.8 Antenna Port Test Data and Results for LTE Band 5**

|                |           |              |                     |
|----------------|-----------|--------------|---------------------|
| Serial Number: | 2A4I-1    | Test Date:   | 2023/8/13-2023/8/14 |
| Test Site:     | RF        | Test Mode:   | Transmitting        |
| Tester:        | Panda Sun | Test Result: | Pass                |

**Environmental Conditions:**

|                      |           |                           |       |                        |     |
|----------------------|-----------|---------------------------|-------|------------------------|-----|
| Temperature:<br>(°C) | 25.3~25.6 | Relative Humidity:<br>(%) | 64-68 | ATM Pressure:<br>(kPa) | 101 |
|----------------------|-----------|---------------------------|-------|------------------------|-----|

**Test Equipment List and Details:**

| Manufacturer | Description                         | Model         | Serial Number   | Calibration Date | Calibration Due Date |
|--------------|-------------------------------------|---------------|-----------------|------------------|----------------------|
| R&S          | Spectrum Analyzer                   | FSV40-N       | 102259          | 2023/4/18        | 2024/4/17            |
| R&S          | Wideband Radio Communication Tester | CMW500        | 143458          | 2023/3/31        | 2024/3/30            |
| zhuoxiang    | Coaxial Cable                       | SMA-178       | 211001          | Each time        | N/A                  |
| YINSAIGE     | Coaxial Cable                       | SS402         | SJ0100001       | Each time        | N/A                  |
| BACL         | TEMP&HUMI Test Chamber              | BTH-150-40    | 30174           | 2023/3/31        | 2024/3/30            |
| UNI-T        | Multimeter                          | UT39A+        | C210582554      | 2022/9/29        | 2023/9/28            |
| ZHAOXIN      | DC Power Supply                     | RXN-6010D     | 21R6010D0912386 | N/A              | N/A                  |
| eastsheep    | Coaxial Attenuator                  | 2W-SMA-JK-18G | 21060301        | 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).

**Test Frequency for Each Mode:**

| Operation Bandwidth | Lowest Frequency (MHz) | Middle Frequency (MHz) | Highest Frequency (MHz) |
|---------------------|------------------------|------------------------|-------------------------|
| 1.4MHz              | 824.7                  | 836.5                  | 848.3                   |
| 3MHz                | 825.5                  | 836.5                  | 847.5                   |
| 5MHz                | 826.5                  | 836.5                  | 846.5                   |
| 10MHz               | 829                    | 836.5                  | 844                     |

**Test Data:****FCC§2.1046;§ 22.913 (a)****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                      | 22.59                               | 22.9           | 22.57           | 16.07             | 38.45           |
|                             | RB1#3                      | 22.6                                | 22.93          | 22.76           |                   |                 |
|                             | RB1#5                      | 22.59                               | 22.93          | 22.74           |                   |                 |
|                             | RB3#0                      | 23.03                               | 23.22          | 22.79           |                   |                 |
|                             | RB3#3                      | 23.04                               | 23.19          | 23.03           |                   |                 |
|                             | RB6#0                      | 21.87                               | 22.24          | 22.04           |                   |                 |
| 1.4MHz 16QAM                | RB1#0                      | 21.27                               | 22.4           | 22.31           | 15.45             | 38.45           |
|                             | RB1#3                      | 21.32                               | 22.48          | 22.6            |                   |                 |
|                             | RB1#5                      | 21.29                               | 22.48          | 22.56           |                   |                 |
|                             | RB3#0                      | 21.96                               | 22.41          | 21.52           |                   |                 |
|                             | RB3#3                      | 21.93                               | 22.4           | 21.76           |                   |                 |
|                             | RB6#0                      | 21.1                                | 21.39          | 21.06           |                   |                 |
| 3MHz QPSK                   | RB1#0                      | 22.77                               | 22.9           | 22.42           | 15.83             | 38.45           |
|                             | RB1#8                      | 22.78                               | 22.98          | 22.43           |                   |                 |
|                             | RB1#14                     | 22.75                               | 22.95          | 22.65           |                   |                 |
|                             | RB6#0                      | 21.9                                | 22.27          | 21.61           |                   |                 |
|                             | RB6#9                      | 21.91                               | 22.21          | 21.97           |                   |                 |
|                             | RB15#0                     | 21.94                               | 22.27          | 21.72           |                   |                 |
| 3MHz 16QAM                  | RB1#0                      | 21.72                               | 21.61          | 21.7            | 14.91             | 38.45           |
|                             | RB1#8                      | 21.59                               | 21.59          | 21.73           |                   |                 |
|                             | RB1#14                     | 21.61                               | 21.63          | 22.06           |                   |                 |
|                             | RB6#0                      | 21.1                                | 21.41          | 21.14           |                   |                 |
|                             | RB6#9                      | 21.05                               | 21.48          | 20.94           |                   |                 |
|                             | RB15#0                     | 20.98                               | 21.28          | 21.2            |                   |                 |
| 5MHz QPSK                   | RB1#0                      | 22.76                               | 22.93          | 22.6            | 15.78             | 38.45           |
|                             | RB1#13                     | 22.64                               | 22.85          | 22.48           |                   |                 |
|                             | RB1#24                     | 22.65                               | 22.76          | 22.6            |                   |                 |
|                             | RB15#0                     | 21.92                               | 22.24          | 21.82           |                   |                 |
|                             | RB15#10                    | 21.78                               | 22.15          | 21.69           |                   |                 |
|                             | RB25#0                     | 21.87                               | 22.14          | 21.7            |                   |                 |
| 5MHz 16QAM                  | RB1#0                      | 21.57                               | 21.54          | 20.65           | 14.45             | 38.45           |
|                             | RB1#13                     | 21.52                               | 21.6           | 20.46           |                   |                 |
|                             | RB1#24                     | 21.55                               | 21.6           | 20.81           |                   |                 |
|                             | RB15#0                     | 20.72                               | 21.2           | 20.94           |                   |                 |
|                             | RB15#10                    | 20.68                               | 21.25          | 21.21           |                   |                 |
|                             | RB25#0                     | 20.76                               | 21.13          | 21.23           |                   |                 |
| 10MHz QPSK                  | RB1#0                      | 22.72                               | 22.65          | 22.87           | 15.80             | 38.45           |



|             |         |       |       |       |       |       |
|-------------|---------|-------|-------|-------|-------|-------|
|             | RB1#25  | 22.57 | 22.95 | 22.56 |       |       |
|             | RB1#49  | 22.75 | 22.76 | 22.57 |       |       |
|             | RB25#0  | 21.97 | 22.17 | 22.11 |       |       |
|             | RB25#25 | 21.95 | 22.21 | 21.69 |       |       |
|             | RB50#0  | 21.82 | 22.2  | 21.95 |       |       |
| 10MHz 16QAM | RB1#0   | 22.39 | 21.14 | 22.06 | 15.29 | 38.45 |
|             | RB1#25  | 22.31 | 21.45 | 21.92 |       |       |
|             | RB1#49  | 22.44 | 21.29 | 21.85 |       |       |
|             | RB25#0  | 20.88 | 21.41 | 21.12 |       |       |
|             | RB25#25 | 20.95 | 21.31 | 21.21 |       |       |
|             | RB50#0  | 21.37 | 21.24 | 21.13 |       |       |

