

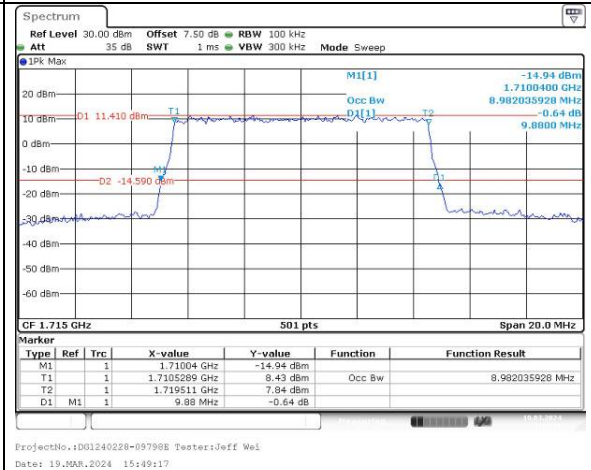
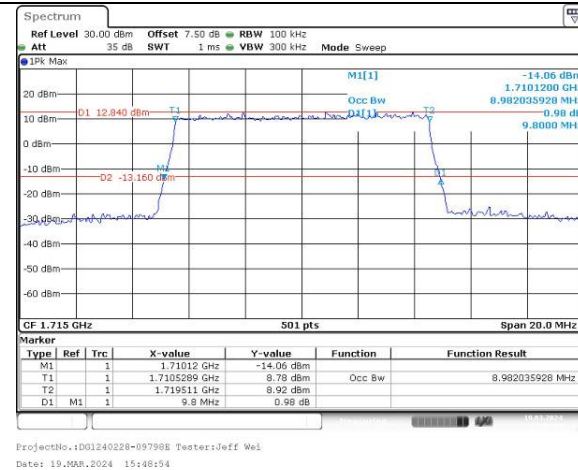
## Occupied Bandwidth

## Channel

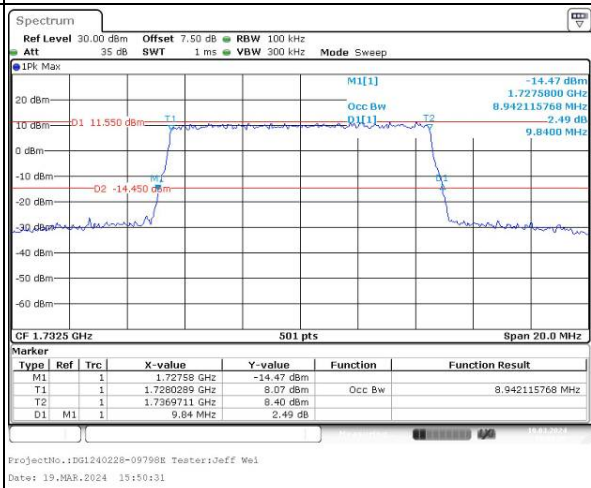
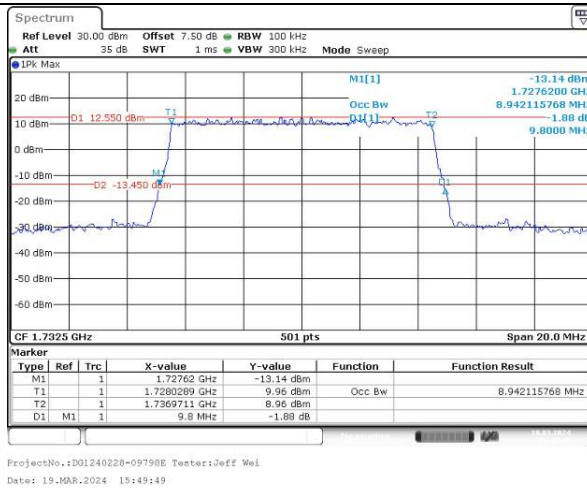
## 10MHz Bandwidth QPSK

## 10MHz Bandwidth 16QAM

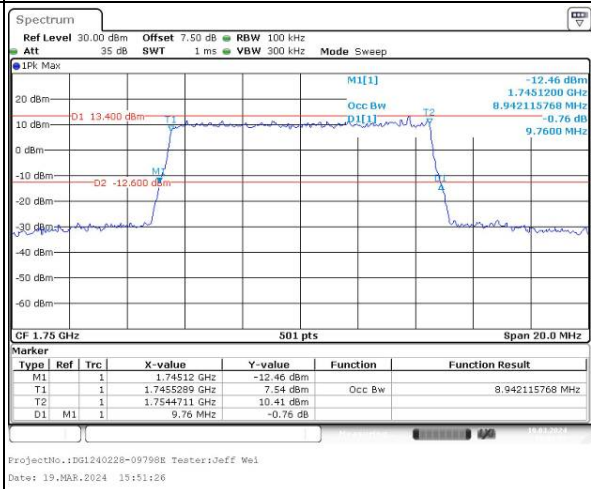
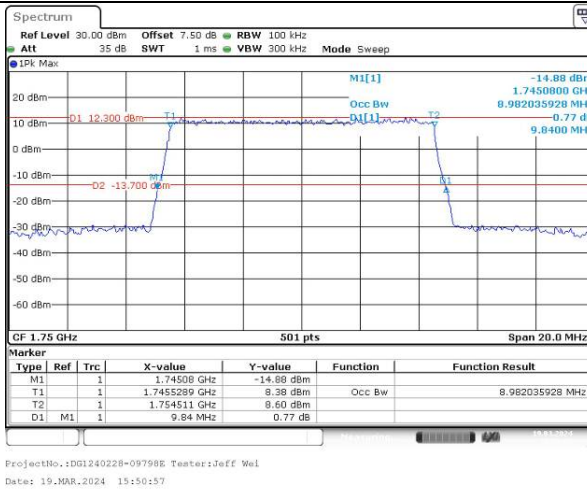
## Lowest



## Middle



## Highest



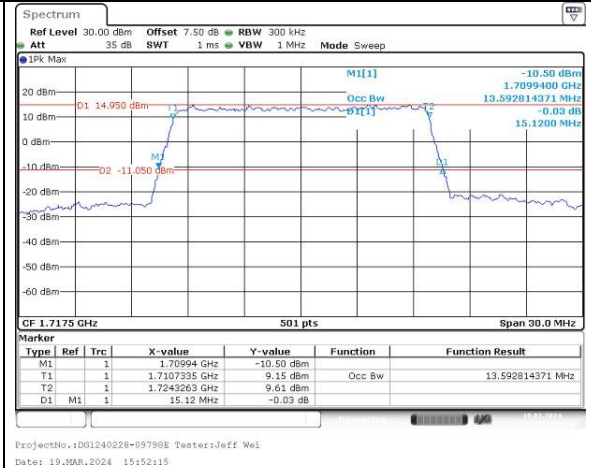
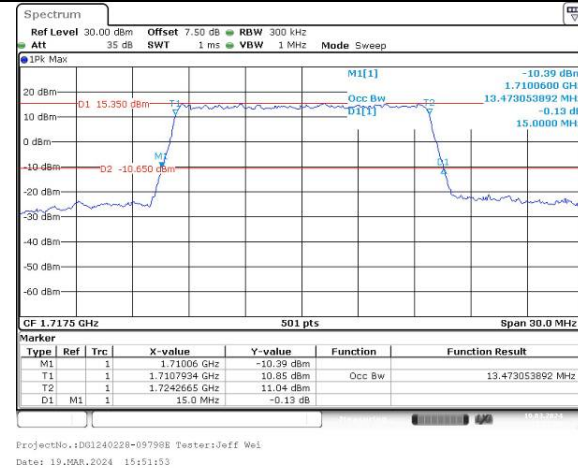
## Occupied Bandwidth

## Channel

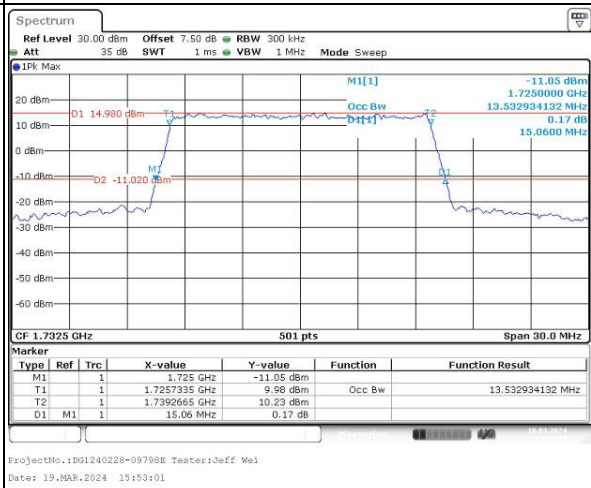
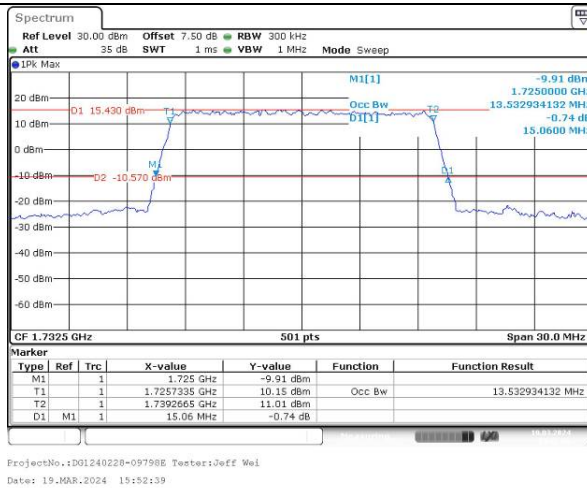
## 15MHz Bandwidth QPSK

## 15MHz Bandwidth 16QAM

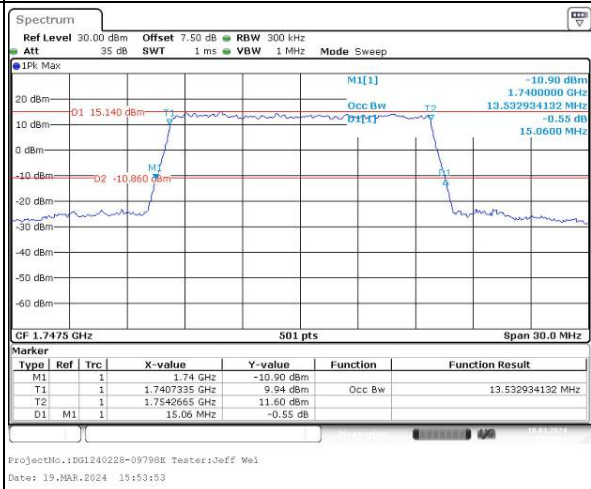
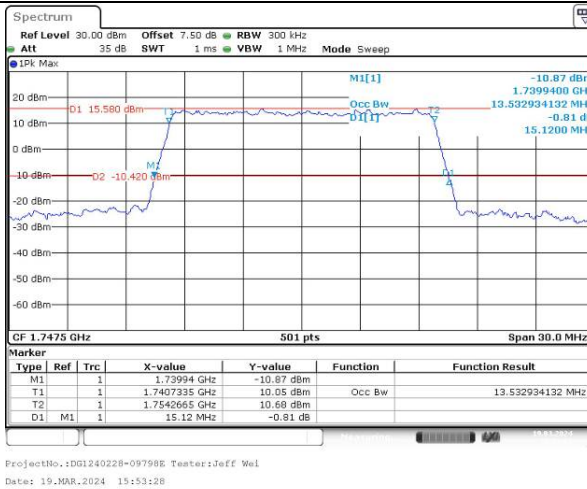
## Lowest



## Middle



## Highest



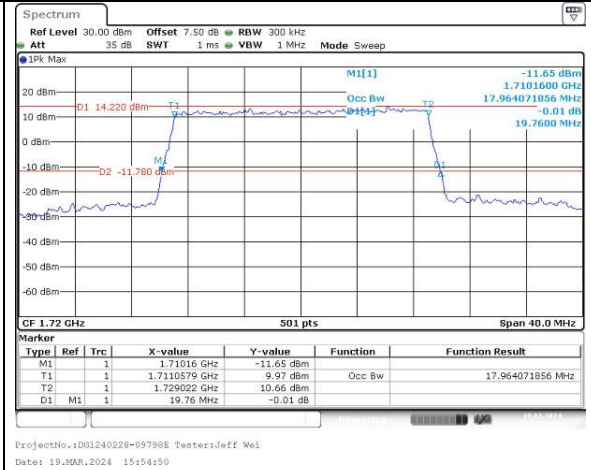
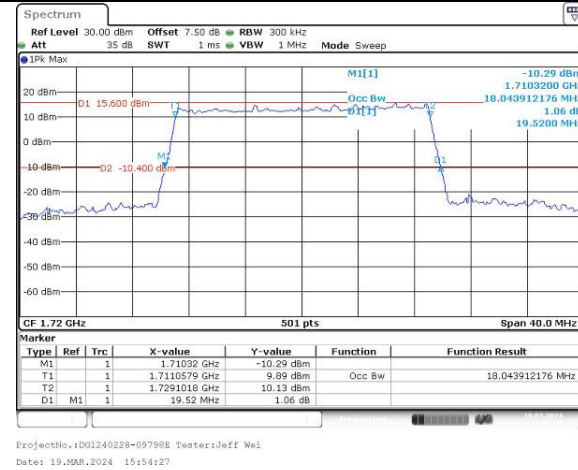
## Occupied Bandwidth

