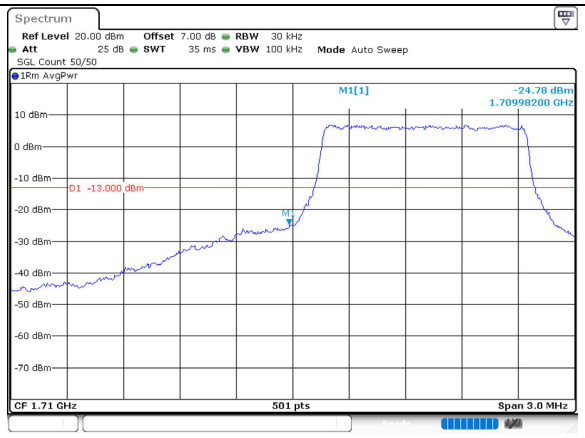
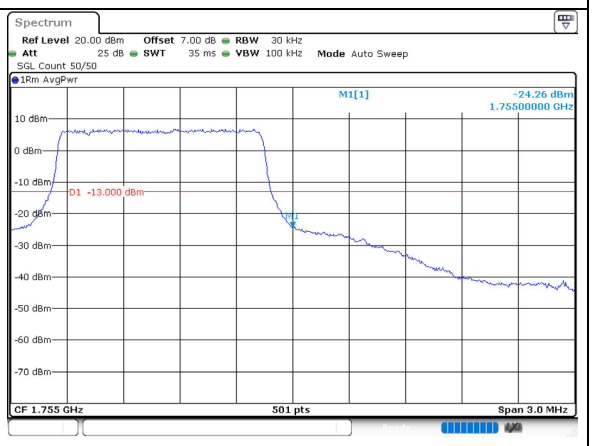
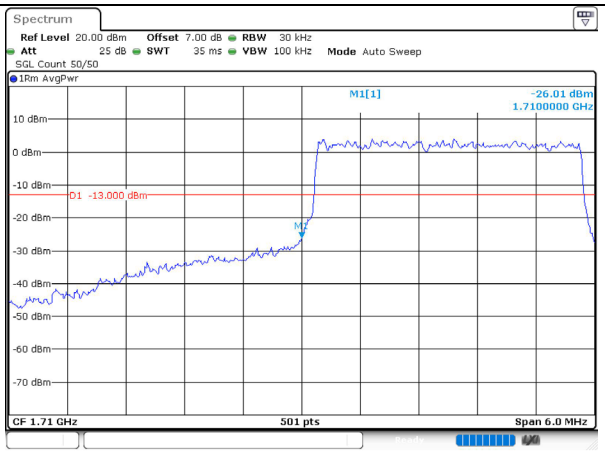
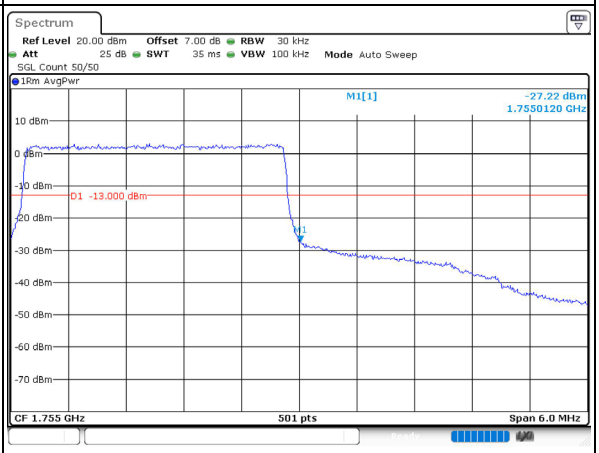
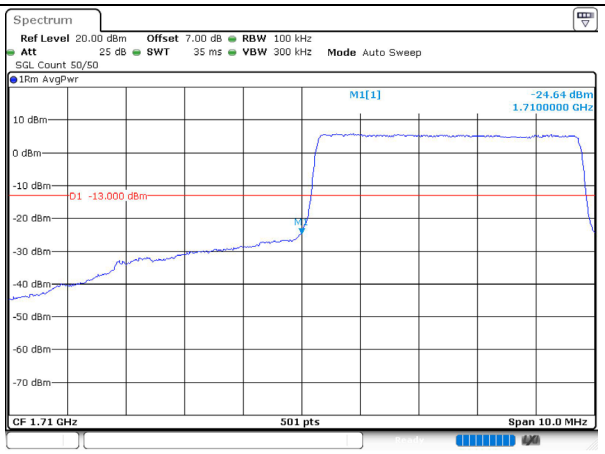
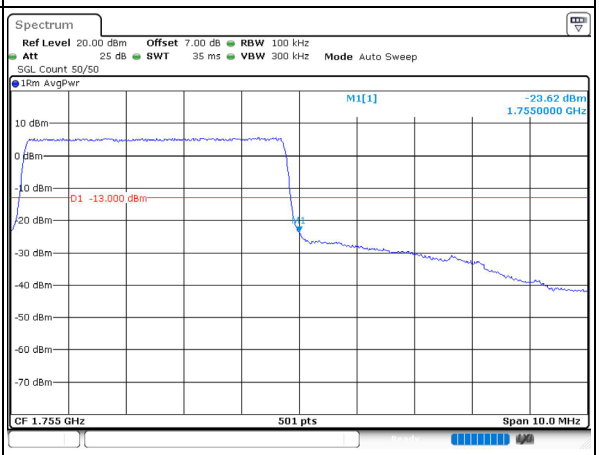
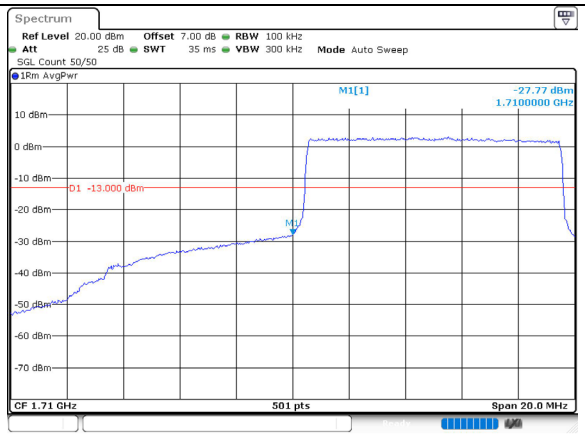