Note: ERP= Conducted Power(dBm) - Lc(dB) + G<sub>T</sub>(dBd)G<sub>r</sub>(dBd)=G<sub>T</sub>(dBi)-2.15

**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                      | 4.84                      | 5.07           | 5.19            | 13          |
|                             | RB50#0                     | 5.19                      | 5.25           | 5.28            | 13          |
| 10MHz 16QAM                 | RB1#0                      | 5.77                      | 5.91           | 6.17            | 13          |
|                             | RB50#0                     | 6.03                      | 6.17           | 6.14            | 13          |
|                             |                            |                           |                | <b>Result:</b>  | <b>Pass</b> |

### FCC §2.1049, §22.905: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    | 1.102                        | 1.096          | 1.096        | 1.254                          | 1.248          | 1.254        |
| 1.4MHz 16QAM   | 1.102                        | 1.102          | 1.090        | 1.254                          | 1.260          | 1.248        |
| 3MHz QPSK      | 2.695                        | 2.683          | 2.695        | 3.012                          | 3.012          | 2.988        |
| 3MHz 16QAM     | 2.683                        | 2.695          | 2.695        | 3.000                          | 3.012          | 3.000        |
| 5MHz QPSK      | 4.511                        | 4.511          | 4.531        | 5.000                          | 5.000          | 5.000        |
| 5MHz 16QAM     | 4.531                        | 4.531          | 4.491        | 5.020                          | 5.020          | 4.980        |
| 10MHz QPSK     | 8.942                        | 8.942          | 8.982        | 9.760                          | 9.800          | 9.800        |
| 10MHz 16QAM    | 8.942                        | 8.942          | 8.942        | 9.800                          | 9.840          | 9.720        |

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

### FCC §2.1051, §22.917(a):Spurious Emissions at Antenna Terminal

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

**FCC §2.1051, §22.917(a): Out of band emission, Band Edge**

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

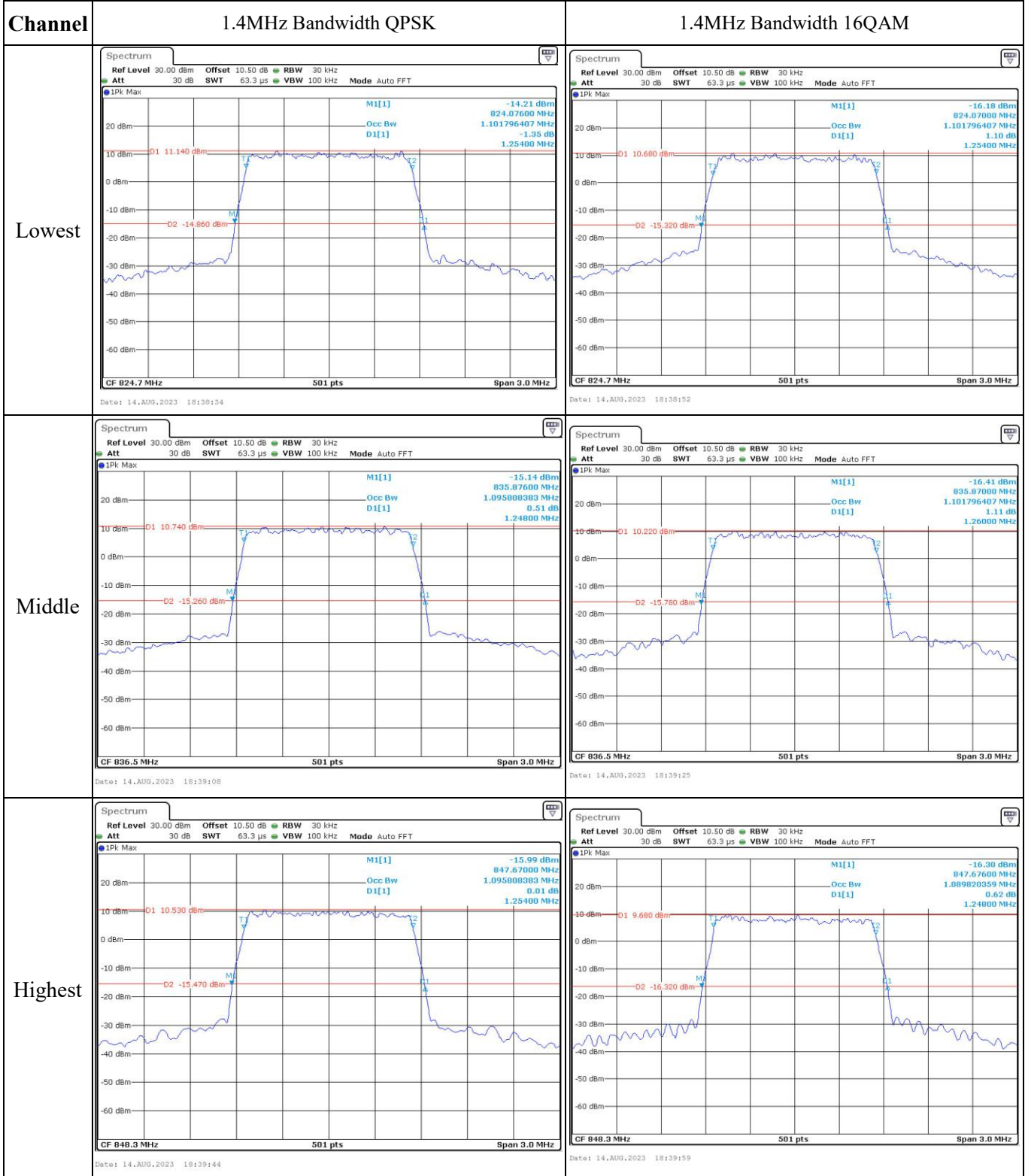
**FCC §2.1055, §22.355: Frequency Stability**