## Channel

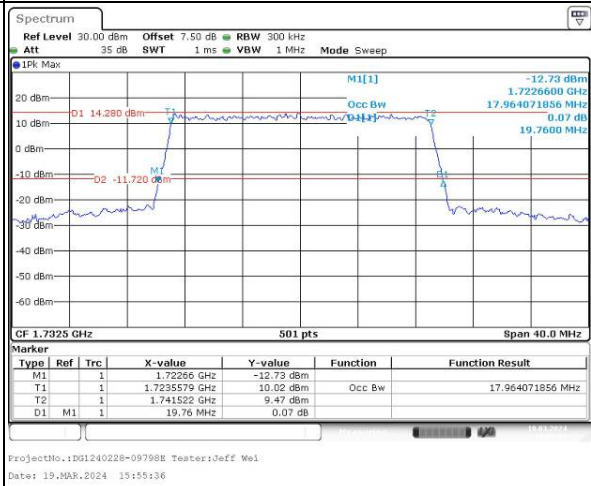
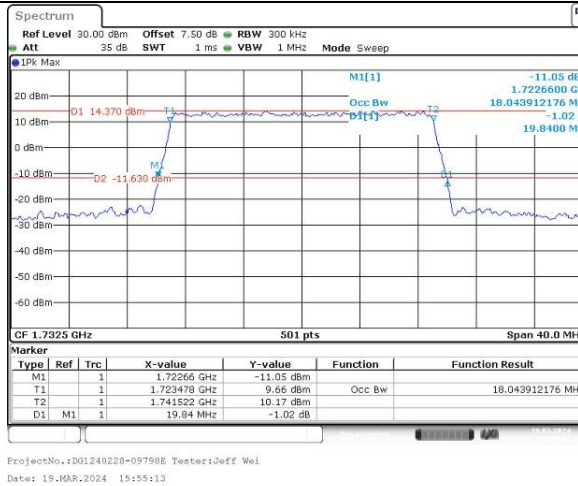
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

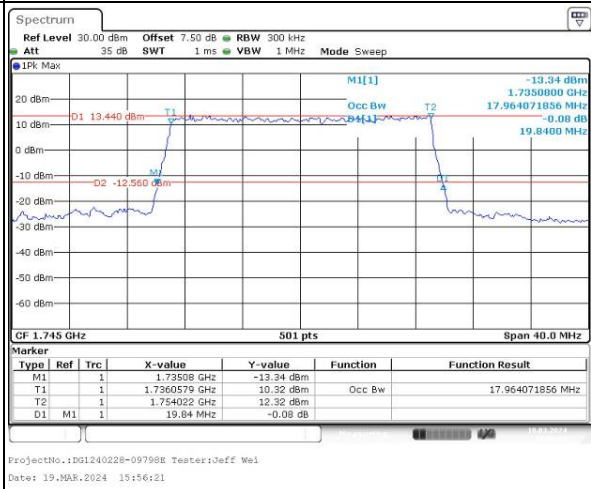
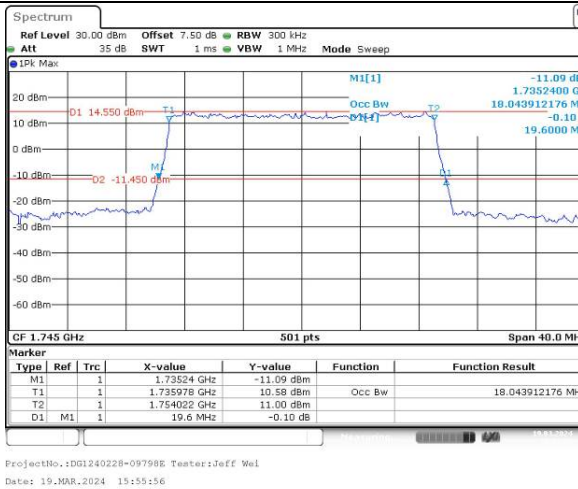
Lowest



Middle



Highest

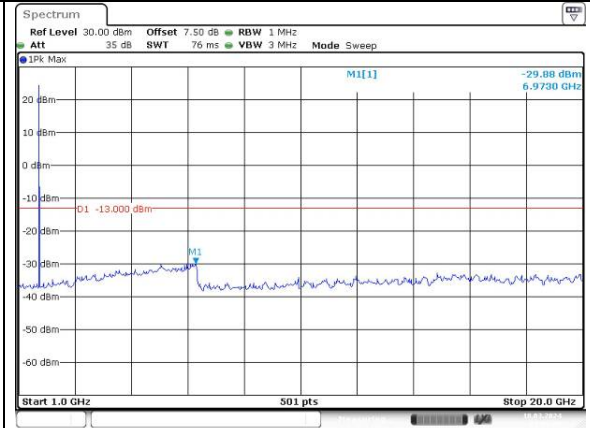
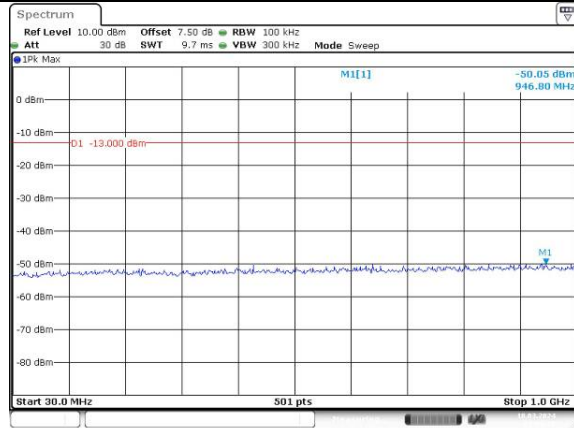


# Spurious Emissions at Antenna Terminal

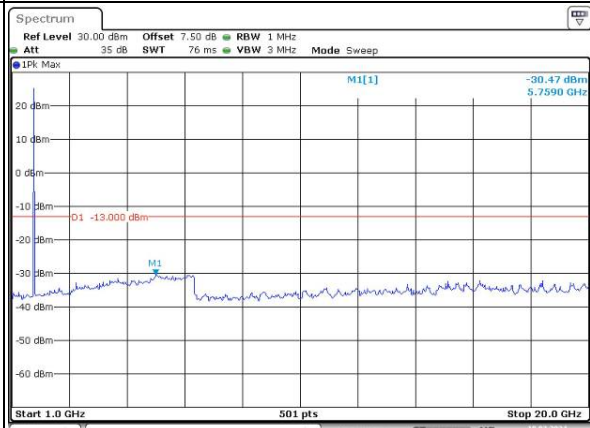
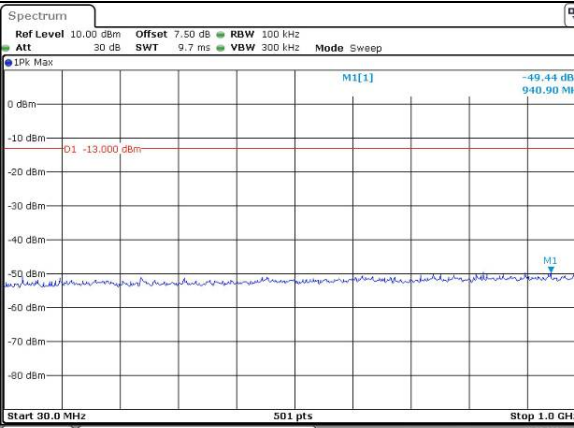
Channel

1.4MHz Bandwidth QPSK

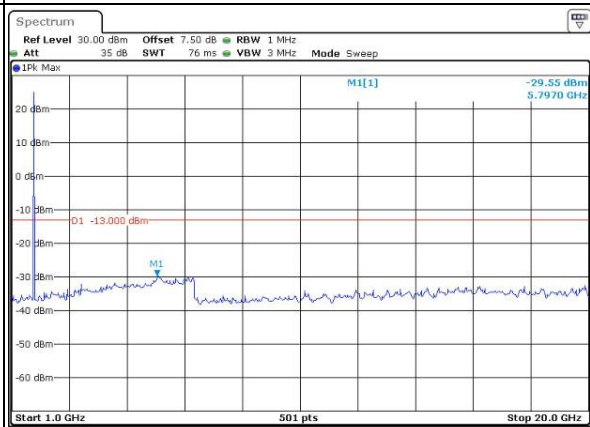
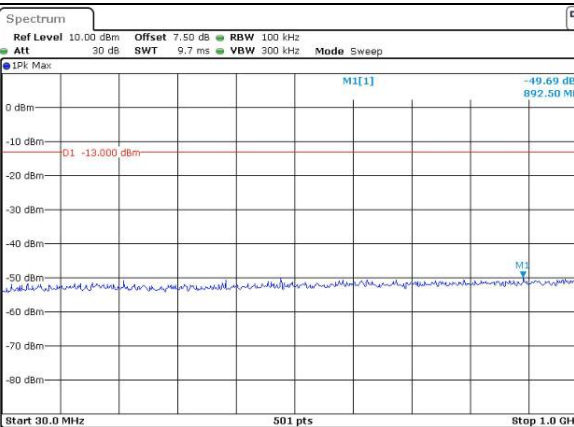
Lowest



Middle



Highest



# Spurious Emissions at Antenna Terminal

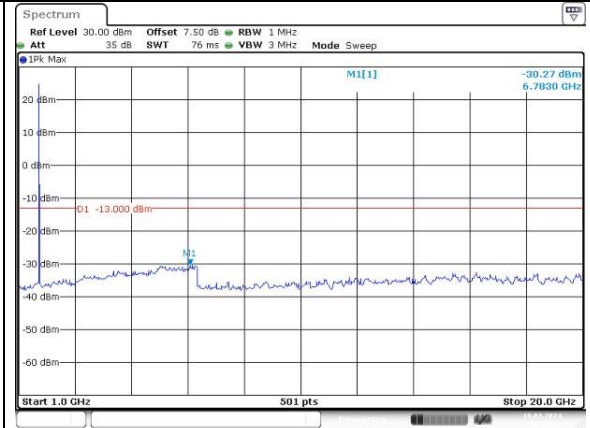
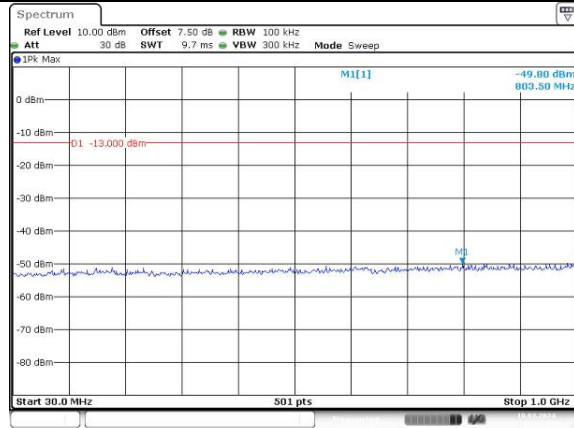
| Channel | 3MHz Bandwidth QPSK                                                                |                                                                                    |
|---------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Lowest  | <p>ProjectNo.:DG1240228-09798E Tester:Loge Long<br/>Date: 18.MAR.2024 23:58:40</p> | <p>ProjectNo.:DG1240228-09798E Tester:Loge Long<br/>Date: 18.MAR.2024 23:59:06</p> |
|         | <p>ProjectNo.:DG1240228-09798E Tester:Loge Long<br/>Date: 18.MAR.2024 23:59:34</p> | <p>ProjectNo.:DG1240228-09798E Tester:Loge Long<br/>Date: 18.MAR.2024 23:59:59</p> |
| Highest | <p>ProjectNo.:DG1240228-09798E Tester:Loge Long<br/>Date: 19.MAR.2024 00:00:27</p> | <p>ProjectNo.:DG1240228-09798E Tester:Loge Long<br/>Date: 19.MAR.2024 00:00:52</p> |