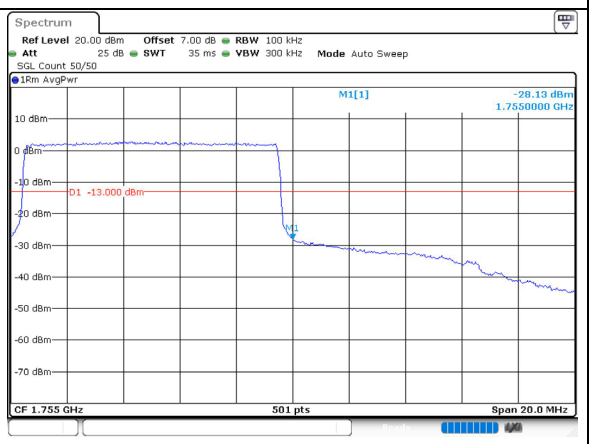
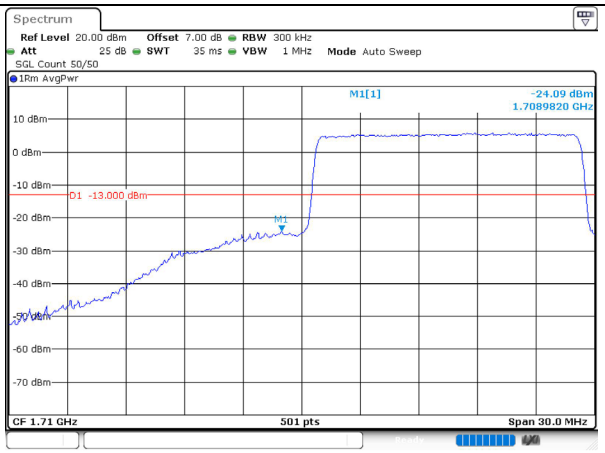
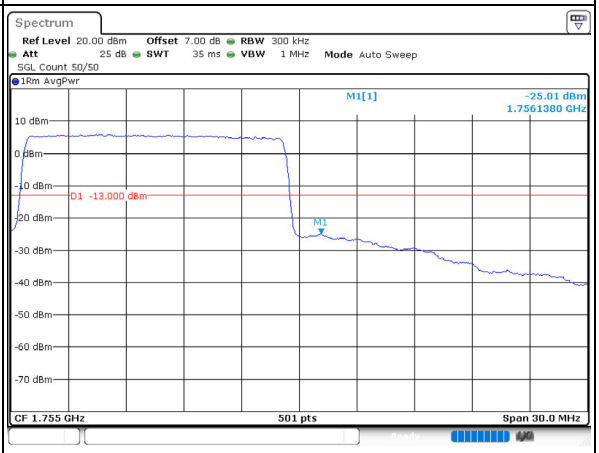
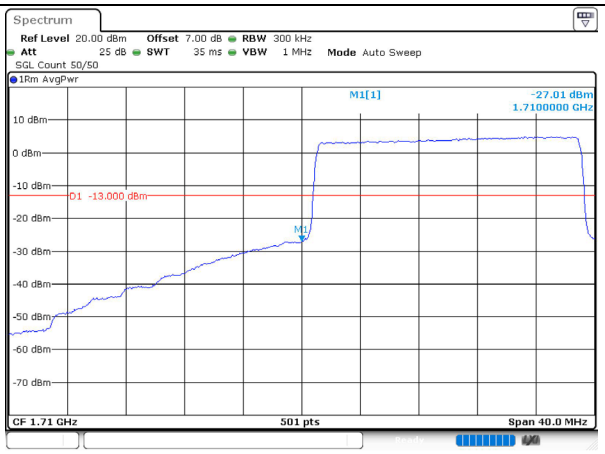
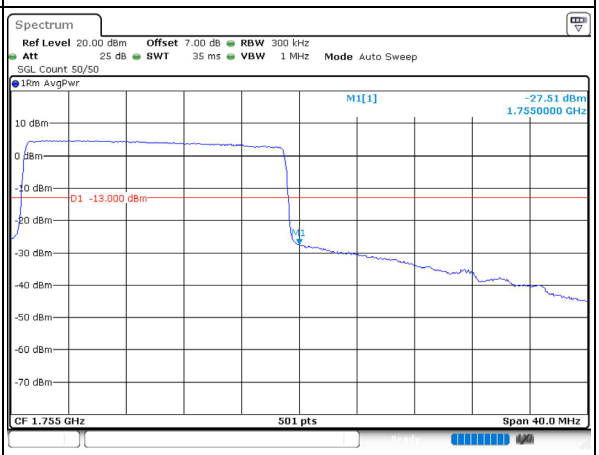
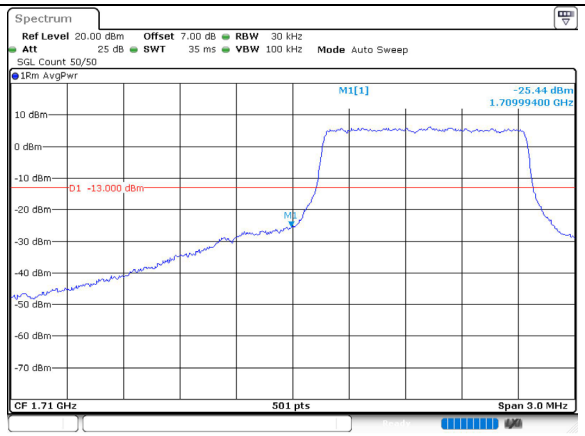
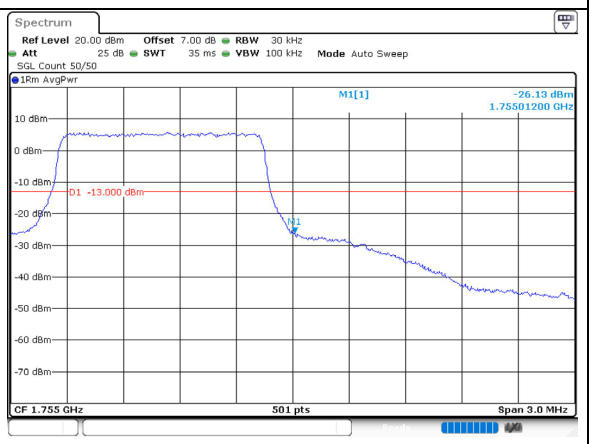