| Test Modulation:                    | 10 MHz QPSK      |                            | Test Channel:   | 836.5  | MHz         |
|-------------------------------------|------------------|----------------------------|-----------------|--------|-------------|
| Test Item                           | Temperature (°C) | Voltage (V <sub>DC</sub> ) | Frequency Error |        | Limit       |
|                                     |                  |                            | (Hz)            | (ppm)  | (ppm)       |
| Frequency Stability vs. Temperature | -30              | 3.85                       | 5.94            | 0.007  | 2.5         |
|                                     | -20              | 3.85                       | -8.96           | -0.011 | 2.5         |
|                                     | -10              | 3.85                       | 8.3             | 0.010  | 2.5         |
|                                     | 0                | 3.85                       | -5.24           | -0.006 | 2.5         |
|                                     | 10               | 3.85                       | -8.93           | -0.011 | 2.5         |
|                                     | 20               | 3.85                       | 6.28            | 0.008  | 2.5         |
|                                     | 30               | 3.85                       | 9.29            | 0.011  | 2.5         |
|                                     | 40               | 3.85                       | -9.43           | -0.011 | 2.5         |
| Frequency Stability vs. Voltage     | 50               | 3.85                       | 8.09            | 0.010  | 2.5         |
|                                     | 20               | 3.35                       | 5.2             | 0.006  | 2.5         |
| Frequency Stability vs. Voltage     | 20               | 4.4                        | 8.96            | 0.011  | 2.5         |
|                                     | <b>Result:</b>   |                            |                 |        | <b>Pass</b> |

| Test Modulation:                    | 10 MHz 16QAM     |                            | Test Channel:   | 836.5  | MHz         |
|-------------------------------------|------------------|----------------------------|-----------------|--------|-------------|
| Test Item                           | Temperature (°C) | Voltage (V <sub>DC</sub> ) | Frequency Error |        | Limit       |
|                                     |                  |                            | (Hz)            | (ppm)  | (ppm)       |
| Frequency Stability vs. Temperature | -30              | 3.85                       | -16.92          | -0.020 | 2.5         |
|                                     | -20              | 3.85                       | 6.6             | 0.008  | 2.5         |
|                                     | -10              | 3.85                       | 6.2             | 0.007  | 2.5         |
|                                     | 0                | 3.85                       | 7.97            | 0.010  | 2.5         |
|                                     | 10               | 3.85                       | -5.46           | -0.007 | 2.5         |
|                                     | 20               | 3.85                       | 9.38            | 0.011  | 2.5         |
|                                     | 30               | 3.85                       | -7.67           | -0.009 | 2.5         |
|                                     | 40               | 3.85                       | 6.44            | 0.008  | 2.5         |
| Frequency Stability vs. Voltage     | 50               | 3.85                       | 10.89           | 0.013  | 2.5         |
|                                     | 20               | 3.35                       | 9.74            | 0.012  | 2.5         |
| Frequency Stability vs. Voltage     | 20               | 4.4                        | 4.51            | 0.005  | 2.5         |
|                                     | <b>Result:</b>   |                            |                 |        | <b>Pass</b> |