# Spurious Emissions at Antenna Terminal

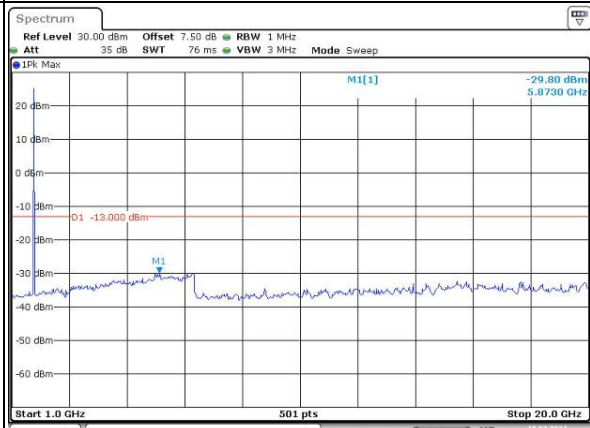
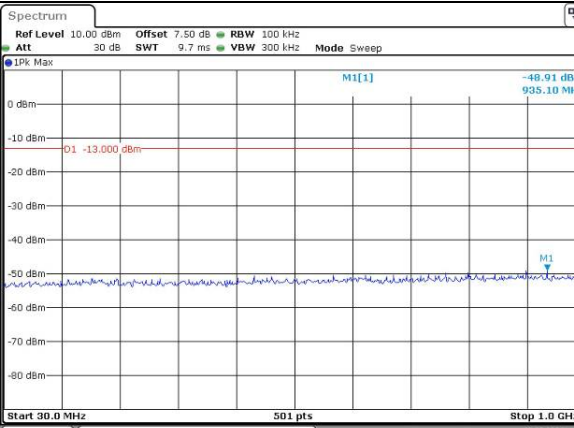
Channel

5MHz Bandwidth QPSK

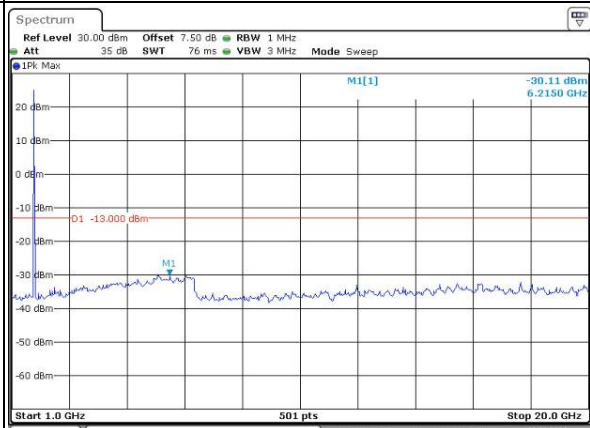
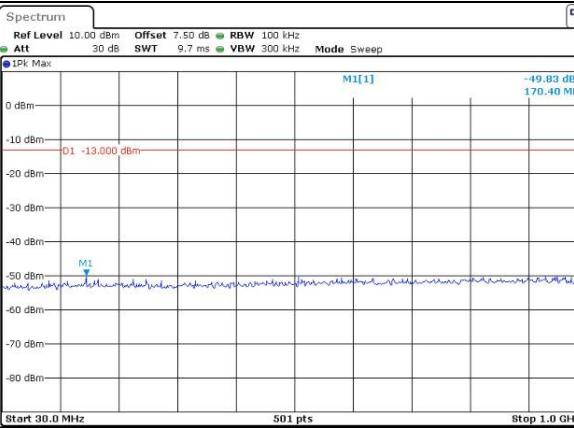
Lowest



Middle



Highest

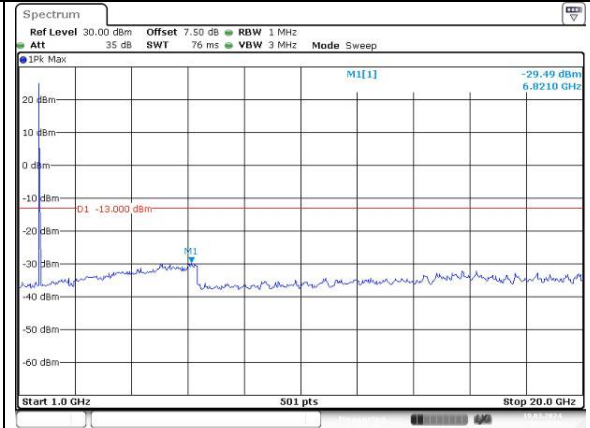
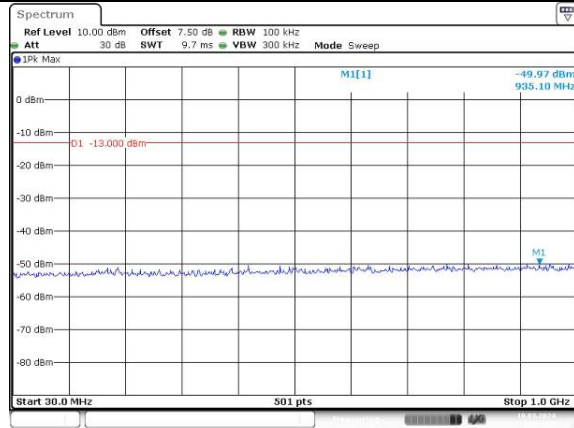


# Spurious Emissions at Antenna Terminal

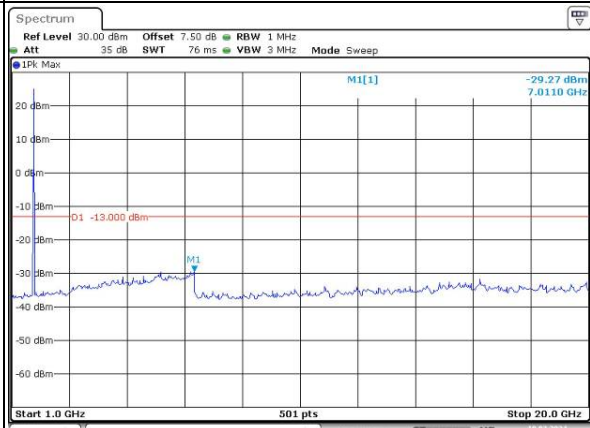
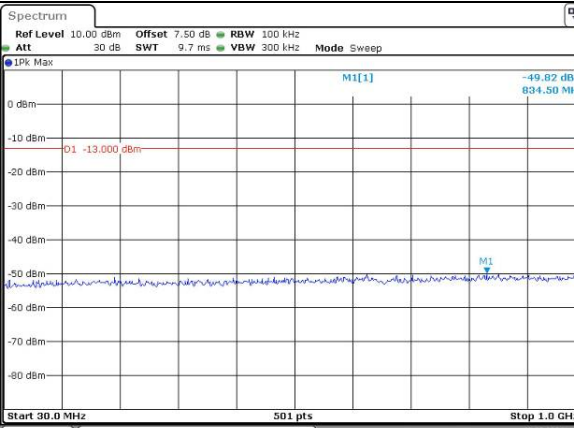
Channel

10MHz Bandwidth QPSK

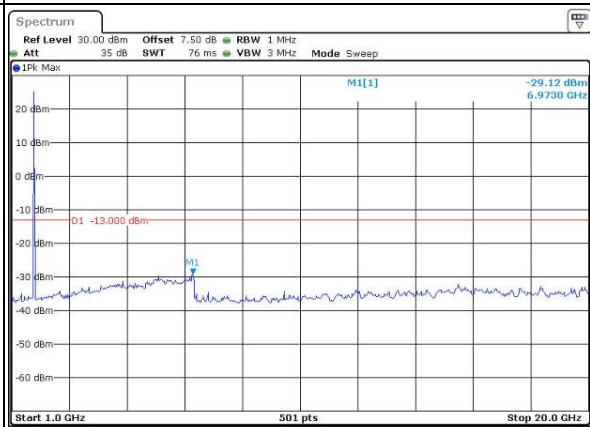
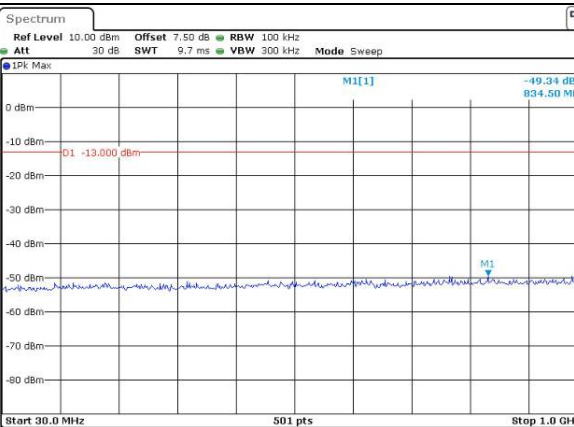
Lowest



Middle



Highest

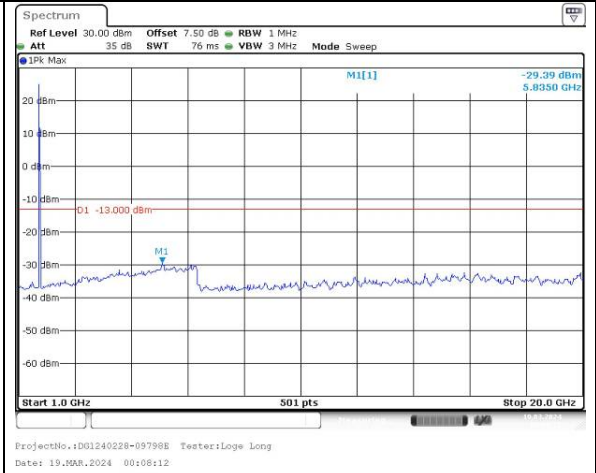
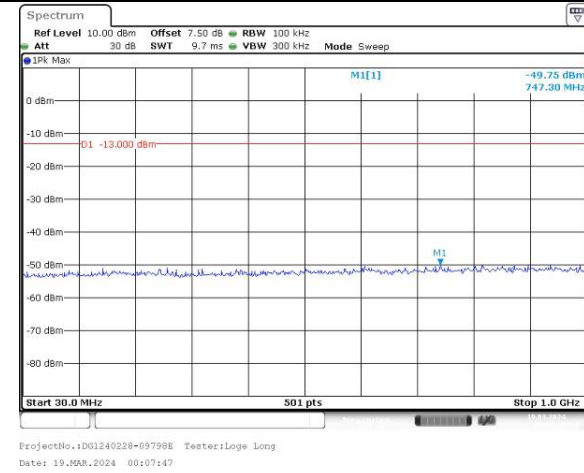


# Spurious Emissions at Antenna Terminal

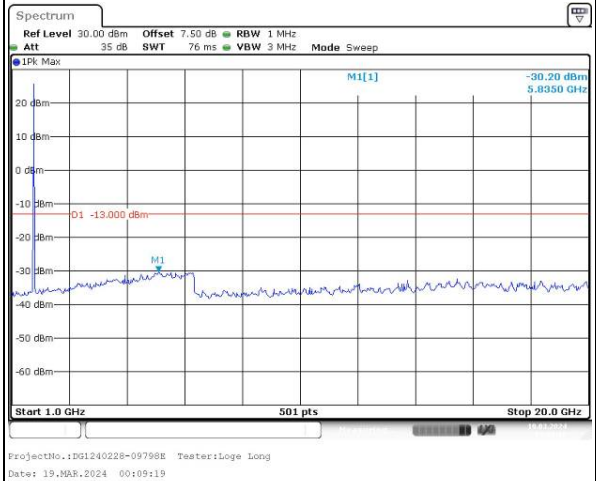
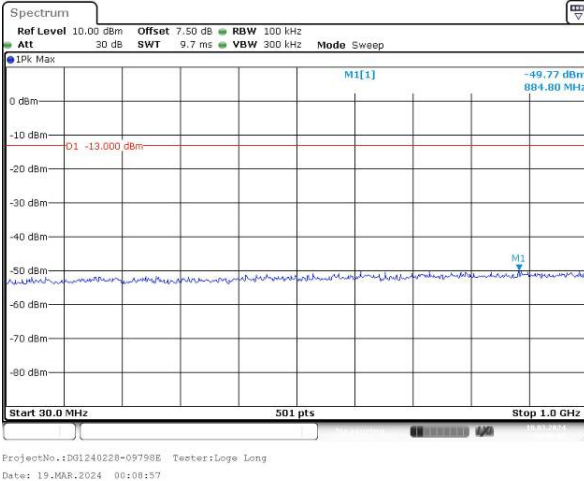
Channel