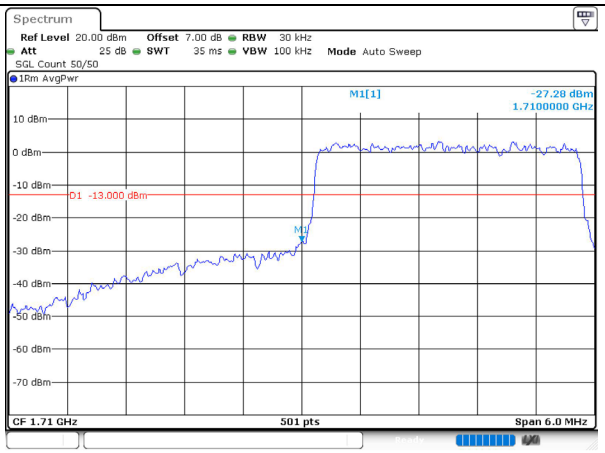
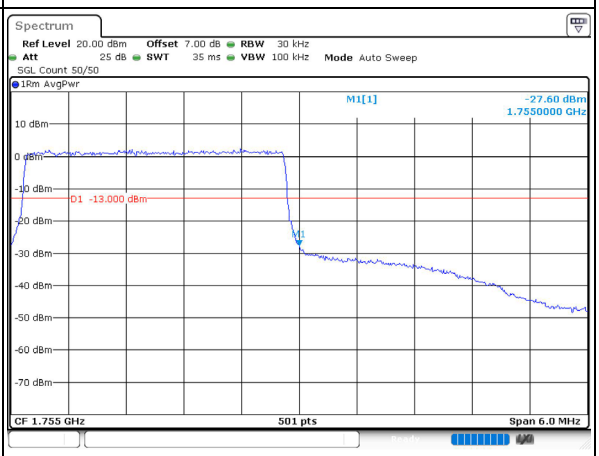
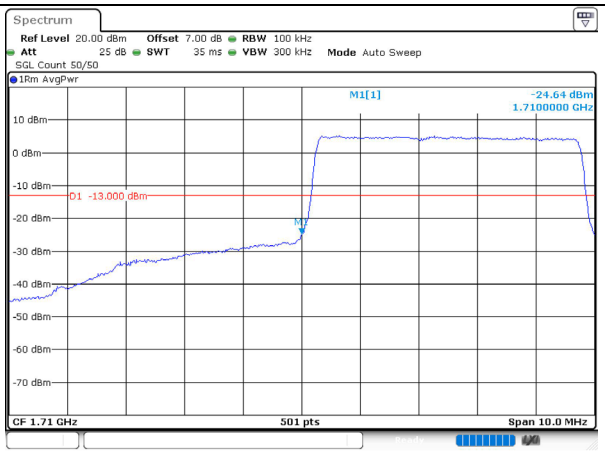
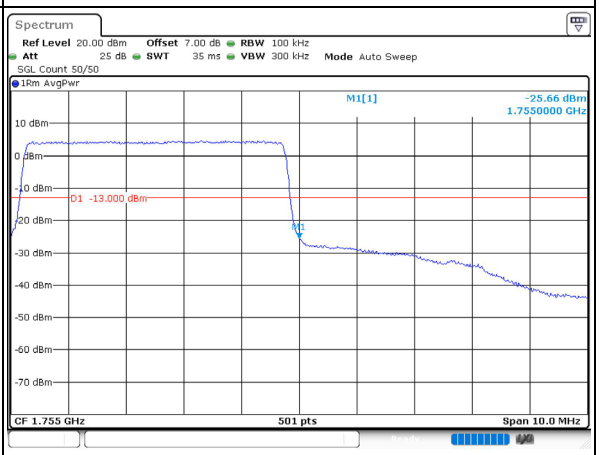
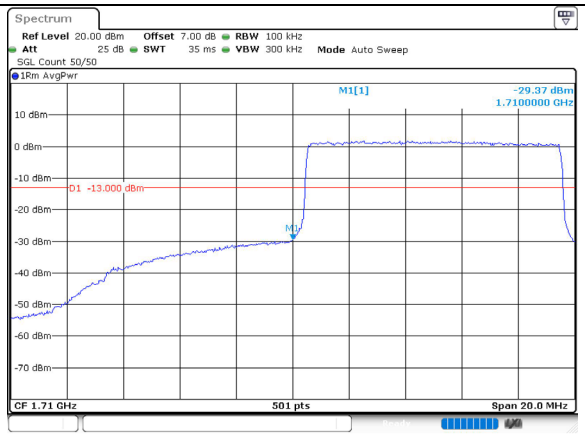
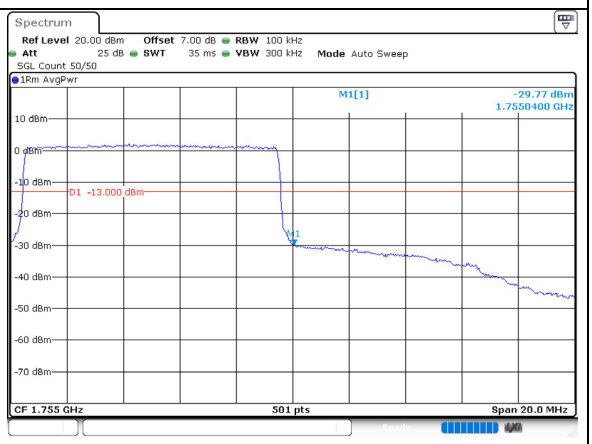
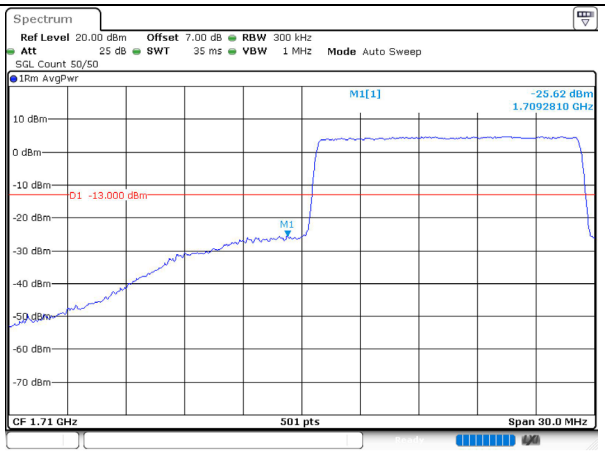