**Test Plots**(Note: The 10.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

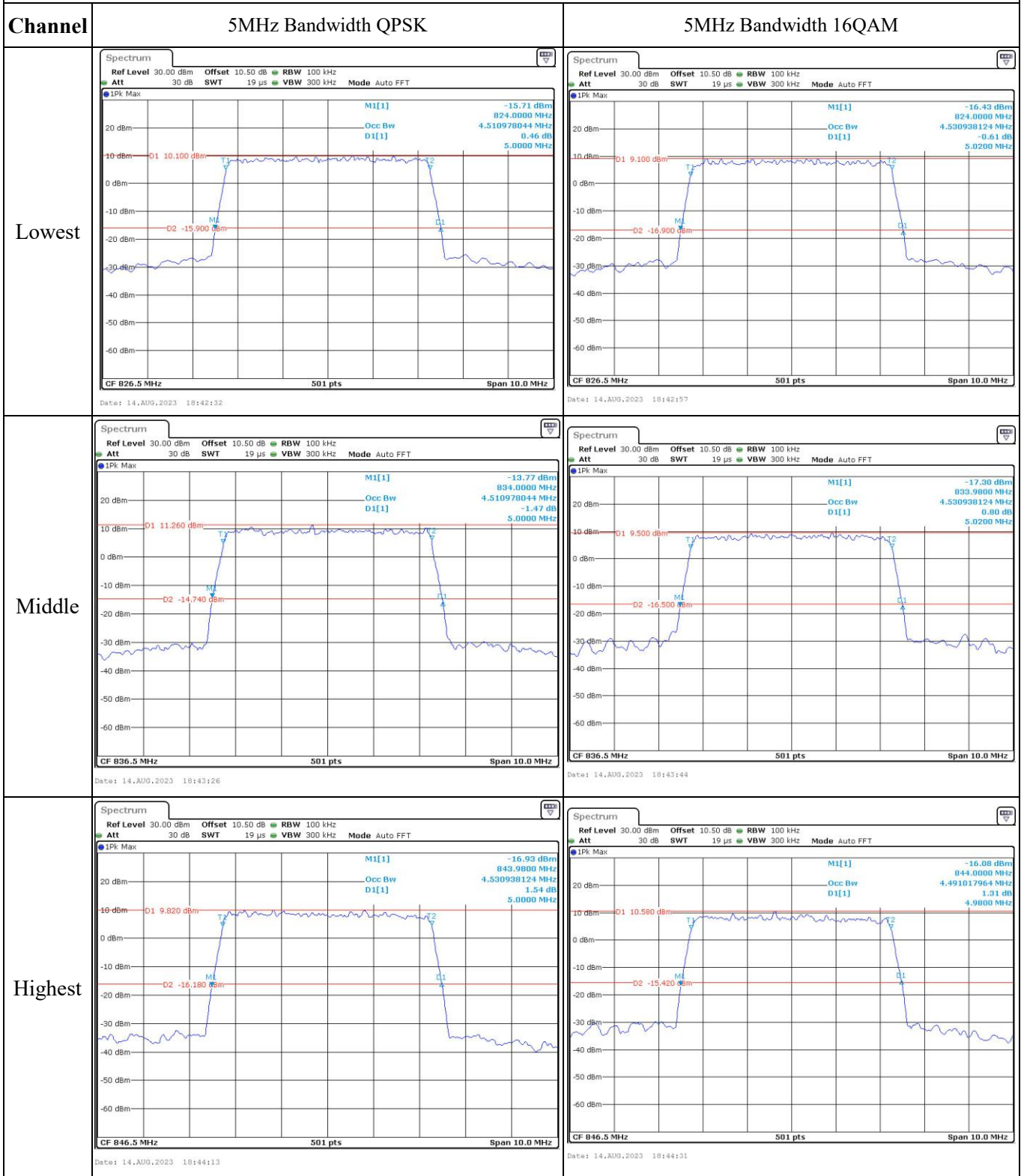
**Occupied Bandwidth**



### Occupied Bandwidth

| Channel | 3MHz Bandwidth QPSK   | 3MHz Bandwidth 16QAM   |
|---------|---|--|
| Lowest  | <p>Ref Level 30.00 dBm Offset 10.50 dB RBW 30 kHz<br/>Att 30 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -17.91 dBm<br/>824.0000 MHz<br/>Occ Bw 2.694610778 MHz<br/>D1[1] -0.53 dB<br/>3.0120 MHz</p> <p>CF 825.5 MHz 501 pts Span 6.0 MHz<br/>Date: 14.AUG.2023 18:40:22</p> | <p>Ref Level 30.00 dBm Offset 10.50 dB RBW 30 kHz<br/>Att 30 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -19.03 dBm<br/>824.0000 MHz<br/>Occ Bw 2.682634731 MHz<br/>D1[1] 0.21 dB<br/>3.0000 MHz</p> <p>CF 825.5 MHz 501 pts Span 6.0 MHz<br/>Date: 14.AUG.2023 18:40:40</p> |
| Middle  | <p>Ref Level 30.00 dBm Offset 10.50 dB RBW 30 kHz<br/>Att 30 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -18.44 dBm<br/>835.0000 MHz<br/>Occ Bw 2.682634731 MHz<br/>D1[1] -0.57 dB<br/>3.0120 MHz</p> <p>CF 836.5 MHz 501 pts Span 6.0 MHz<br/>Date: 14.AUG.2023 18:41:02</p> | <p>Ref Level 30.00 dBm Offset 10.50 dB RBW 30 kHz<br/>Att 30 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -18.25 dBm<br/>834.9880 MHz<br/>Occ Bw 2.694610778 MHz<br/>D1[1] 0.37 dB<br/>3.0120 MHz</p> <p>CF 836.5 MHz 501 pts Span 6.0 MHz<br/>Date: 14.AUG.2023 18:41:20</p> |
| Highest | <p>Ref Level 30.00 dBm Offset 10.50 dB RBW 30 kHz<br/>Att 30 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -17.50 dBm<br/>846.0000 MHz<br/>Occ Bw 2.694610778 MHz<br/>D1[1] -0.74 dB<br/>2.9880 MHz</p> <p>CF 847.5 MHz 501 pts Span 6.0 MHz<br/>Date: 14.AUG.2023 18:41:48</p> | <p>Ref Level 30.00 dBm Offset 10.50 dB RBW 30 kHz<br/>Att 30 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -18.58 dBm<br/>846.0000 MHz<br/>Occ Bw 2.682634731 MHz<br/>D1[1] 0.12 dB<br/>3.0000 MHz</p> <p>CF 847.5 MHz 501 pts Span 6.0 MHz<br/>Date: 14.AUG.2023 18:42:06</p> |

### Occupied Bandwidth



### Occupied Bandwidth

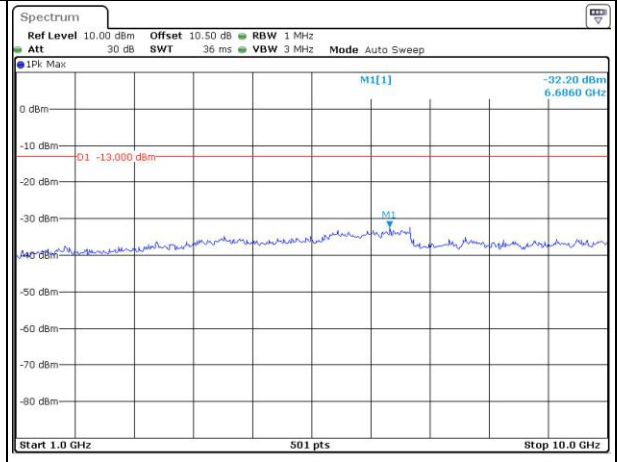
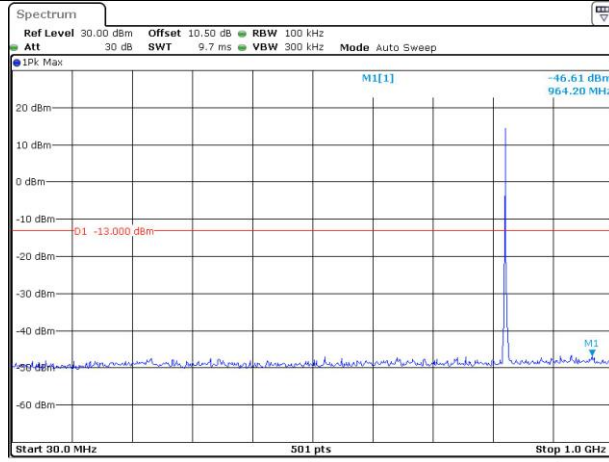
| Channel | 10MHz Bandwidth QPSK | 10MHz Bandwidth 16QAM |
|---------|----------------------|-----------------------|
| Lowest  |                      |                       |
| Middle  |                      |                       |
| Highest |                      |                       |

### Spurious Emissions at Antenna Terminal

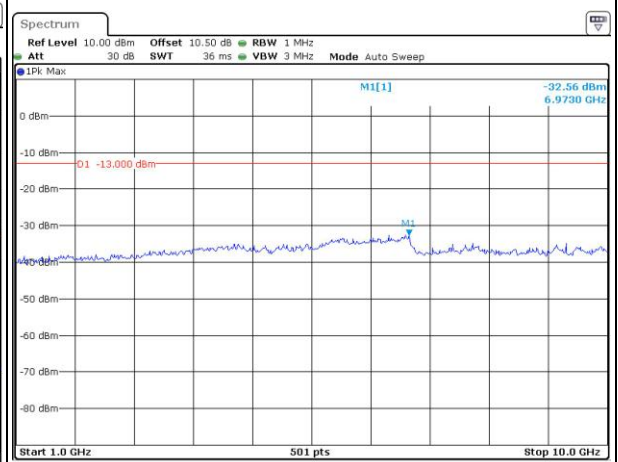
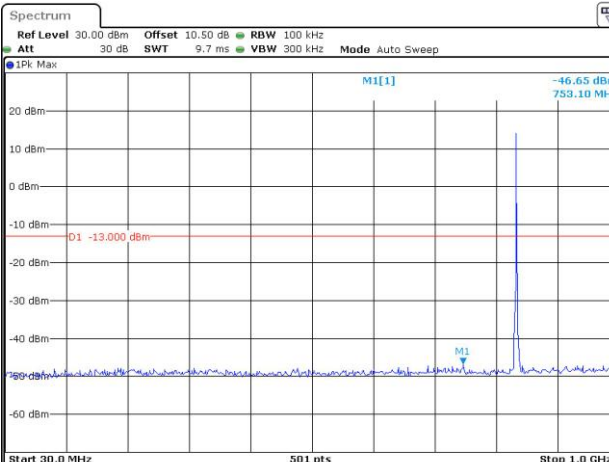
Channel