15MHz Bandwidth QPSK

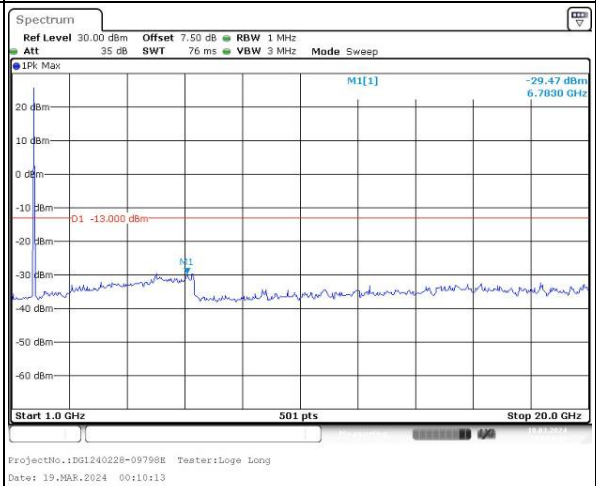
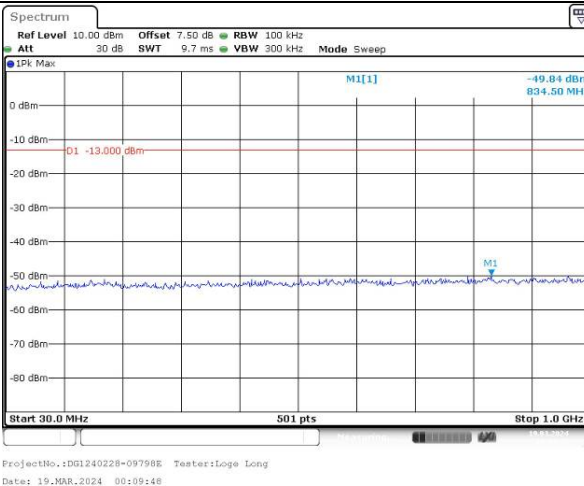
Lowest



Middle



Highest

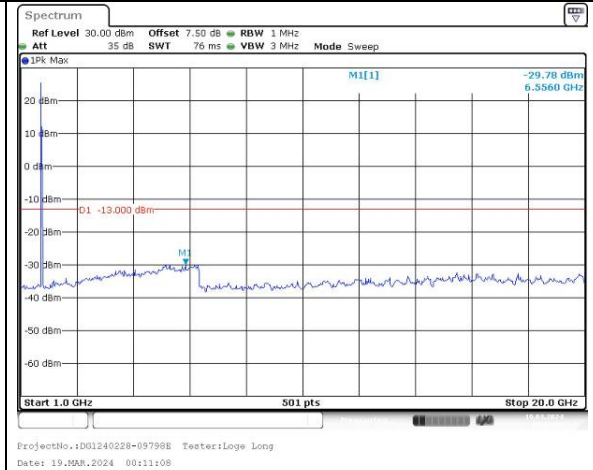
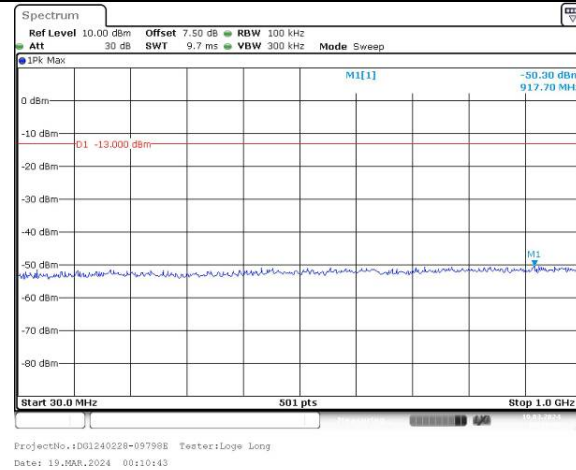


## Spurious Emissions at Antenna Terminal

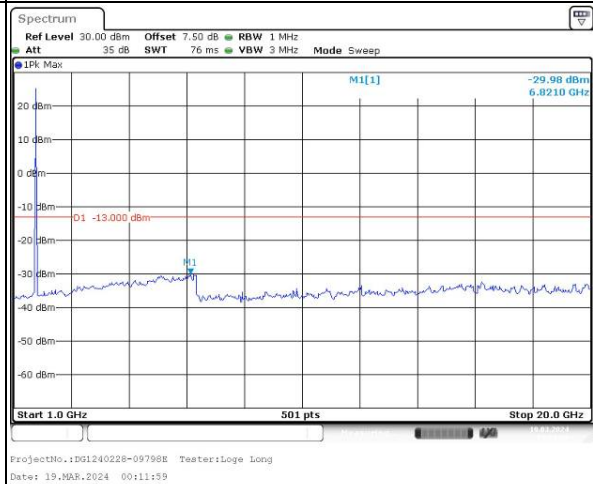
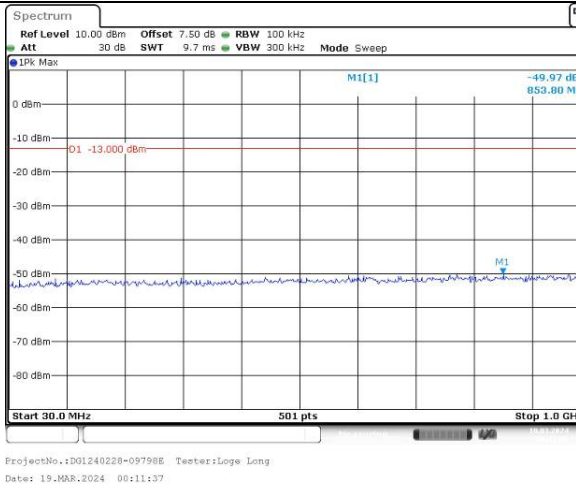
Channel

20MHz Bandwidth QPSK

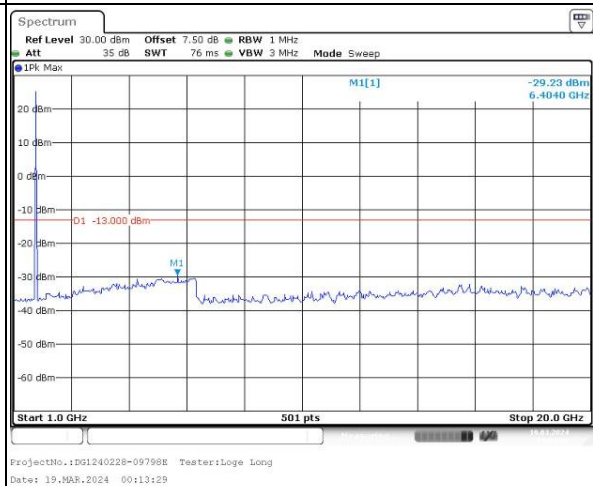
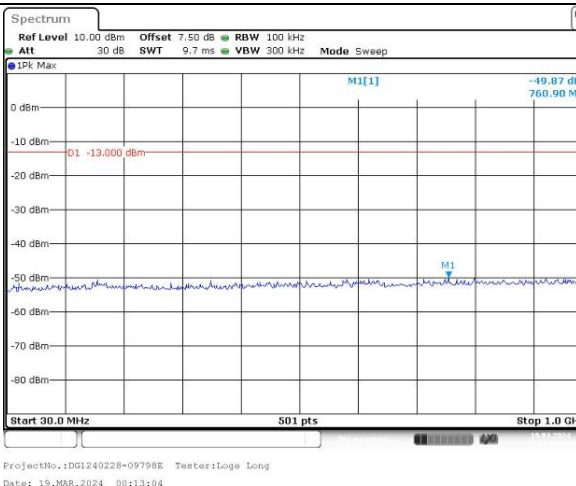
Lowest