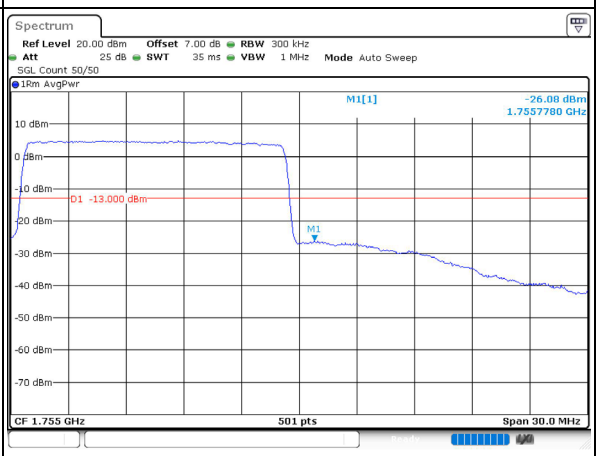
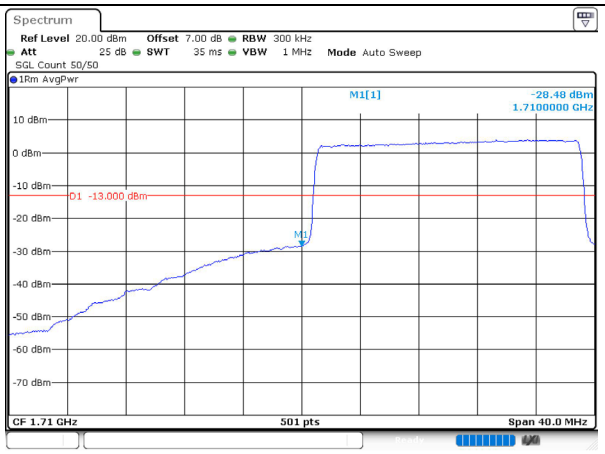
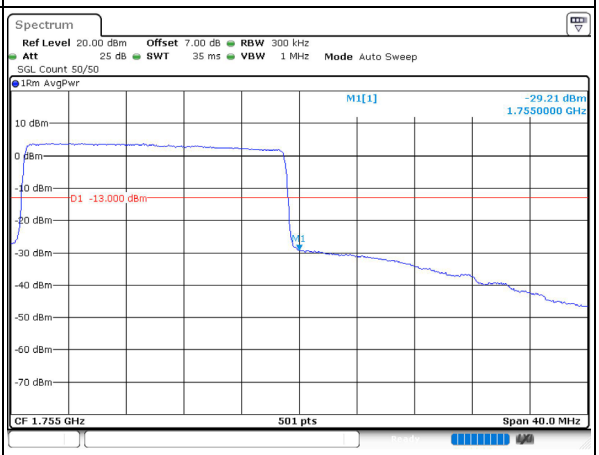
| Out of band emission, Band Edge | | |
|---|---|---|
| **Mode** | **Lowest** | **Highest** |
| QPSK 1.4MHz |  |  |
| QPSK 3MHz |  |  |
| QPSK 5MHz |  |  |