1.4MHz Bandwidth QPSK

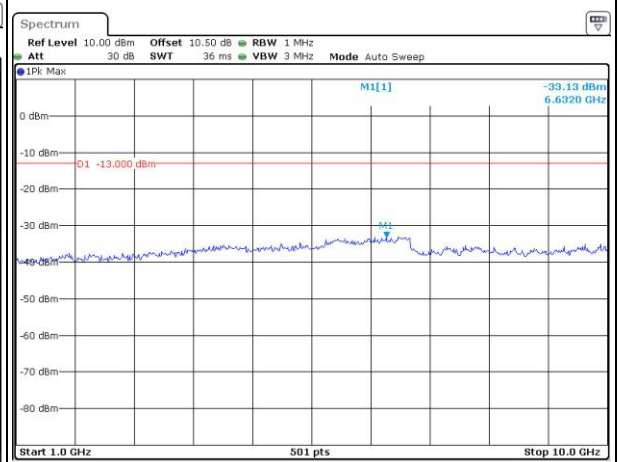
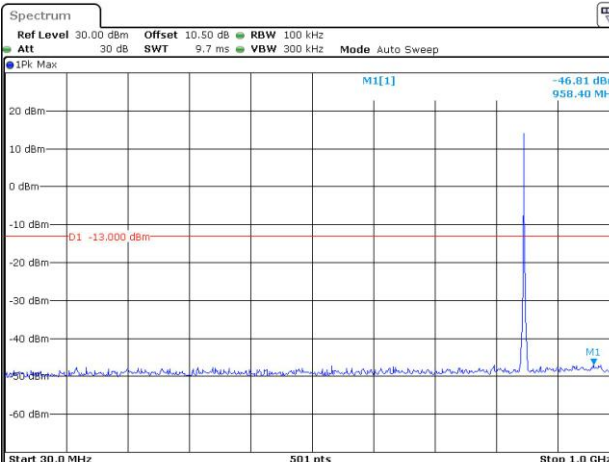
Lowest