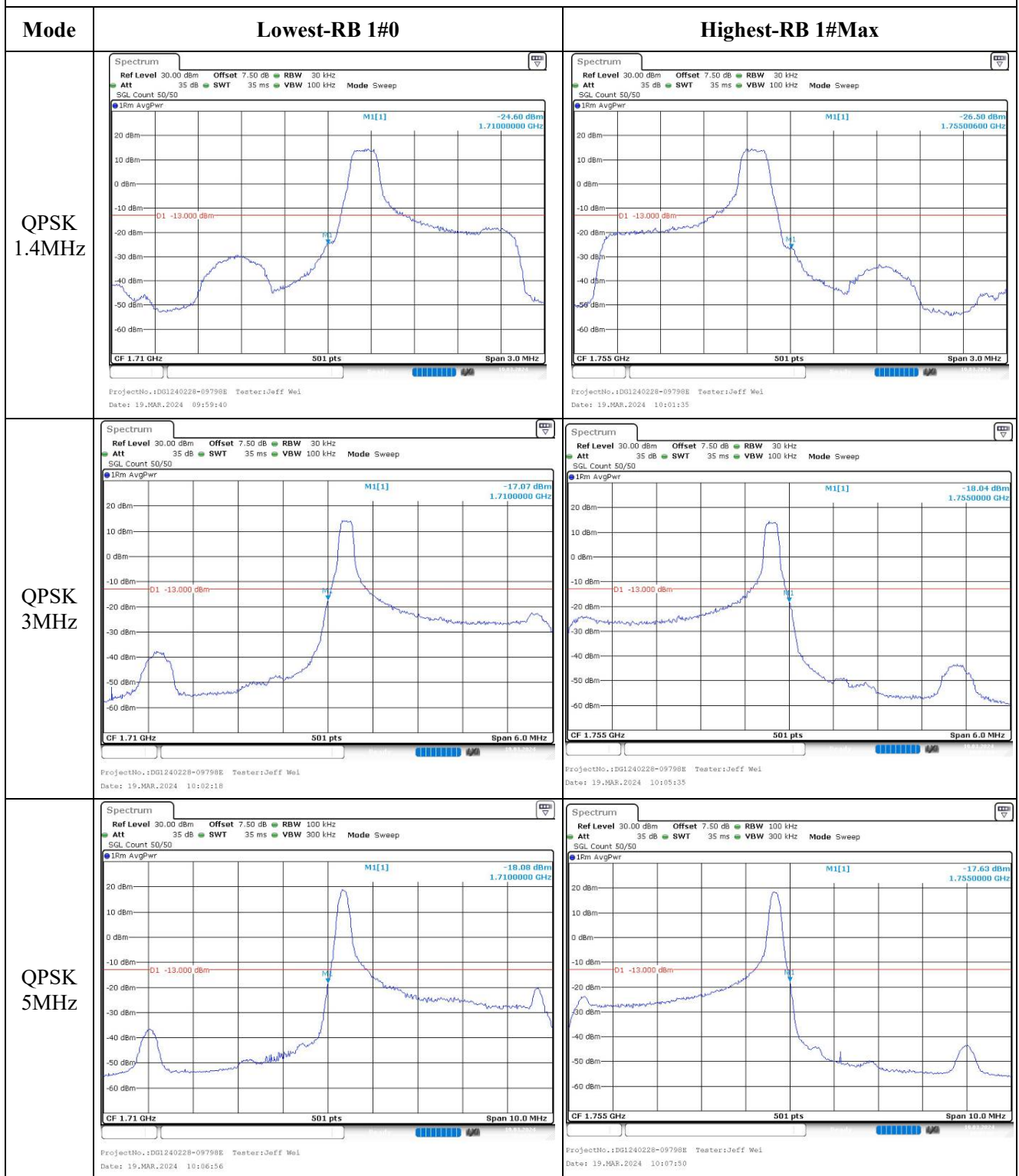
Middle



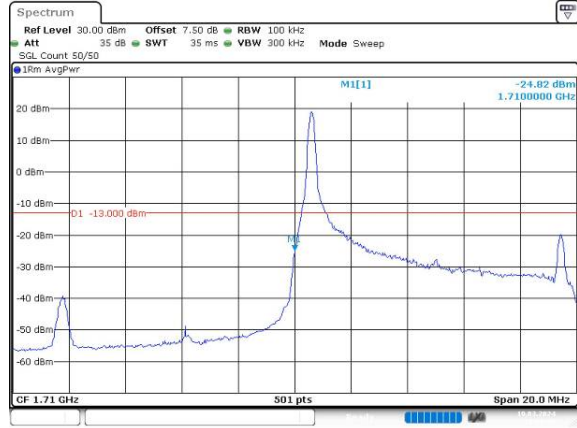
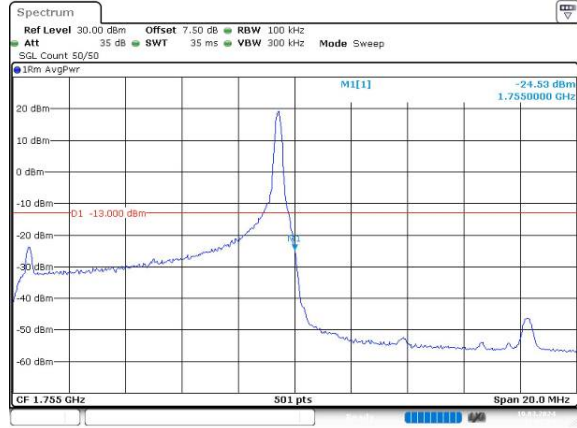
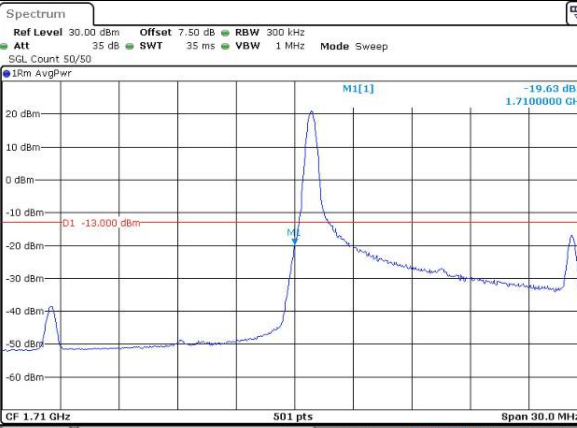
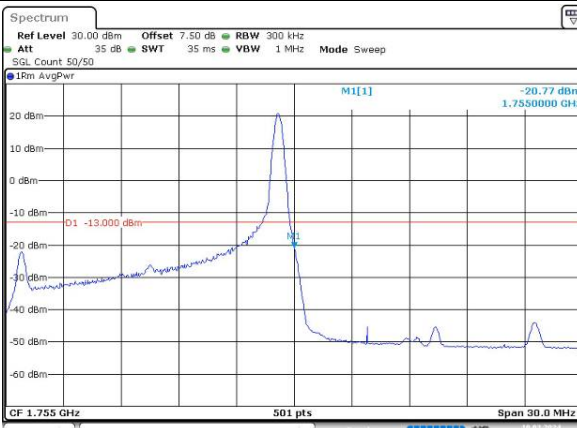
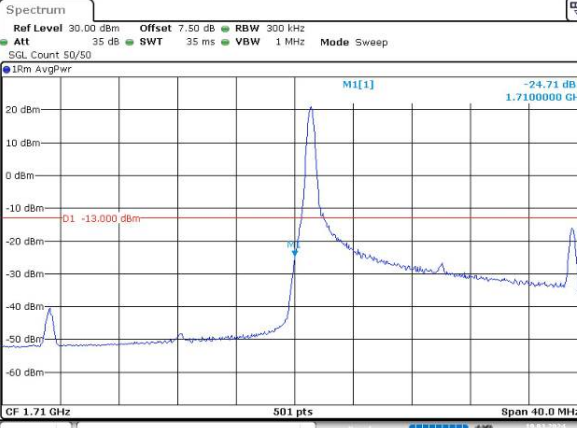
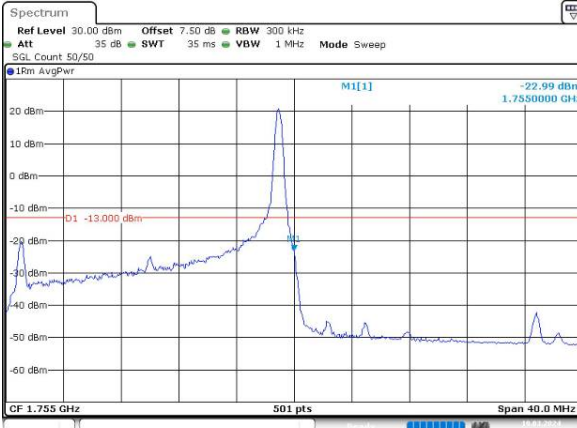
Highest



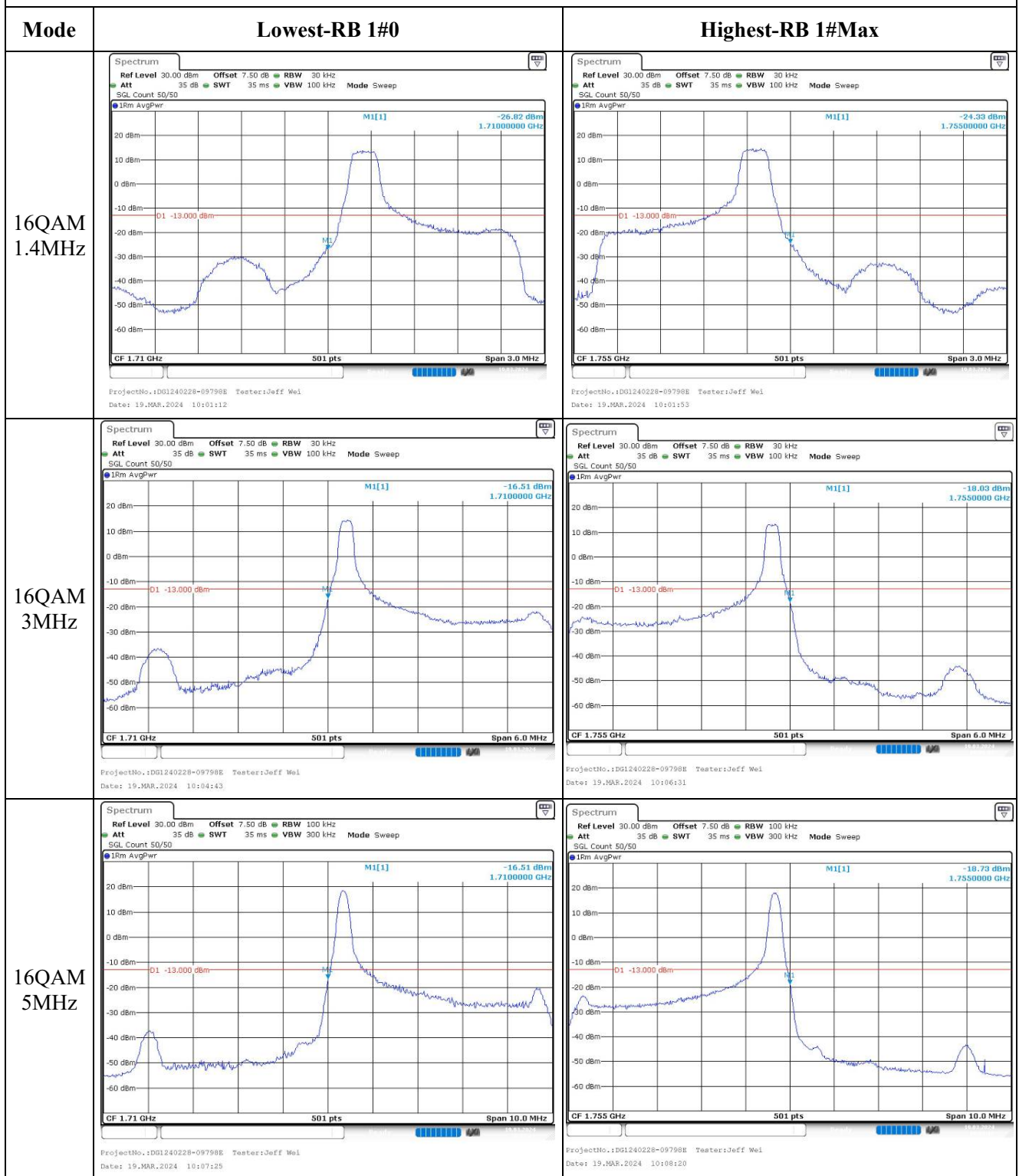
## Out of band emission, Band Edge



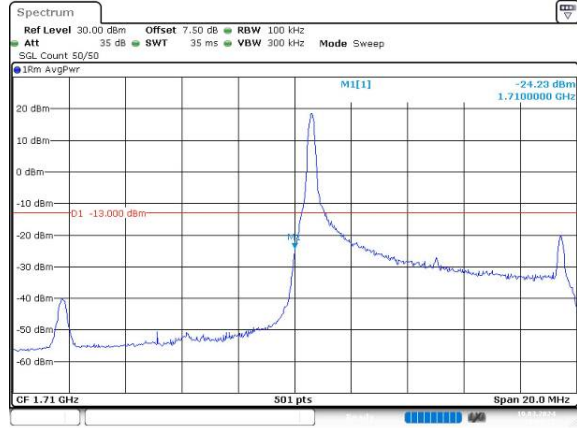
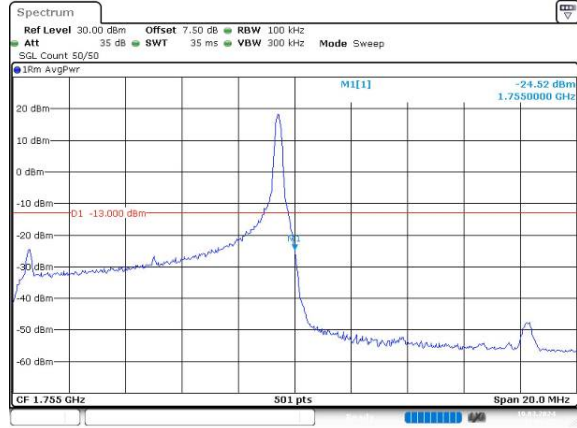
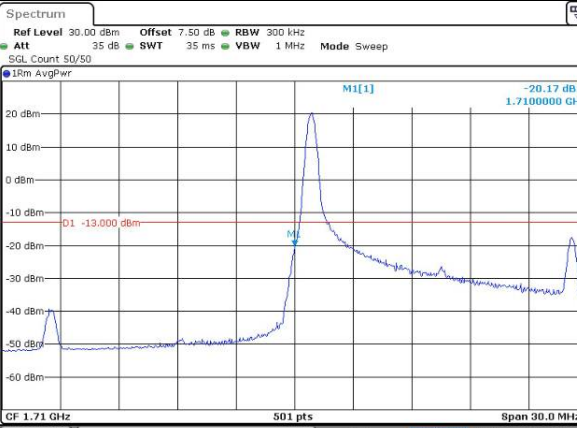
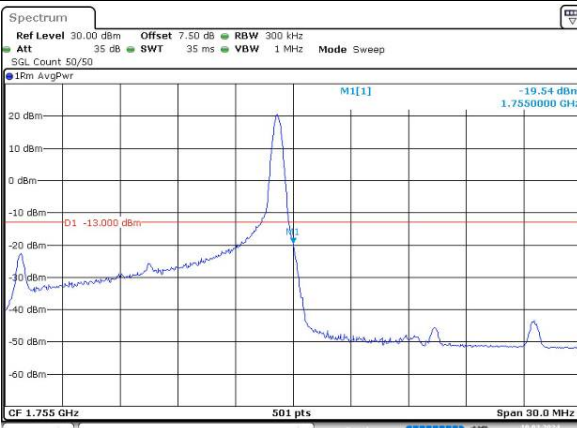
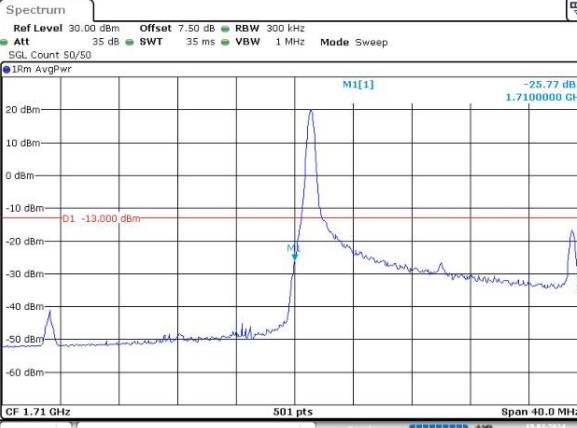
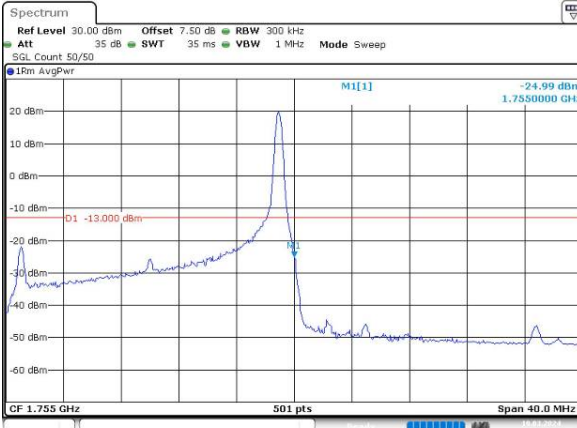
## Out of band emission, Band Edge

| Mode          | Lowest-RB 1#0                                                                                                                                                         | Highest-RB 1#Max                                                                                                                                                       |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| QPSK<br>10MHz |  <p>ProjectNo.:DG1240228-09798E Tester:Jeff Wei<br/>Date: 19.MAR.2024 10:08:40</p>   |  <p>ProjectNo.:DG1240228-09798E Tester:Jeff Wei<br/>Date: 19.MAR.2024 11:05:54</p>   |
| QPSK<br>15MHz |  <p>ProjectNo.:DG1240228-09798E Tester:Jeff Wei<br/>Date: 19.MAR.2024 10:10:17</p>  |  <p>ProjectNo.:DG1240228-09798E Tester:Jeff Wei<br/>Date: 19.MAR.2024 10:10:50</p>  |
| QPSK<br>20MHz |  <p>ProjectNo.:DG1240228-09798E Tester:Jeff Wei<br/>Date: 19.MAR.2024 10:11:33</p> |  <p>ProjectNo.:DG1240228-09798E Tester:Jeff Wei<br/>Date: 19.MAR.2024 10:12:25</p> |