| Out of band emission, Band Edge | | |
|---|---|---|
| **Mode** | **Lowest** | **Highest** |
| QPSK 10MHz |  |  |
| QPSK 15MHz |  |  |
| QPSK 20MHz |  |  |

| Out of band emission, Band Edge | | |
|---|---|---|
| **Mode** | **Lowest** | **Highest** |
| 16QAM 1.4MHz |  |  |
| 16QAM 3MHz |  |  |
| 16QAM 5MHz |  |  |

| Out of band emission, Band Edge | | |
|---|---|---|
| **Mode** | **Lowest** | **Highest** |
| 16QAM 10MHz |  |  |
| 16QAM 15MHz |  |  |
| 16QAM 20MHz |  |  |

## 4.7 Antenna Port Test Data and Results for LTE Band 5

| | | | |
|---|---|---|---|
| Serial Number: | 2C04-3 | Test Date: | 2023/10/29-2023/11/2 |
| Test Site: | RF | Test Mode: | Transmitting |
| Tester: | Claire Liu | Test Result: | **Pass** |

| **Environmental Conditions:** | | | | | |
|---|---|---|---|---|---|
| Temperature: (℃) | 24.3-25.6 | Relative Humidity: (%) | 45-58 | ATM Pressure: (kPa) | 101-101.54 |

**Test Equipment List and Details:**

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| R&S | Spectrum Analyzer | FSV40 | 101590 | 2022/11/23 | 2023/11/24 |
| zhuoxiang | Coaxial Cable | SMA-178 | 211003 | Each time | N/A |
| YINSAIGE | Coaxial Cable | SS402 | SJ0100001 | Each time | N/A |
| eastsheep | Coaxial Attenuator | 2W-SMA-JK-18G | 21060301 | Each time | N/A |
| Unknown | Coaxial tee connector | Unknown | 2204004 | Each time | N/A |
| R&S | Wideband Radio Communication Tester | CMW500 | 143458 | 2023/3/31 | 2024/3/30 |
| BACL | TEMP&HUMI Test Chamber | BTH-150-40 | 30174 | 2023/3/31 | 2024/3/30 |
| UNI-T | Multimeter | UT39A+ | C210582554 | 2023/9/28 | 2024/9/27 |
| ZHAOXIN | DC Power Supply | RXN-6010D | 21R6010D0912386 | N/A | 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:**

| 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 | 23.53 | 23.04 | 23.14 | 21.09 | 38.45 |
| | RB1#3 | **23.71** | 23.11 | 23.51 | | |
| | RB1#5 | 23.51 | 22.98 | 23.25 | | |
| | RB3#0 | 23.22 | 23.29 | 23.2 | | |
| | RB3#3 | 23.21 | 23.16 | 23.53 | | |
| | RB6#0 | 22.21 | 22.22 | 22.31 | | |
| 1.4MHz 16QAM | RB1#0 | 22.08 | 22.53 | 22.21 | 20.54 | 38.45 |
| | RB1#3 | 22.83 | 22.86 | 22.27 | | |
| | RB1#5 | 22.28 | **23.16** | 22.28 | | |
| | RB3#0 | 22.35 | 22.4 | 22.34 | | |
| | RB3#3 | 22.32 | 22.47 | 22.17 | | |
| | RB6#0 | 21.45 | 21.2 | 21.06 | | |
| 3MHz QPSK | RB1#0 | 23.33 | 23.35 | 23.27 | 20.83 | 38.45 |
| | RB1#8 | 23.18 | 23.1 | 23.2 | | |
| | RB1#14 | 23.38 | **23.45** | 23.15 | | |
| | RB6#0 | 22.3 | 22.14 | 22.19 | | |
| | RB6#9 | 22.14 | 22.2 | 22.11 | | |
| | RB15#0 | 22.3 | 22.11 | 22.21 | | |
| 3MHz 16QAM | RB1#0 | 22.54 | **22.58** | 21.99 | 19.96 | 38.45 |
| | RB1#8 | 22.42 | 22.35 | 21.82 | | |
| | RB1#14 | 22.06 | 22.42 | 22.19 | | |
| | RB6#0 | 21.26 | 20.86 | 21.27 | | |
| | RB6#9 | 21.21 | 21.26 | 20.96 | | |
| | RB15#0 | 21.27 | 20.97 | 21.1 | | |
| 5MHz QPSK | RB1#0 | **23.4** | 22.94 | 22.98 | 20.78 | 38.45 |
| | RB1#13 | 23.22 | 22.95 | 23.23 | | |
| | RB1#24 | 23.08 | 23.2 | 23.2 | | |
| | RB15#0 | 22.25 | 22.17 | 22.22 | | |
| | RB15#10 | 22.13 | 22.12 | 22.12 | | |
| | RB25#0 | 22.24 | 22.01 | 22.31 | | |
| 5MHz 16QAM | RB1#0 | 21.78 | 22.44 | 22.07 | 19.87 | 38.45 |
| | RB1#13 | 21.45 | **22.49** | 21.66 | | |
| | RB1#24 | 21.68 | 21.91 | 22.09 | | |
| | RB15#0 | 21.29 | 21.05 | 21.26 | | |
| | RB15#10 | 21.07 | 20.92 | 21.25 | | |
| | RB25#0 | 21.41 | 20.98 | 21.2 | | |
| 10MHz QPSK | RB1#0 | **23.58** | 23.06 | 22.98 | 20.96 | 38.45 |
| | RB1#25 | 23.25 | 23.42 | 23.17 | | |
| | RB1#49 | 23.43 | 23.37 | 23.01 | | |
| | RB25#0 | 22.24 | 22.24 | 22.01 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | RB25#25 | 22.24 | 22.29 | 22.2 | | |
| | RB50#0 | 22.3 | 22.19 | 22.03 | | |
| 10MHz 16QAM | RB1#0 | 22.28 | 22.42 | 22.33 | 20.28 | 38.45 |
| | RB1#25 | 22.04 | 22.58 | **22.9** | | |
| | RB1#49 | 22.23 | 22.5 | 22.33 | | |
| | RB25#0 | 21.21 | 21.11 | 21.1 | | |
| | RB25#25 | 21.41 | 21.26 | 21.22 | | |
| | RB50#0 | 21.3 | 21.04 | 20.98 | | |