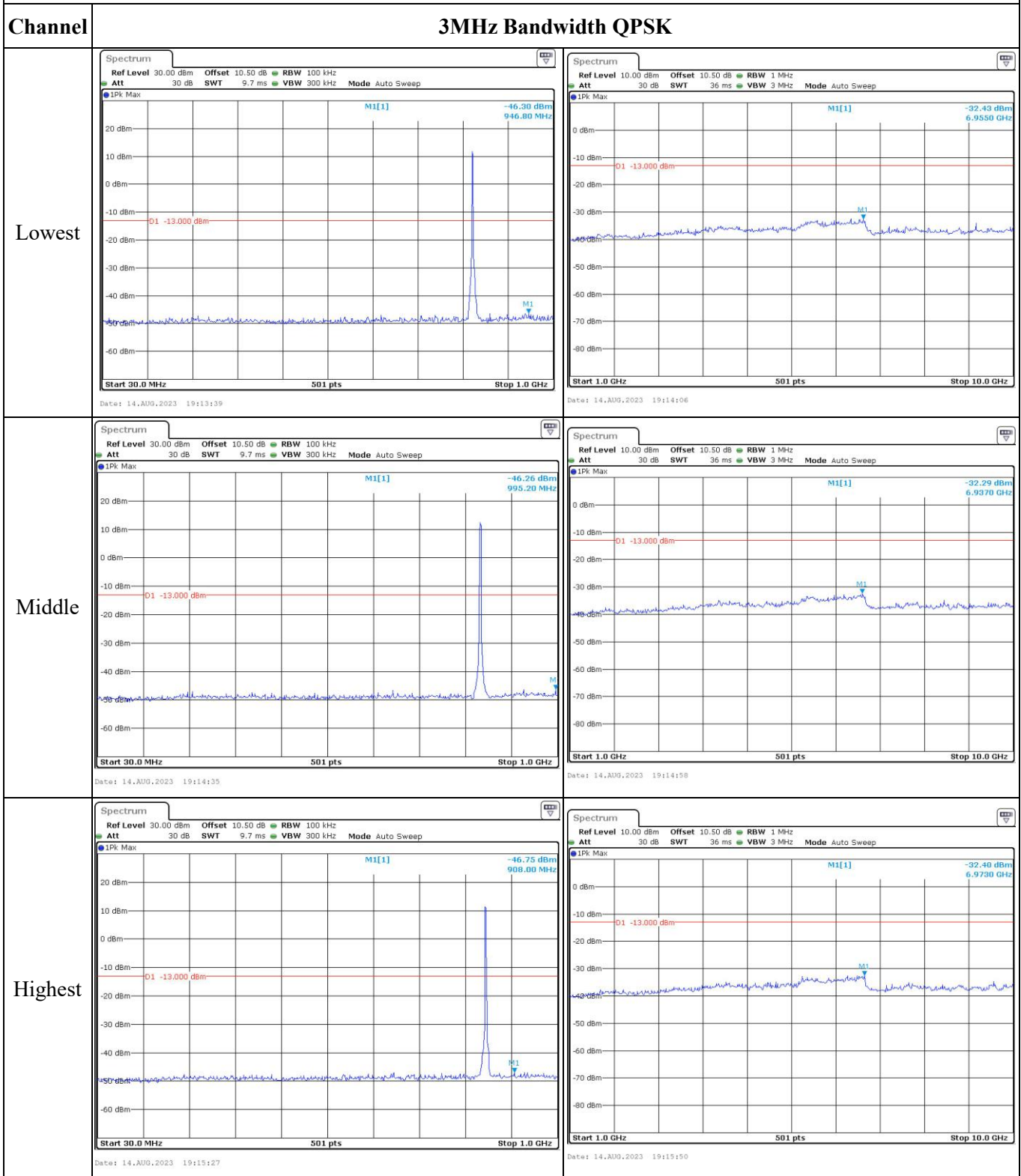
Middle



Highest



### Spurious Emissions at Antenna Terminal





### Spurious Emissions at Antenna Terminal

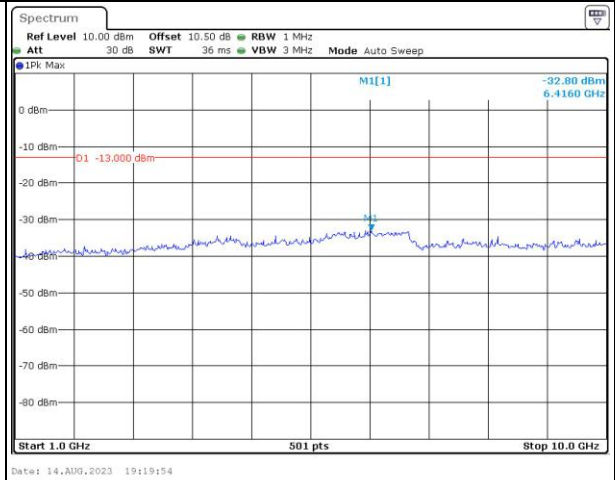
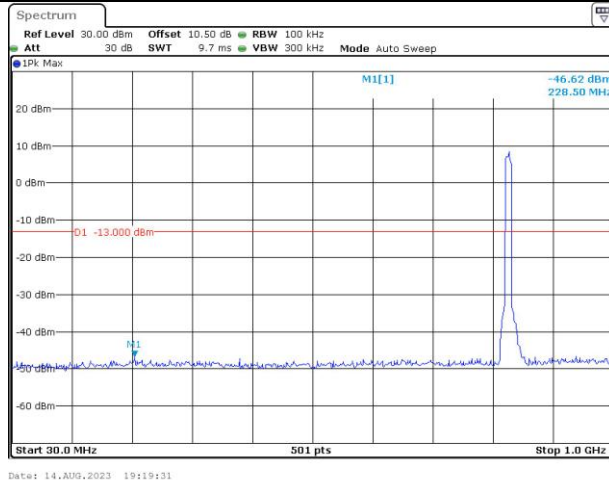
| Channel | 5MHz Bandwidth QPSK   |   |
|---------|---|---|
| Lowest  | <p>Ref Level 30.00 dBm Offset 10.50 dB RBW 100 kHz<br/>Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPK Max M1[1] -46.49 dBm 915.80 MHz</p> <p>D1 -13.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 19:16:24</p> | <p>Ref Level 10.00 dBm Offset 10.50 dB RBW 1 MHz<br/>Att 30 dB SWT 36 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPK Max M1[1] -32.59 dBm 6.8830 GHz</p> <p>D1 -13.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 10.0 GHz</p> <p>Date: 14.AUG.2023 19:16:53</p>      |
|         | Middle  | <p>Ref Level 30.00 dBm Offset 10.50 dB RBW 100 kHz<br/>Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPK Max M1[1] -46.63 dBm 991.30 MHz</p> <p>D1 -13.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 19:17:26</p> |
| Highest |   | <p>Ref Level 30.00 dBm Offset 10.50 dB RBW 100 kHz<br/>Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPK Max M1[1] -46.74 dBm 923.50 MHz</p> <p>D1 -13.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 19:18:21</p> |

### Spurious Emissions at Antenna Terminal

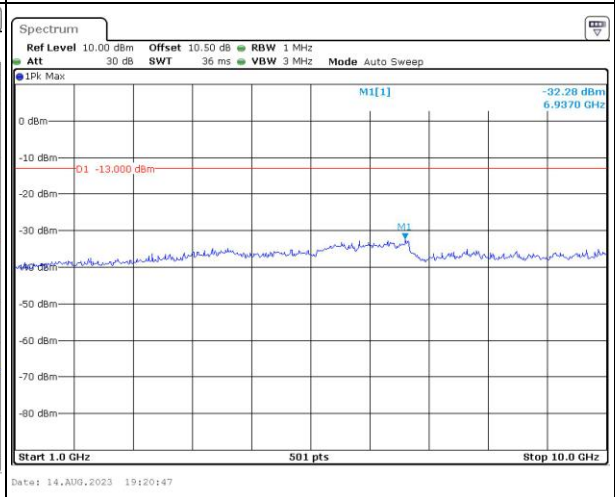
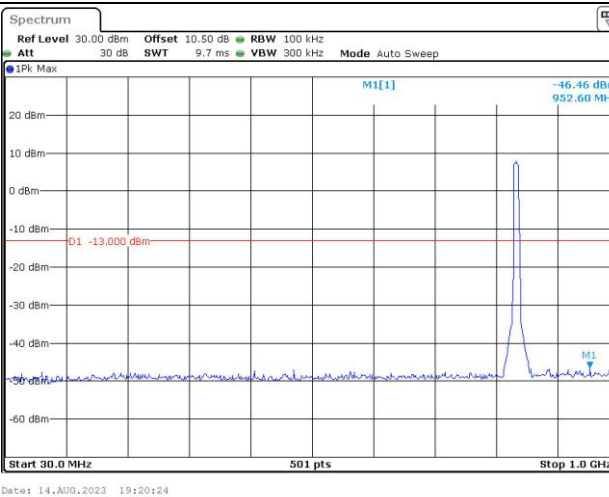
Channel

10MHz Bandwidth QPSK

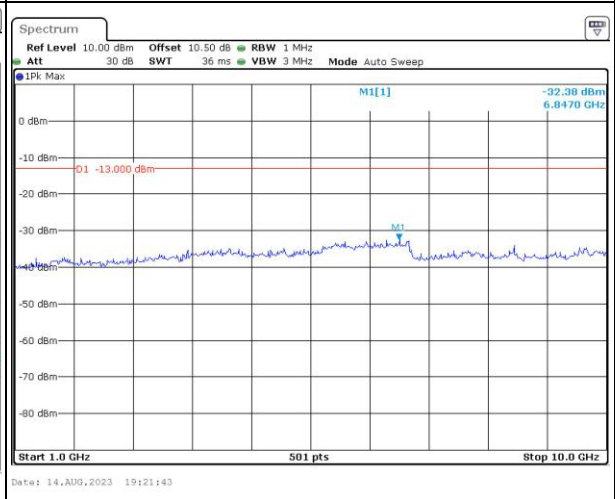
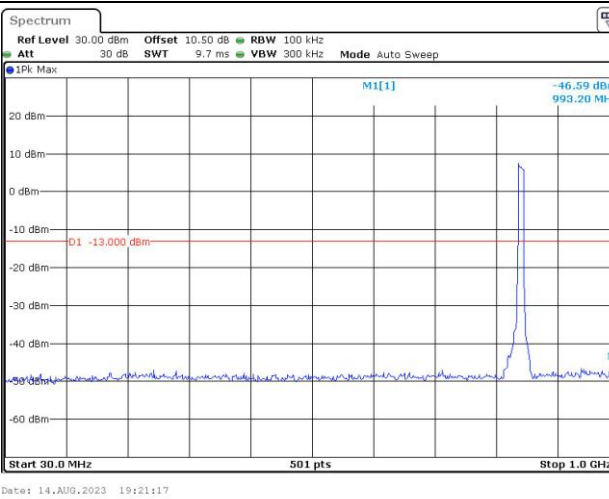
Lowest