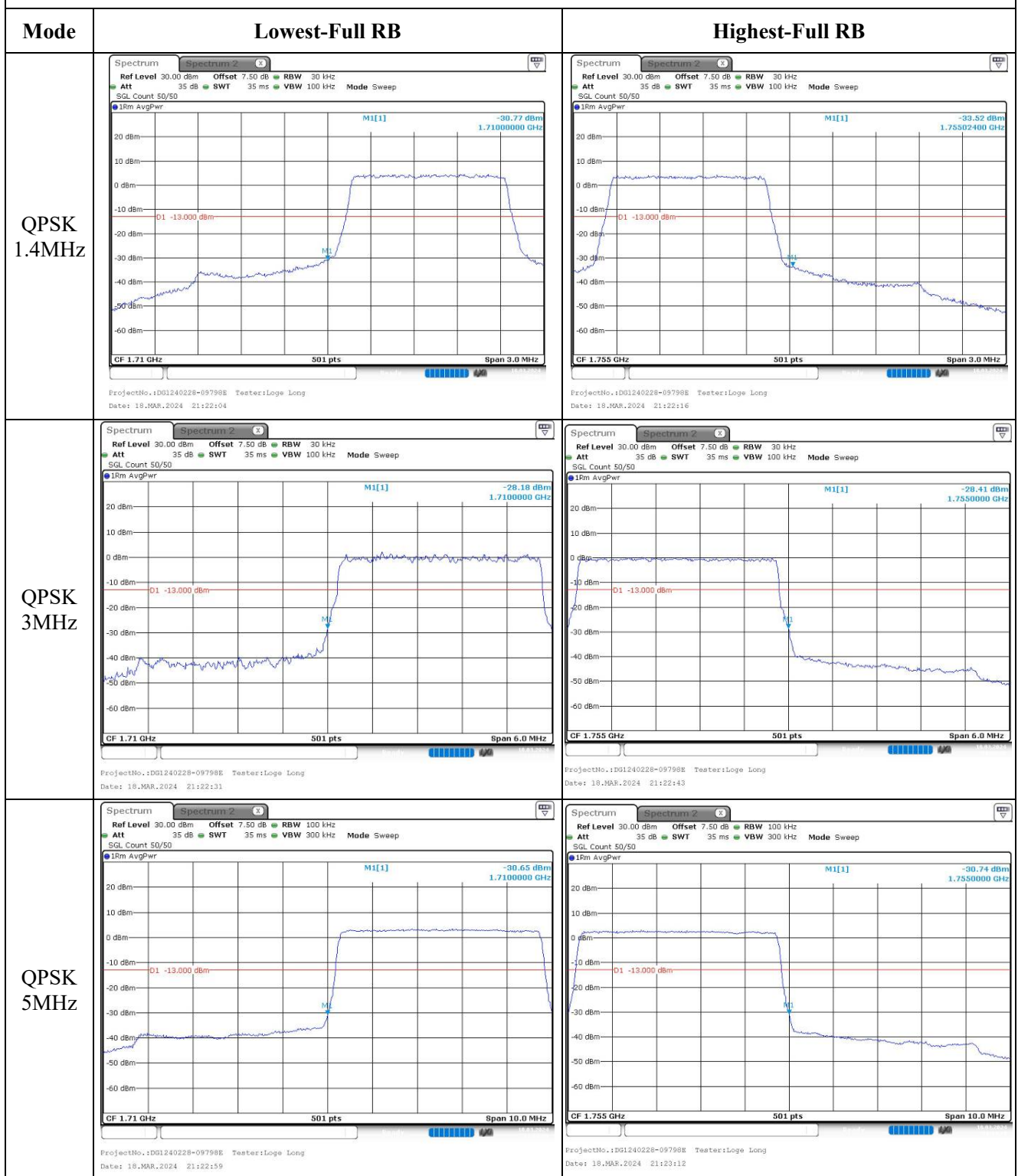
## Out of band emission, Band Edge



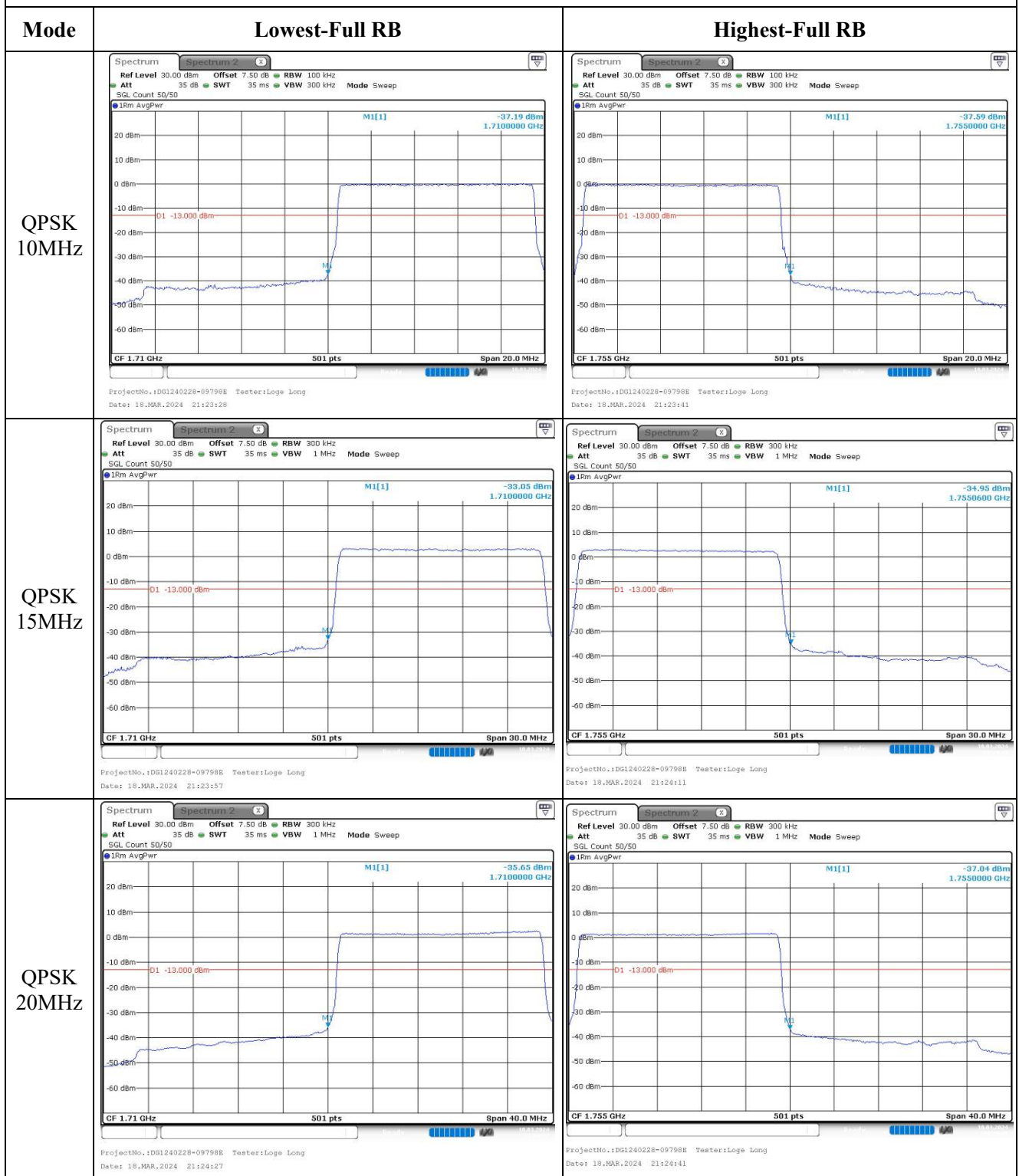
## Out of band emission, Band Edge

| Mode           | Lowest-RB 1#0                                                                                                                                                         | Highest-RB 1#Max                                                                                                                                                       |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16QAM<br>10MHz |  <p>ProjectNo.:DG1240228-09798E Tester:Jeff Wei<br/>Date: 19.MAR.2024 10:09:16</p>   |  <p>ProjectNo.:DG1240228-09798E Tester:Jeff Wei<br/>Date: 19.MAR.2024 11:06:27</p>   |
| 16QAM<br>15MHz |  <p>ProjectNo.:DG1240228-09798E Tester:Jeff Wei<br/>Date: 19.MAR.2024 10:10:32</p>  |  <p>ProjectNo.:DG1240228-09798E Tester:Jeff Wei<br/>Date: 19.MAR.2024 10:11:10</p>  |
| 16QAM<br>20MHz |  <p>ProjectNo.:DG1240228-09798E Tester:Jeff Wei<br/>Date: 19.MAR.2024 10:11:57</p> |  <p>ProjectNo.:DG1240228-09798E Tester:Jeff Wei<br/>Date: 19.MAR.2024 11:10:09</p> |

