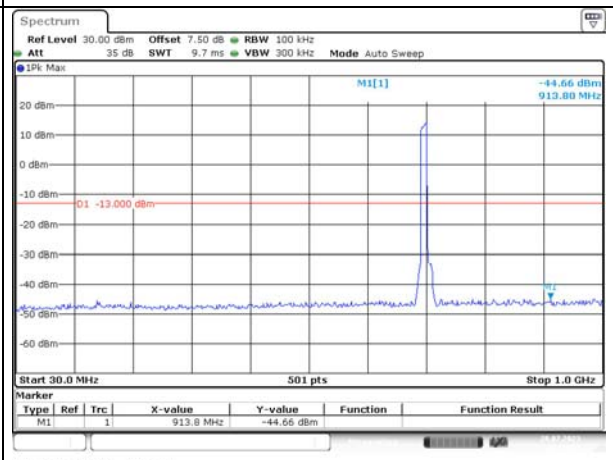
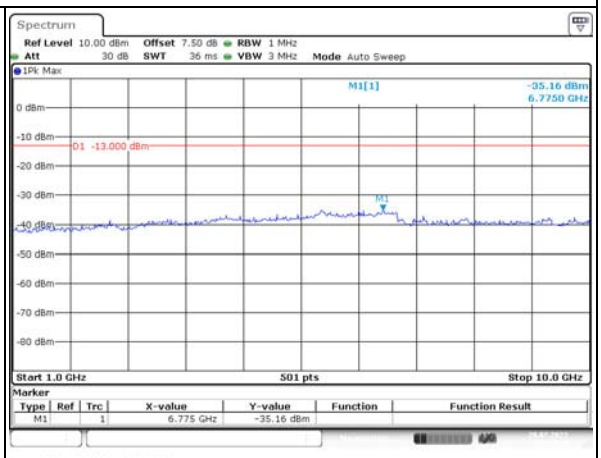
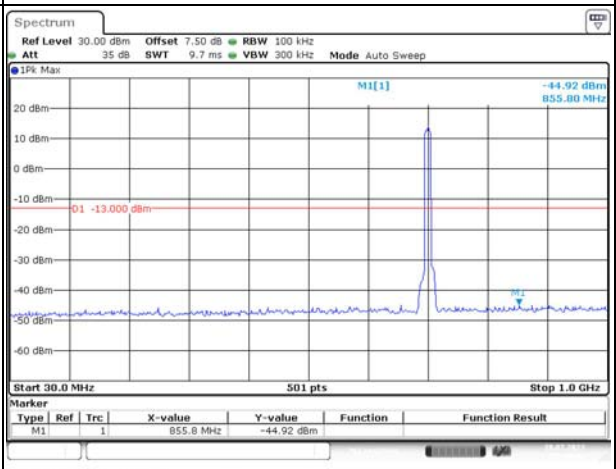
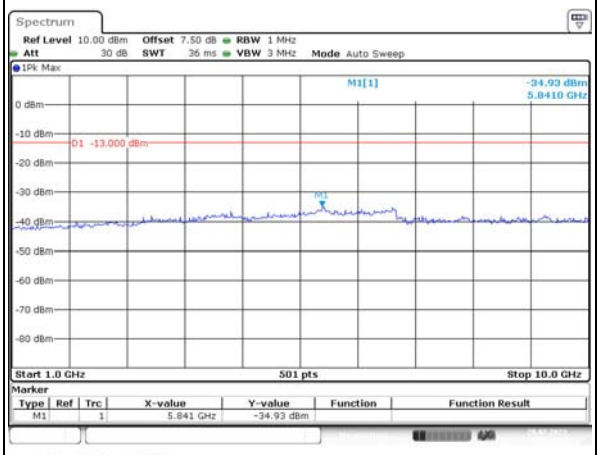
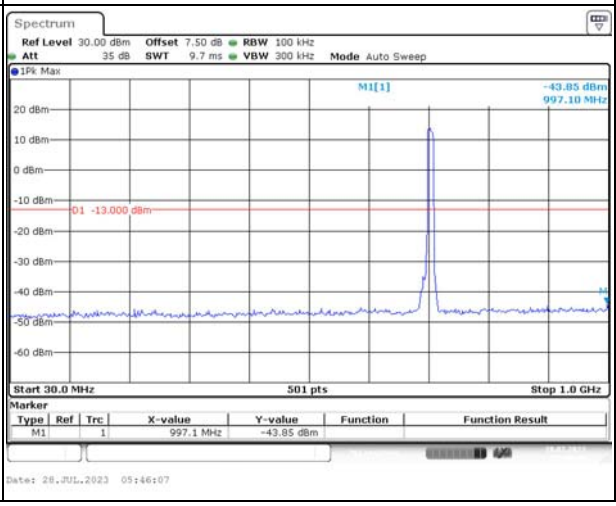