Note:
ERP= Conducted Power(dBm) - $L_C$(dB) + $G_T$(dBd)
$G_T$(dBd)=$G_T$(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 | 4.26 | 3.62 | 4.09 | 13 |
| | RB50#0 | 4.58 | 4.52 | 4.58 | 13 |
| 10MHz 16QAM | RB1#0 | 5.25 | 4.67 | 4.87 | 13 |
| | RB50#0 | 5.71 | 5.59 | 5.65 | 13 |
| | | | | **Result:** | **Pass** |

**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 | 1.102 | 1.102 | 1.302 | 1.314 | 1.314 |
| 1.4MHz 16QAM | 1.102 | 1.096 | 1.102 | 1.314 | 1.296 | 1.308 |
| 3MHz QPSK | 2.695 | 2.695 | 2.683 | 2.94 | 2.94 | 2.964 |
| 3MHz 16QAM | 2.695 | 2.683 | 2.683 | 2.964 | 2.952 | 2.964 |
| 5MHz QPSK | 4.531 | 4.511 | 4.511 | 5.06 | 5.04 | 5.02 |
| 5MHz 16QAM | 4.511 | 4.531 | 4.531 | 4.98 | 5.04 | 5.06 |
| 10MHz QPSK | 8.942 | 8.942 | 8.902 | 9.72 | 9.72 | 9.72 |
| 10MHz 16QAM | 8.942 | 8.942 | 8.902 | 9.6 | 9.72 | 9.64 |