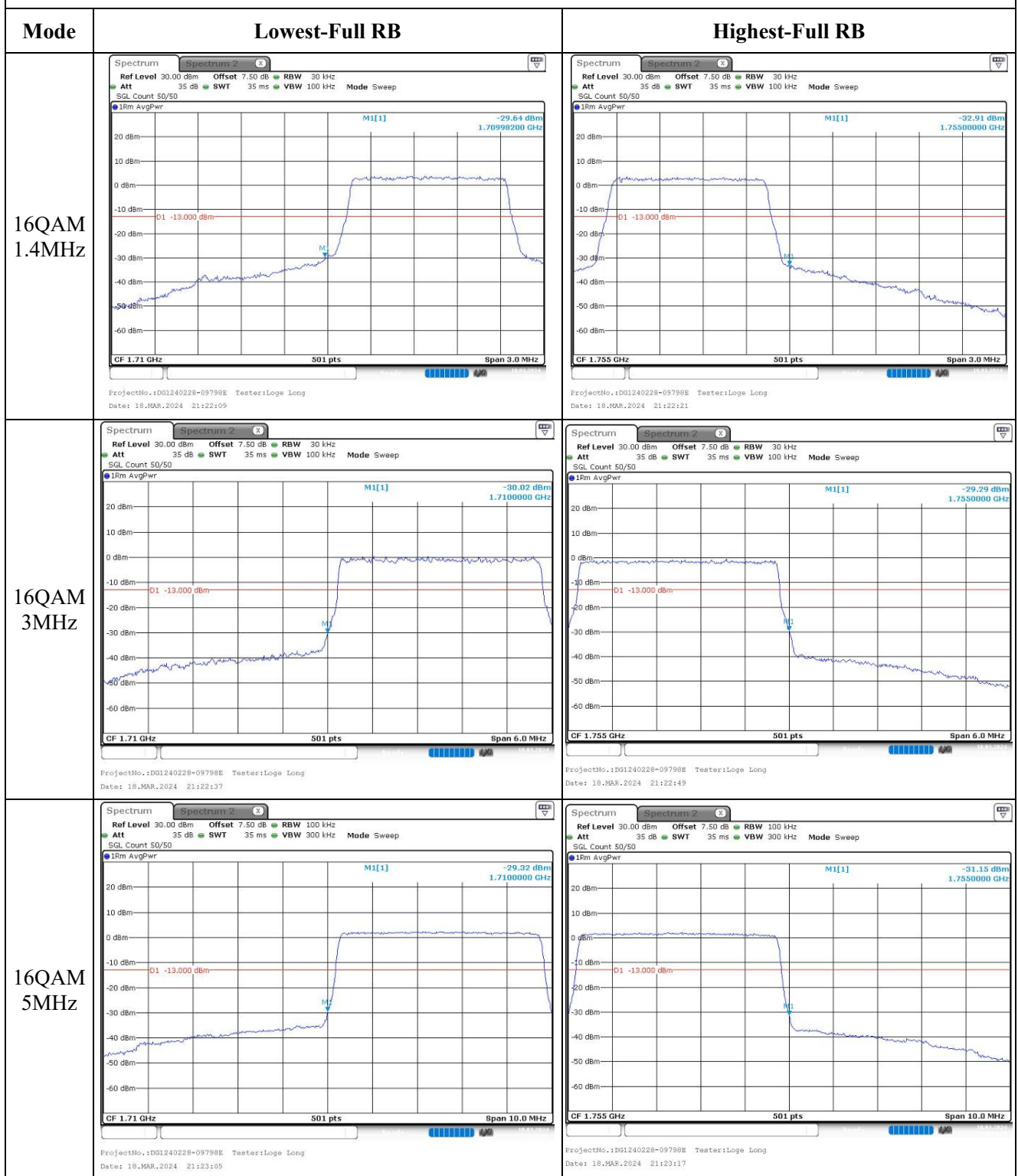
## Out of band emission, Band Edge



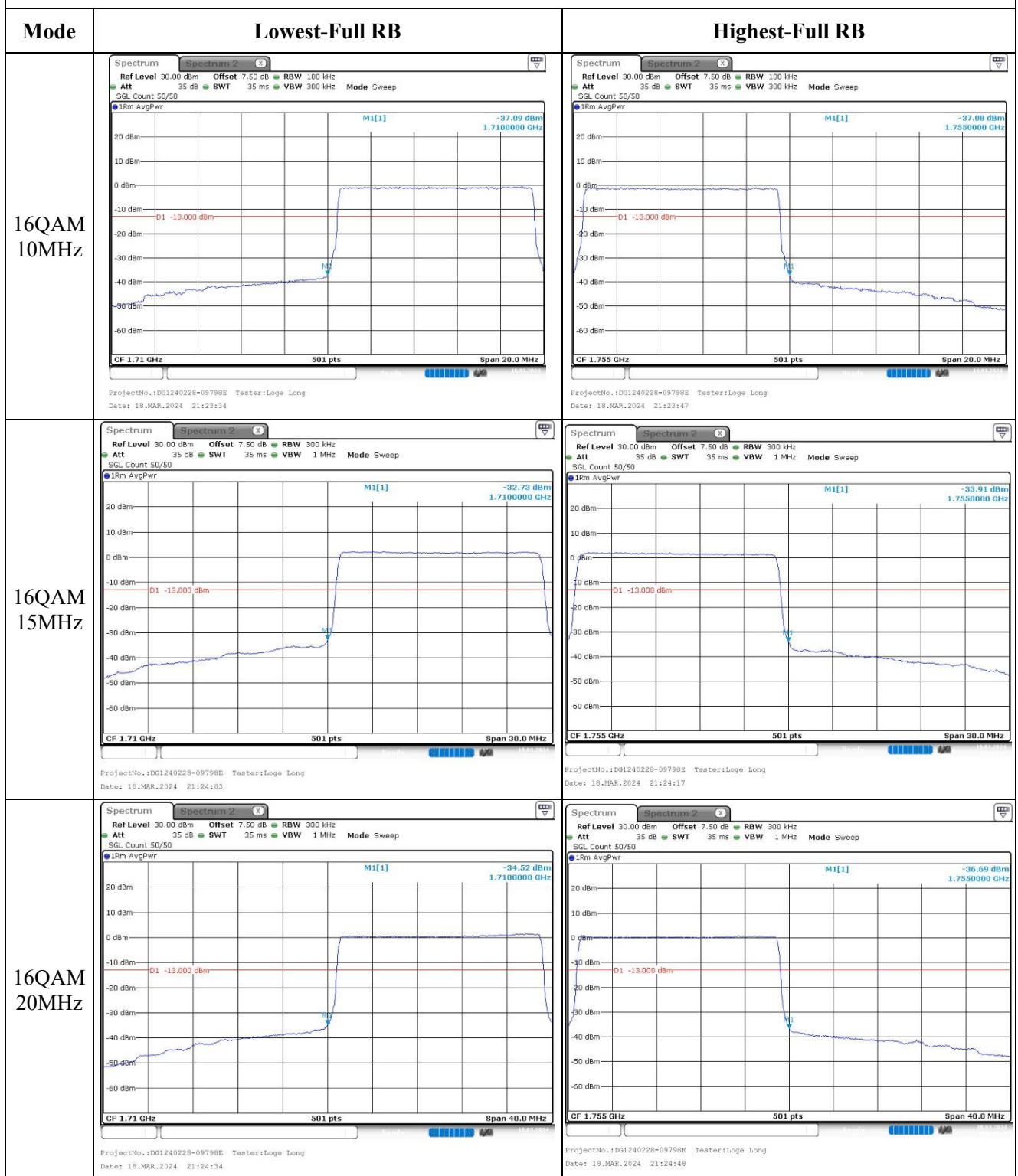
## Out of band emission, Band Edge



## Out of band emission, Band Edge



## Out of band emission, Band Edge



5.6 Antenna Port Test Data and Results for LTE Band 12

|                |                     |              |                     |
|----------------|---------------------|--------------|---------------------|
| Serial Number: | 2145-3              | Test Date:   | 2024/3/18~2024/3/19 |
| Test Site:     | RF                  | Test Mode:   | Transmitting        |
| Tester:        | Loge Long, Jeff Wei | Test Result: | Pass                |

Environmental Conditions:

|                      |           |                           |       |                           |             |
|----------------------|-----------|---------------------------|-------|---------------------------|-------------|
| Temperature:<br>(°C) | 23.4~23.7 | Relative Humidity:<br>(%) | 63~64 | ATM<br>Pressure:<br>(kPa) | 100.9~101.4 |
|----------------------|-----------|---------------------------|-------|---------------------------|-------------|

Test Equipment List and Details:

| Manufacturer  | Description                         | Model         | Serial Number | Calibration Date | Calibration Due Date |
|---------------|-------------------------------------|---------------|---------------|------------------|----------------------|
| Minl-Circuits | Coaxial Power Splitters & Combiner  | ZFRSC-183-S+  | SF448201614   | 2024/2/25        | 2025/2/24            |
| R&S           | Wideband Radio Communication Tester | CMW500        | 149216        | 2023/10/18       | 2024/10/17           |
| BACL          | TEMP&HUMI Test Chamber              | BTH-150-40    | 30173         | 2023/10/18       | 2024/10/17           |
| All-sun       | Clamp Meter                         | EM305A        | 8348897       | 2023/8/3         | 2024/8/2             |
| R&S           | Spectrum Analyzer                   | FSV40         | 101461        | 2023/11/27       | 2024/11/26           |
| TDK-Lambda    | DC Power Supply                     | Z+60-14       | F-08-EM038-1  | N/A              | N/A                  |
| yzjingcheng   | Coaxial Cable                       | KTRFBU-141-50 | 41005011      | 2023/9/1         | 2024/8/31            |
| Unknown       | Coaxial Cable                       | C-SJ00-0010   | C0010/01      | 2023/9/1         | 2024/8/31            |

\* Statement of Traceability: Bay Area Compliance Laboratories Corp. (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              | 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                      | 22.84                               | 22.93          | 23.09           | 19.26             | 34.77           |
|                             | RB1#3                      | 22.96                               | 23             | 23              |                   |                 |
|                             | RB1#5                      | 22.99                               | 22.98          | 23.02           |                   |                 |
|                             | RB3#0                      | 23                                  | 22.98          | 22.89           |                   |                 |
|                             | RB3#3                      | 23                                  | 22.94          | 22.88           |                   |                 |
|                             | RB6#0                      | 21.9                                | 21.9           | 21.97           |                   |                 |
| 1.4MHz 16QAM                | RB1#0                      | 22.57                               | 22.57          | 22.1            | 18.83             | 34.77           |
|                             | RB1#3                      | 22.51                               | 22.49          | 21.9            |                   |                 |
|                             | RB1#5                      | 22.66                               | 22.54          | 22.07           |                   |                 |
|                             | RB3#0                      | 21.84                               | 21.9           | 21.97           |                   |                 |
|                             | RB3#3                      | 21.96                               | 21.86          | 21.92           |                   |                 |
|                             | RB6#0                      | 20.86                               | 21.1           | 20.97           |                   |                 |
| 3MHz QPSK                   | RB1#0                      | 23.07                               | 22.9           | 22.81           | 19.24             | 34.77           |
|                             | RB1#8                      | 22.93                               | 22.94          | 22.85           |                   |                 |
|                             | RB1#14                     | 22.93                               | 22.98          | 22.9            |                   |                 |
|                             | RB6#0                      | 21.91                               | 21.99          | 22.01           |                   |                 |
|                             | RB6#9                      | 21.87                               | 21.81          | 21.91           |                   |                 |
|                             | RB15#0                     | 21.94                               | 21.91          | 21.94           |                   |                 |
| 3MHz 16QAM                  | RB1#0                      | 22.82                               | 21.9           | 22.68           | 18.99             | 34.77           |
|                             | RB1#8                      | 22.57                               | 21.92          | 22.65           |                   |                 |
|                             | RB1#14                     | 22.82                               | 21.93          | 22.6            |                   |                 |
|                             | RB6#0                      | 20.92                               | 21.14          | 20.93           |                   |                 |
|                             | RB6#9                      | 20.83                               | 21.21          | 20.86           |                   |                 |
|                             | RB15#0                     | 20.82                               | 21.04          | 21.01           |                   |                 |
| 5MHz QPSK                   | RB1#0                      | 23.07                               | 22.73          | 22.8            | 19.24             | 34.77           |
|                             | RB1#13                     | 22.94                               | 22.82          | 22.78           |                   |                 |
|                             | RB1#24                     | 22.97                               | 22.67          | 22.74           |                   |                 |
|                             | RB15#0                     | 21.99                               | 21.87          | 21.79           |                   |                 |
|                             | RB15#10                    | 21.88                               | 21.89          | 22.01           |                   |                 |
|                             | RB25#0                     | 21.89                               | 21.94          | 21.92           |                   |                 |
| 5MHz 16QAM                  | RB1#0                      | 22.44                               | 22.24          | 21.63           | 18.61             | 34.77           |
|                             | RB1#13                     | 22.3                                | 22.2           | 21.64           |                   |                 |
|                             | RB1#24                     | 22.3                                | 22.23          | 21.52           |                   |                 |
|                             | RB15#0                     | 20.64                               | 20.83          | 20.93           |                   |                 |
|                             | RB15#10                    | 20.67                               | 20.87          | 20.94           |                   |                 |
|                             | RB25#0                     | 20.67                               | 20.85          | 21.08           |                   |                 |
| 10MHz QPSK                  | RB1#0                      | 22.96                               | 22.93          | 22.8            | 19.19             | 34.77           |
|                             | RB1#25                     | 23.02                               | 22.9           | 22.81           |                   |                 |
|                             | RB1#49                     | 23.02                               | 22.9           | 22.89           |                   |                 |

|             |         |       |       |       |       |       |
|-------------|---------|-------|-------|-------|-------|-------|
| 10MHz 16QAM | RB25#0  | 21.9  | 21.92 | 21.83 | 19.34 | 34.77 |
|             | RB25#25 | 21.92 | 21.88 | 21.96 |       |       |
|             | RB50#0  | 21.93 | 21.88 | 21.81 |       |       |
|             | RB1#0   | 23.11 | 22.03 | 22.77 |       |       |
|             | RB1#25  | 23.17 | 22.02 | 22.58 |       |       |
|             | RB1#49  | 22.99 | 21.94 | 22.68 |       |       |
|             | RB25#0  | 20.78 | 21.15 | 21.04 |       |       |
|             | RB25#25 | 21.05 | 21.03 | 20.95 |       |       |
|             | RB50#0  | 21.42 | 21.06 | 20.94 |       |       |

Note:

ERP= Conducted Power(dBm) - Lc(dB) + Gr(dBd)

Gr(dBd)=Gr(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                      | 5.19                      | 5.16           | 5.3             | 13          |
|                             | RB50#0                     | 5.28                      | 5.51           | 5.39            | 13          |
| 10MHz 16QAM                 | RB1#0                      | 5.97                      | 5.62           | 5.86            | 13          |
|                             | RB50#0                     | 6.17                      | 6.41           | 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 |
| 1.4MHz QPSK    | 1.102                        | 1.096          | 1.102        | 1.26                           | 1.248          | 1.254        |
| 1.4MHz 16QAM   | 1.102                        | 1.102          | 1.096        | 1.254                          | 1.266          | 1.254        |
| 3MHz QPSK      | 2.695                        | 2.695          | 2.707        | 3.012                          | 3.012          | 3            |
| 3MHz 16QAM     | 2.683                        | 2.695          | 2.683        | 3                              | 3.024          | 2.988        |
| 5MHz QPSK      | 4.511                        | 4.531          | 4.511        | 5.02                           | 4.98           | 4.98         |
| 5MHz 16QAM     | 4.531                        | 4.531          | 4.511        | 5                              | 5.02           | 4.98         |
| 10MHz QPSK     | 8.942                        | 8.982          | 8.982        | 9.8                            | 9.84           | 9.8          |
| 10MHz 16QAM    | 8.942                        | 8.982          | 8.982        | 9.8                            | 9.84           | 9.72         |