Middle



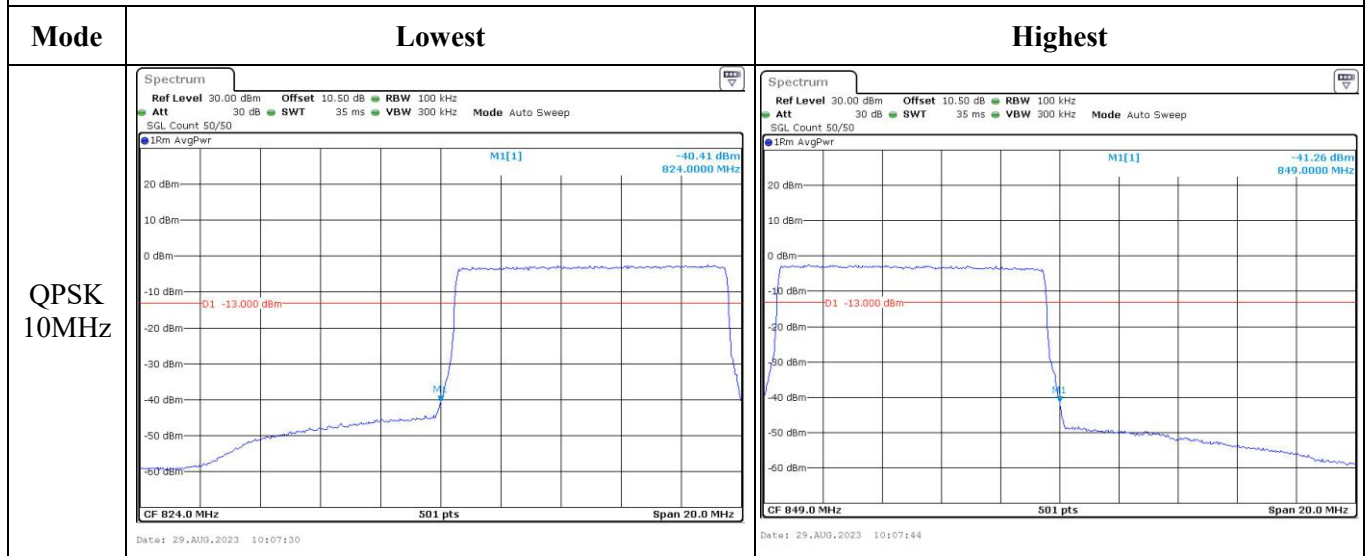
Highest



Out of band emission, Band Edge

| Mode           | Lowest | Highest |
|----------------|--------|---------|
| QPSK<br>1.4MHz |        |         |
| QPSK<br>3MHz   |        |         |
| QPSK<br>5MHz   |        |         |

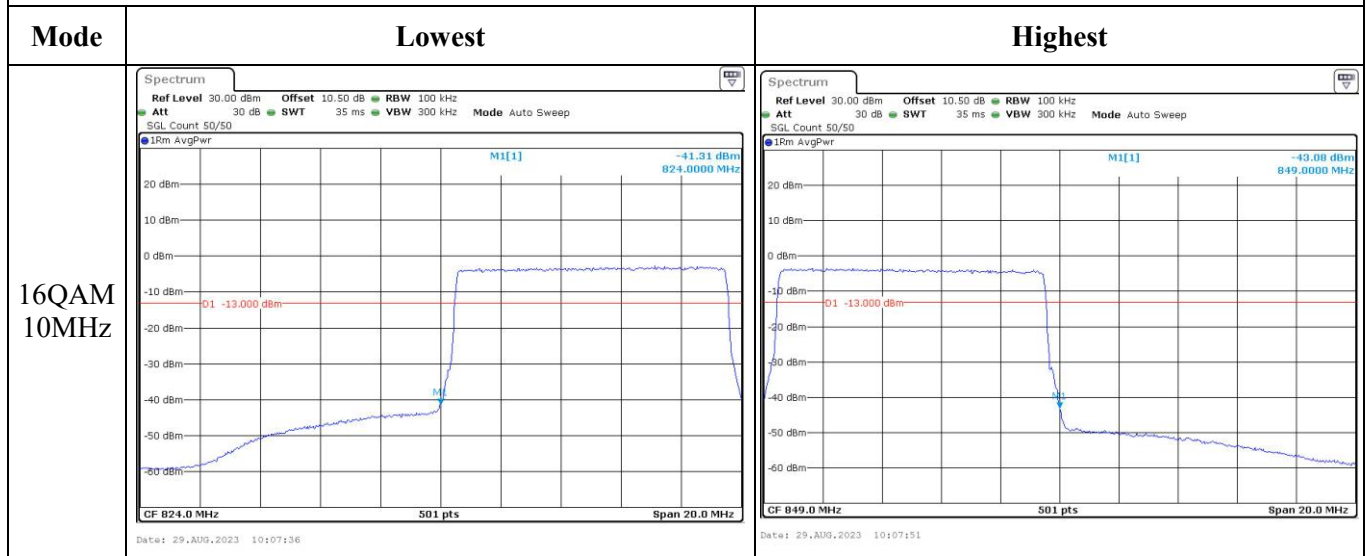
Out of band emission, Band Edge



Out of band emission, Band Edge

| Mode            | Lowest | Highest |
|-----------------|--------|---------|
| 16QAM<br>1.4MHz |        |         |
| 16QAM<br>3MHz   |        |         |
| 16QAM<br>5MHz   |        |         |

Out of band emission, Band Edge



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

|                |           |              |                     |
|----------------|-----------|--------------|---------------------|
| Serial Number: | 2A4I-1    | Test Date:   | 2023/8/13-2023/8/14 |
| Test Site:     | RF        | Test Mode:   | Transmitting        |
| Tester:        | Panda Sun | Test Result: | Pass                |

**Environmental Conditions:**

|                      |           |                           |       |                        |     |
|----------------------|-----------|---------------------------|-------|------------------------|-----|
| Temperature:<br>(°C) | 25.3~25.6 | Relative Humidity:<br>(%) | 64-68 | ATM Pressure:<br>(kPa) | 101 |
|----------------------|-----------|---------------------------|-------|------------------------|-----|

**Test Equipment List and Details:**

| Manufacturer | Description                         | Model         | Serial Number   | Calibration Date | Calibration Due Date |
|--------------|-------------------------------------|---------------|-----------------|------------------|----------------------|
| R&S          | Spectrum Analyzer                   | FSV40-N       | 102259          | 2023/4/18        | 2024/4/17            |
| R&S          | Wideband Radio Communication Tester | CMW500        | 143458          | 2023/3/31        | 2024/3/30            |
| zhuoxiang    | Coaxial Cable                       | SMA-178       | 211001          | Each time        | N/A                  |
| YINSAIGE     | Coaxial Cable                       | SS402         | SJ0100001       | Each time        | N/A                  |
| BACL         | TEMP&HUMI Test Chamber              | BTH-150-40    | 30174           | 2023/3/31        | 2024/3/30            |
| UNI-T        | Multimeter                          | UT39A+        | C210582554      | 2022/9/29        | 2023/9/28            |
| ZHAOXIN      | DC Power Supply                     | RXN-6010D     | 21R6010D0912386 | N/A              | N/A                  |
| eastsheep    | Coaxial Attenuator                  | 2W-SMA-JK-18G | 21060301        | 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).