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

**Spurious Emissions at Antenna Terminal**

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

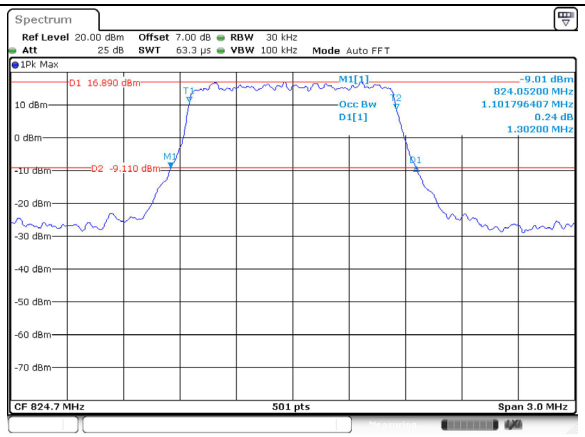
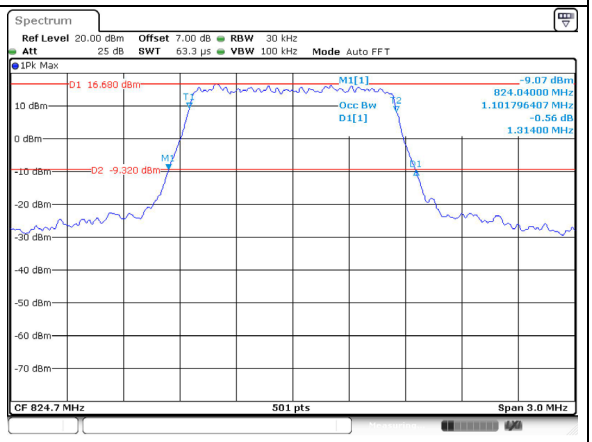
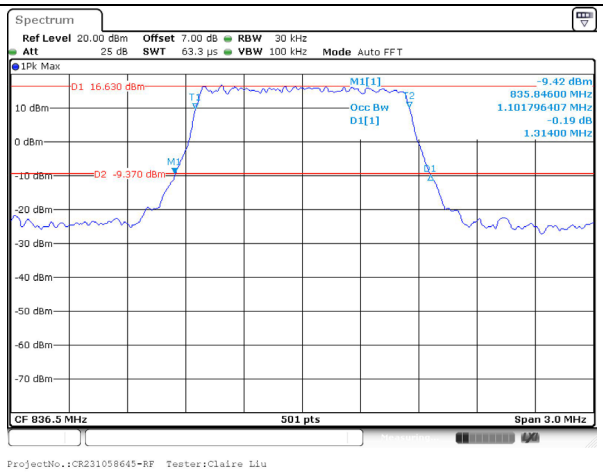
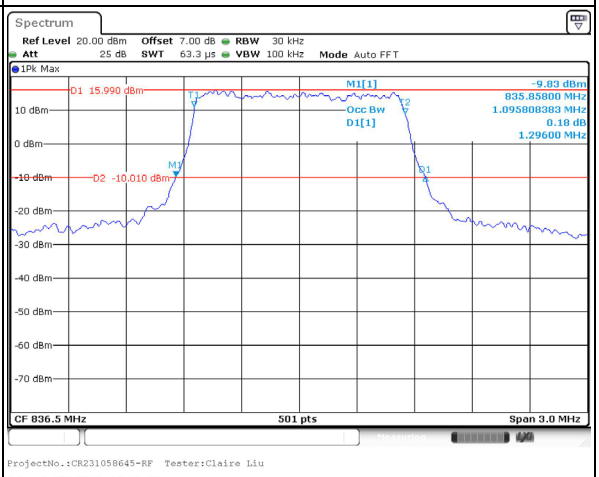
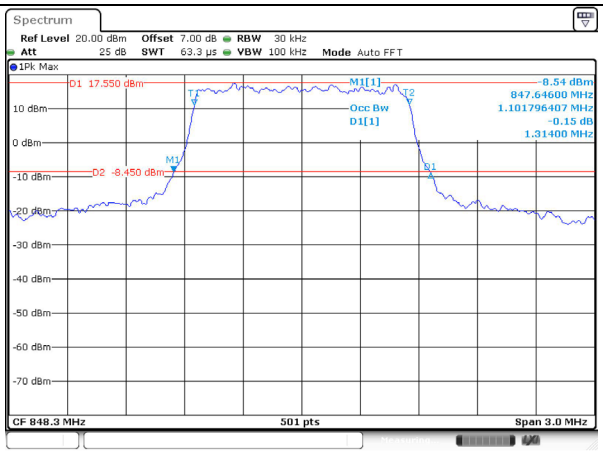
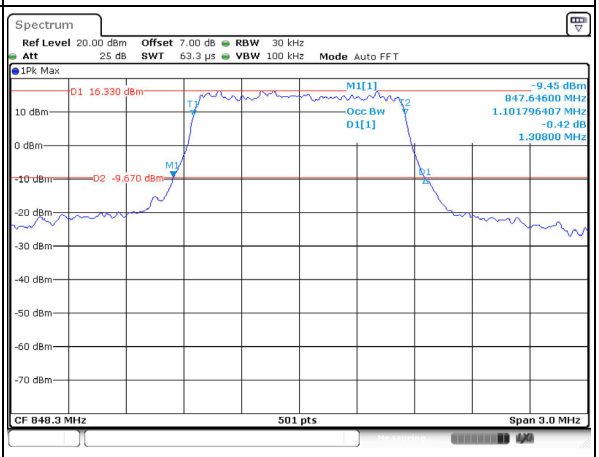
**Out of band emission, Band Edge**