Note: Test was performed at full RB. The test plots please refer to the Plots of Occupied Bandwidth

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

|                |                                                                                                                     |
|----------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Result:</b> | <b>Pass, Test was performed at RB1#0, please refer to the test plots of Spurious Emissions at Antenna Terminal.</b> |
|----------------|---------------------------------------------------------------------------------------------------------------------|

**FCC §2.1051, §27.53: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, §27.54: Frequency Stability**

| Test Mode:                          | 10M 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                                                        | 699.478          | 699.00 | 715.487          | 716.00 |
|                                     | -20              | 3.8                                                        | 699.508          | 699.00 | 715.490          | 716.00 |
|                                     | -10              | 3.8                                                        | 699.526          | 699.00 | 715.508          | 716.00 |
|                                     | 0                | 3.8                                                        | 699.517          | 699.00 | 715.493          | 716.00 |
|                                     | 10               | 3.8                                                        | 699.505          | 699.00 | 715.484          | 716.00 |
|                                     | 20               | 3.8                                                        | 699.529          | 699.00 | 715.511          | 716.00 |
|                                     | 30               | 3.8                                                        | 699.538          | 699.00 | 715.532          | 716.00 |
|                                     | 40               | 3.8                                                        | 699.541          | 699.00 | 715.523          | 716.00 |
|                                     | 50               | 3.8                                                        | 699.547          | 699.00 | 715.538          | 716.00 |
| Frequency Stability vs. Voltage     | 20               | 3.6                                                        | 699.556          | 699.00 | 715.526          | 716.00 |
|                                     | 20               | 4.35                                                       | 699.538          | 699.00 | 715.529          | 716.00 |
| <b>Result:</b>                      |                  |                                                            |                  |        | <b>Pass</b>      |        |

| Test Mode:                          | 10M 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                                                        | 699.508          | 699.00 | 715.499          | 716.00 |
|                                     | -20              | 3.8                                                        | 699.517          | 699.00 | 715.496          | 716.00 |
|                                     | -10              | 3.8                                                        | 699.508          | 699.00 | 715.487          | 716.00 |
|                                     | 0                | 3.8                                                        | 699.505          | 699.00 | 715.484          | 716.00 |
|                                     | 10               | 3.8                                                        | 699.526          | 699.00 | 715.496          | 716.00 |
|                                     | 20               | 3.8                                                        | 699.529          | 699.00 | 715.511          | 716.00 |
|                                     | 30               | 3.8                                                        | 699.532          | 699.00 | 715.535          | 716.00 |
|                                     | 40               | 3.8                                                        | 699.532          | 699.00 | 715.529          | 716.00 |
|                                     | 50               | 3.8                                                        | 699.550          | 699.00 | 715.529          | 716.00 |
| Frequency Stability vs. Voltage     | 20               | 3.6                                                        | 699.553          | 699.00 | 715.514          | 716.00 |
|                                     | 20               | 4.35                                                       | 699.550          | 699.00 | 715.532          | 716.00 |
| <b>Result:</b>                      |                  |                                                            |                  |        | <b>Pass</b>      |        |

## Test Plots:

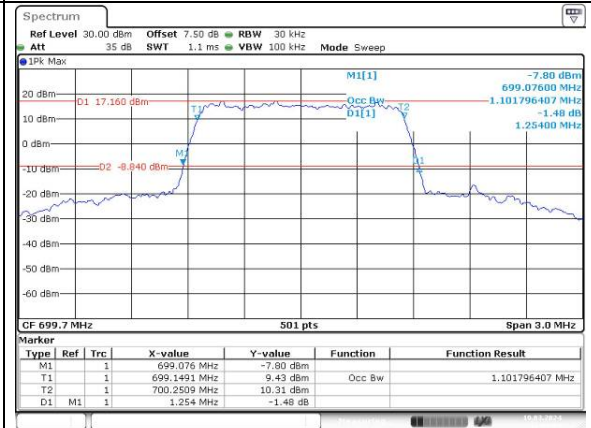
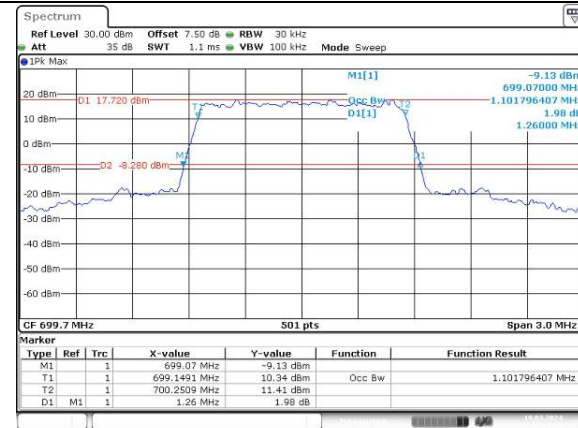
## Occupied Bandwidth

## Channel

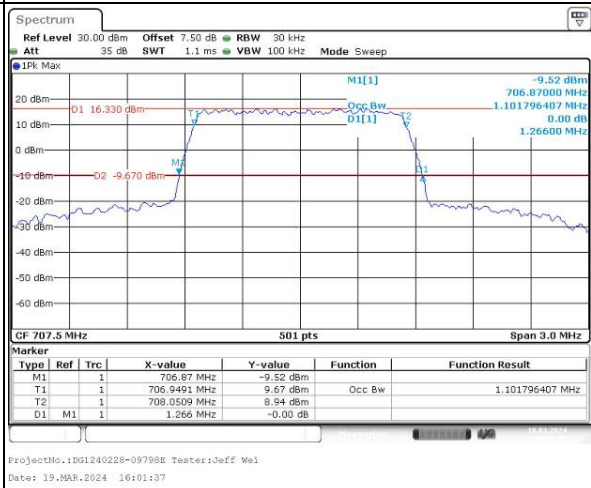
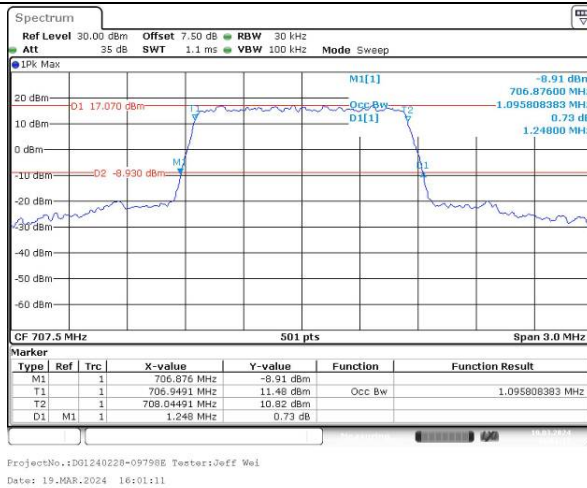
1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

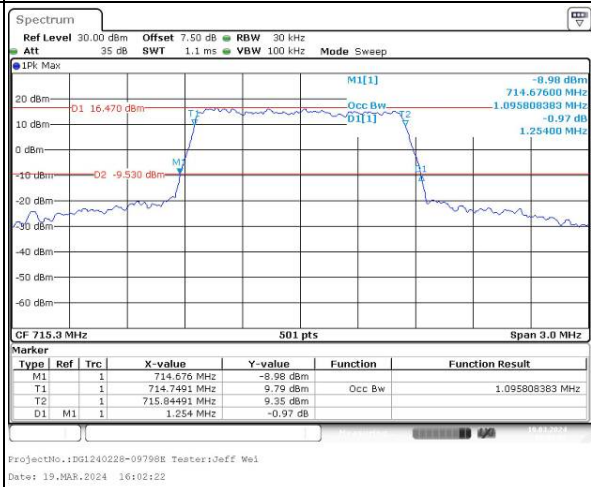
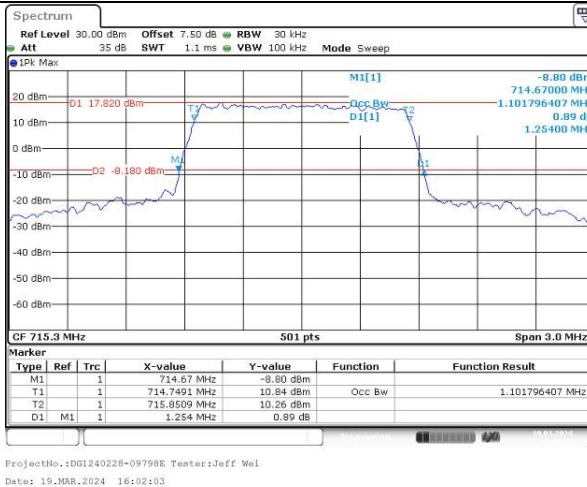
Lowest



Middle



Highest



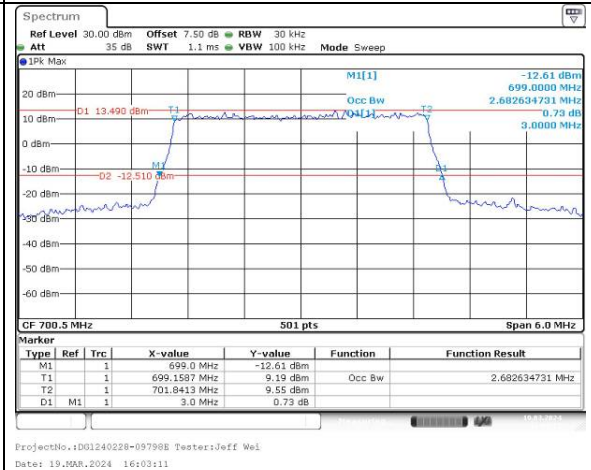
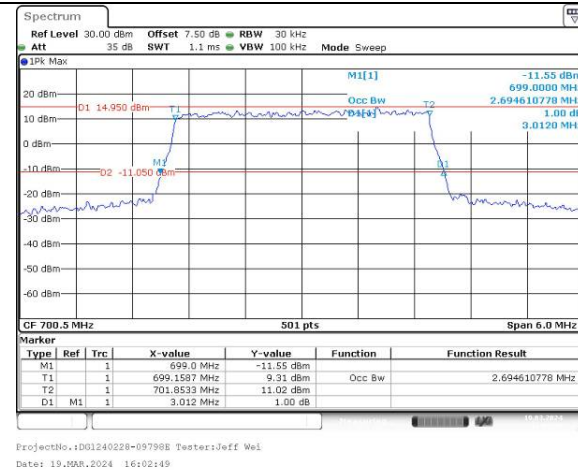
## Occupied Bandwidth

## Channel

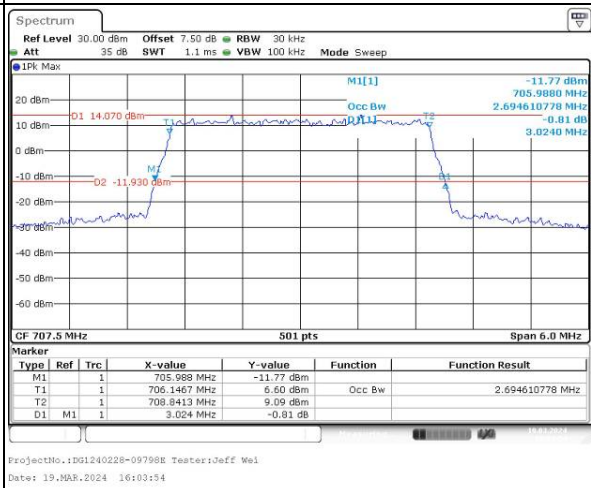
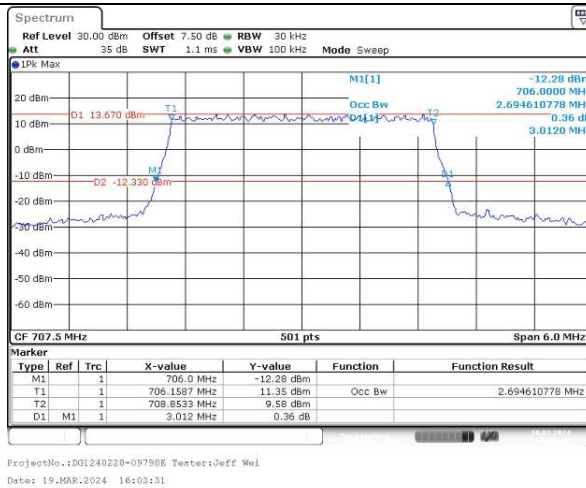
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

Lowest



Middle



Highest