**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                      | 19.76                               | 19.35          | 19.26           | 19.56              | 33               |
|                             | RB1#13                     | 19.67                               | 19.25          | 19.41           |                    |                  |
|                             | RB1#24                     | 19.74                               | 19.21          | 19.24           |                    |                  |
|                             | RB15#0                     | 19.15                               | 18.9           | 18.68           |                    |                  |
|                             | RB15#10                    | 19.13                               | 18.79          | 18.74           |                    |                  |
|                             | RB25#0                     | 19.21                               | 18.79          | 18.65           |                    |                  |
| 5MHz 16QAM                  | RB1#0                      | 18.7                                | 17.93          | 17.49           | 18.51              | 33               |
|                             | RB1#13                     | 18.71                               | 17.93          | 17.42           |                    |                  |
|                             | RB1#24                     | 18.68                               | 17.82          | 17.41           |                    |                  |
|                             | RB15#0                     | 17.89                               | 17.51          | 17              |                    |                  |
|                             | RB15#10                    | 17.91                               | 17.43          | 17.07           |                    |                  |
|                             | RB25#0                     | 17.9                                | 17.47          | 17.03           |                    |                  |
| 10MHz QPSK                  | RB1#0                      | 19.86                               | 19.41          | 19.2            | 19.66              | 33               |
|                             | RB1#25                     | 19.75                               | 19.31          | 19.14           |                    |                  |
|                             | RB1#49                     | 19.68                               | 19.34          | 19.13           |                    |                  |
|                             | RB25#0                     | 19.09                               | 18.86          | 18.77           |                    |                  |
|                             | RB50#0                     | 19.07                               | 18.83          | 18.84           |                    |                  |
| 10MHz 16QAM                 | RB1#0                      | 18.81                               | 17.97          | 18.41           | 18.61              | 33               |
|                             | RB1#25                     | 18.75                               | 17.87          | 18.35           |                    |                  |
|                             | RB1#49                     | 18.66                               | 17.8           | 18.36           |                    |                  |
|                             | RB25#0                     | 17.54                               | 17.15          | 16.57           |                    |                  |
|                             | RB50#0                     | 17.67                               | 17.13          | 16.79           |                    |                  |
| 15MHz QPSK                  | RB1#0                      | 19.79                               | 19.45          | 19.23           | 19.59              | 33               |
|                             | RB1#38                     | 19.66                               | 19.28          | 19.19           |                    |                  |
|                             | RB1#74                     | 19.59                               | 19.34          | 19.15           |                    |                  |
|                             | RB36#0                     | 19.15                               | 18.92          | 18.87           |                    |                  |
|                             | RB36#39                    | 19                                  | 18.81          | 18.73           |                    |                  |
|                             | RB75#0                     | 18.99                               | 18.92          | 18.81           |                    |                  |
| 15MHz 16QAM                 | RB1#0                      | 18.79                               | 18.88          | 18.45           | 18.68              | 33               |
|                             | RB1#38                     | 18.82                               | 18.79          | 18.45           |                    |                  |
|                             | RB1#74                     | 18.71                               | 18.75          | 18.36           |                    |                  |
|                             | RB36#0                     | 17.99                               | 18.12          | 16.76           |                    |                  |
|                             | RB36#39                    | 18                                  | 17.65          | 16.93           |                    |                  |
|                             | RB75#0                     | 18.01                               | 17.86          | 16.81           |                    |                  |
| 20MHz QPSK                  | RB1#0                      | 19.79                               | 19.64          | 19.27           | 19.59              | 33               |



|             |         |       |       |       |       |    |
|-------------|---------|-------|-------|-------|-------|----|
|             | RB1#50  | 19.62 | 19.46 | 19.16 |       |    |
|             | RB1#99  | 19.44 | 19.4  | 19.16 |       |    |
|             | RB50#0  | 19.24 | 18.99 | 18.7  |       |    |
|             | RB50#50 | 18.96 | 18.86 | 18.69 |       |    |
|             | RB100#0 | 18.99 | 18.9  | 18.77 |       |    |
| 20MHz 16QAM | RB1#0   | 19.28 | 19.1  | 18.1  | 19.08 | 33 |
|             | RB1#50  | 19.11 | 18.9  | 18.1  |       |    |
|             | RB1#99  | 18.94 | 18.86 | 18    |       |    |
|             | RB50#0  | 17.9  | 17.86 | 16.33 |       |    |
|             | RB50#50 | 17.83 | 17.26 | 16.65 |       |    |
|             | RB100#0 | 17.88 | 17.55 | 16.54 |       |    |

Note: EIRP=Conducted Power(dBm) - Lc(dB) + G<sub>T</sub>(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                      | 5.54                      | 5.88           | 5.68            | 13          |
|                             | RB100#0                    | 5.42                      | 5.48           | 5.45            | 13          |
| 20MHz 16QAM                 | RB1#0                      | 6.00                      | 6.93           | 6.06            | 13          |
|                             | RB100#0                    | 6.17                      | 6.32           | 6.29            | 13          |
| <b>Result:</b>              |                            |                           |                |                 | <b>Pass</b> |

**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      | 4.511                        | 4.511          | 4.511        | 5.000                          | 5.000          | 5.000        |
| 5MHz 16QAM     | 4.531                        | 4.531          | 4.511        | 5.020                          | 5.040          | 4.980        |
| 10MHz QPSK     | 8.942                        | 8.942          | 8.942        | 9.760                          | 9.760          | 9.840        |
| 10MHz 16QAM    | 8.942                        | 8.942          | 8.942        | 9.800                          | 9.840          | 9.680        |
| 15MHz QPSK     | 13.473                       | 13.473         | 13.533       | 14.940                         | 15.120         | 15.060       |
| 15MHz 16QAM    | 13.533                       | 13.533         | 13.533       | 14.940                         | 15.060         | 14.880       |
| 20MHz QPSK     | 17.964                       | 17.964         | 18.044       | 19.520                         | 19.760         | 19.520       |
| 20MHz 16QAM    | 17.964                       | 17.964         | 18.044       | 19.600                         | 19.680         | 19.680       |

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.