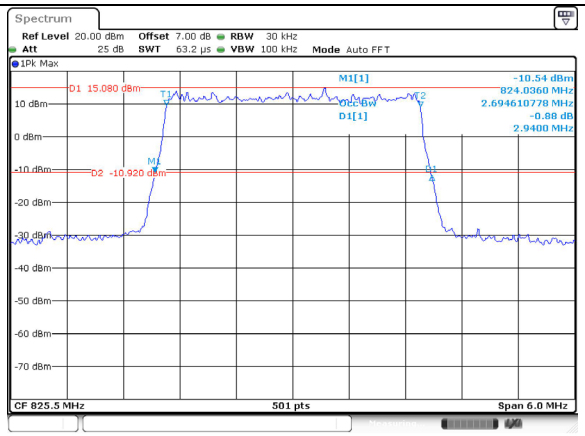
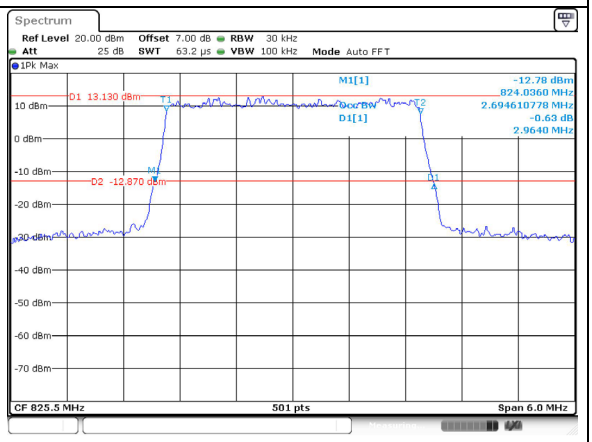
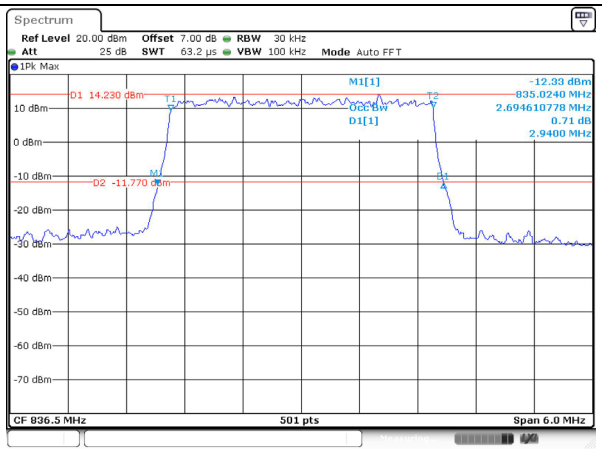
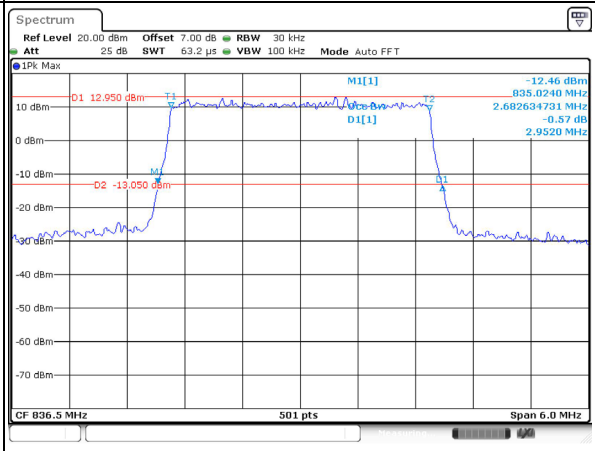
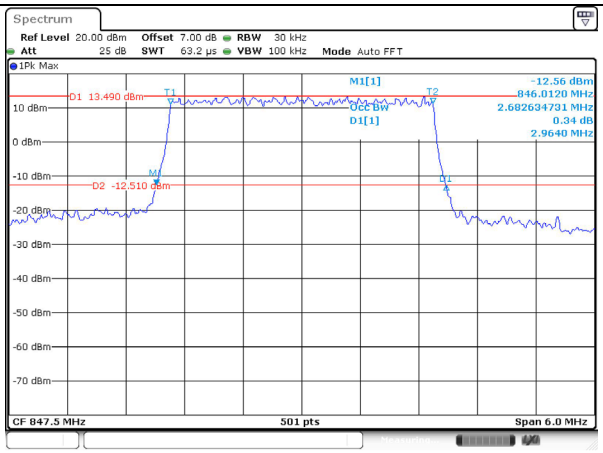
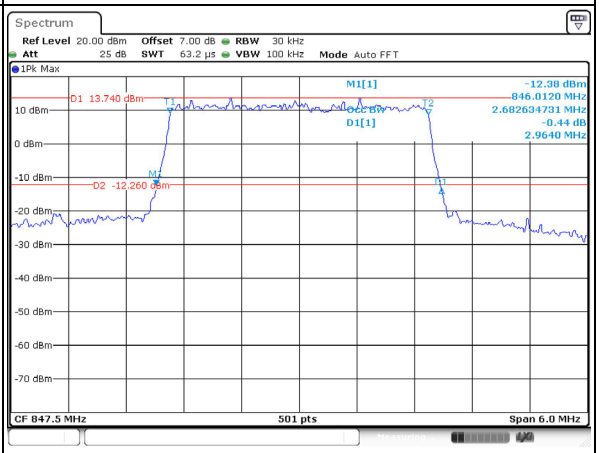
| | |
|---|---|
| **Result:** | **Pass, Please refer to the test plots of Out of band emission, Band Edge.** |

| **Frequency Stability** | | | | | |
|---|---|---|---|---|---|
| Test Modulation: | 10 MHz QPSK | | Test Channel: | 836.5 | MHz |
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Frequency Error | | Limit |
| | | | (Hz) | (ppm) | (ppm) |
| Frequency Stability vs. Temperature | -30 | 7.6 | -2.64 | -0.003 | 2.5 |
| | -20 | 7.6 | 0.64 | 0.001 | 2.5 |
| | -10 | 7.6 | -2.9 | -0.003 | 2.5 |
| | 0 | 7.6 | -2.52 | -0.003 | 2.5 |
| | 10 | 7.6 | -1.01 | -0.001 | 2.5 |
| | 20 | 7.6 | -1.24 | -0.001 | 2.5 |
| | 30 | 7.6 | -0.84 | -0.001 | 2.5 |
| | 40 | 7.6 | 0.59 | 0.001 | 2.5 |
| | 50 | 7.6 | -3.33 | -0.004 | 2.5 |
| Frequency Stability vs. Voltage | 20 | 6.8 | -2.9 | -0.003 | 2.5 |
| | 20 | 8.7 | -2.58 | -0.003 | 2.5 |
| | | | | **Result:** | **Pass** |

| Test Modulation: | 10 MHz 16QAM | | Test Channel: | 836.5 | MHz |
|---|---|---|---|---|---|
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Frequency Error | | Limit |
| | | | (Hz) | (ppm) | (ppm) |
| Frequency Stability vs. Temperature | -30 | 7.6 | -3.35 | -0.004 | 2.5 |
| | -20 | 7.6 | 0.46 | 0.001 | 2.5 |
| | -10 | 7.6 | -0.08 | 0.000 | 2.5 |
| | 0 | 7.6 | -2.88 | -0.003 | 2.5 |
| | 10 | 7.6 | -1.79 | -0.002 | 2.5 |
| | 20 | 7.6 | -1.04 | -0.001 | 2.5 |
| | 30 | 7.6 | -1.22 | -0.001 | 2.5 |
| | 40 | 7.6 | -2 | -0.002 | 2.5 |
| | 50 | 7.6 | -2.51 | -0.003 | 2.5 |
| Frequency Stability vs. Voltage | 20 | 6.8 | -1.05 | -0.001 | 2.5 |
| | 20 | 8.7 | -1.73 | -0.002 | 2.5 |
| | | | | **Result:** | **Pass** |

**Test Plots**(Note: The 7 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

| **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 |  |  |