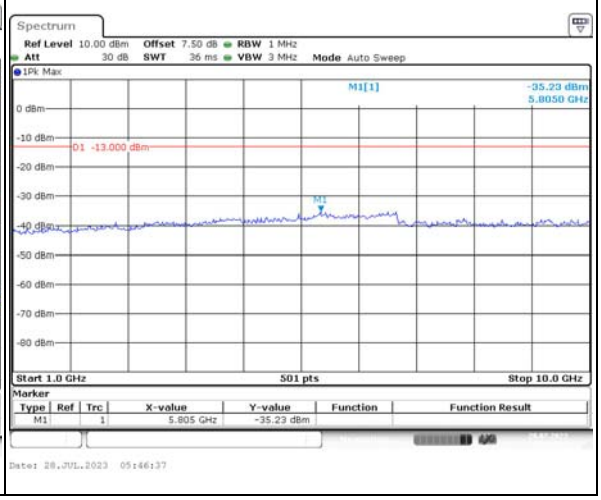
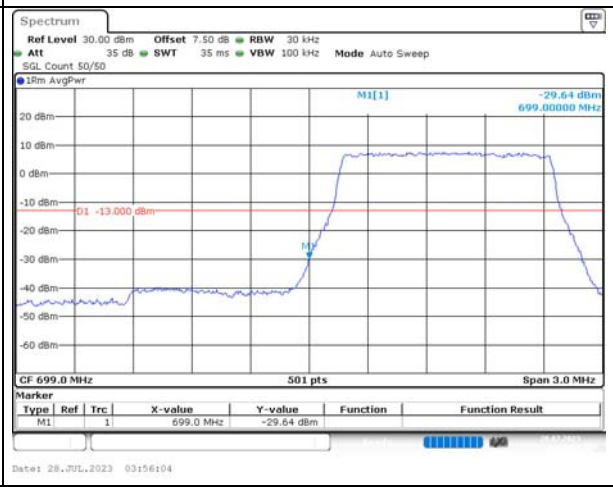
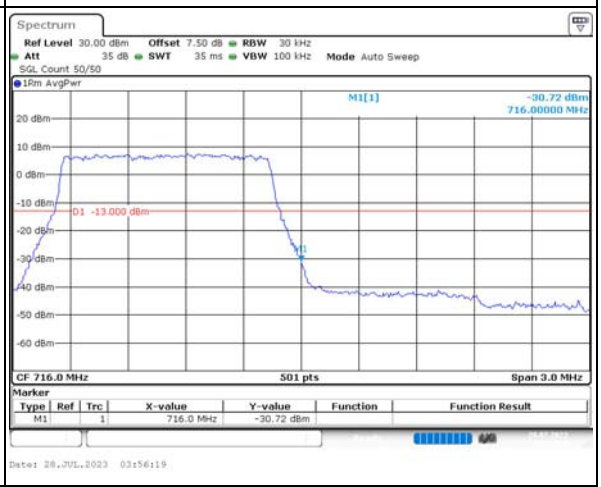
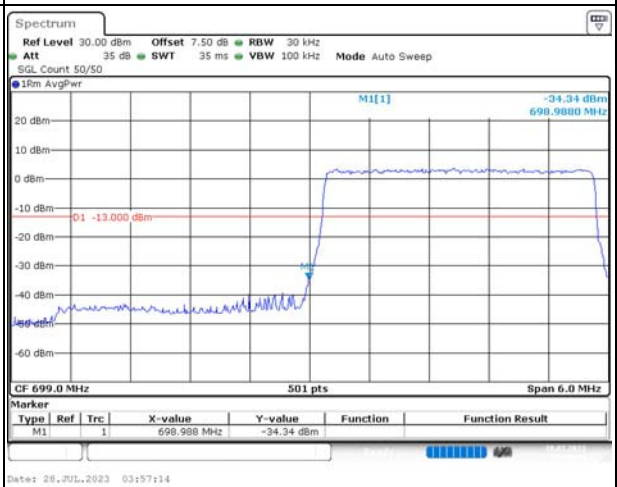
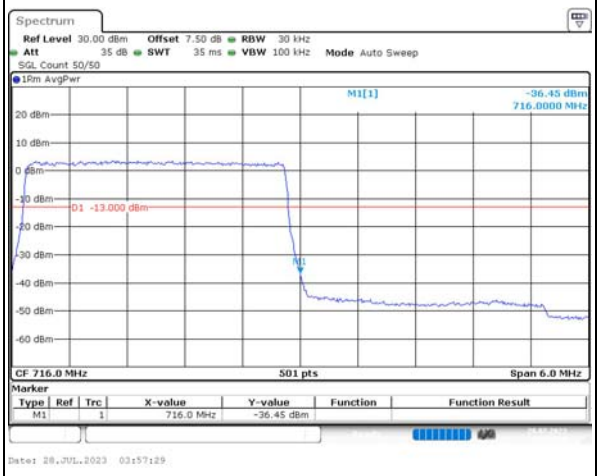
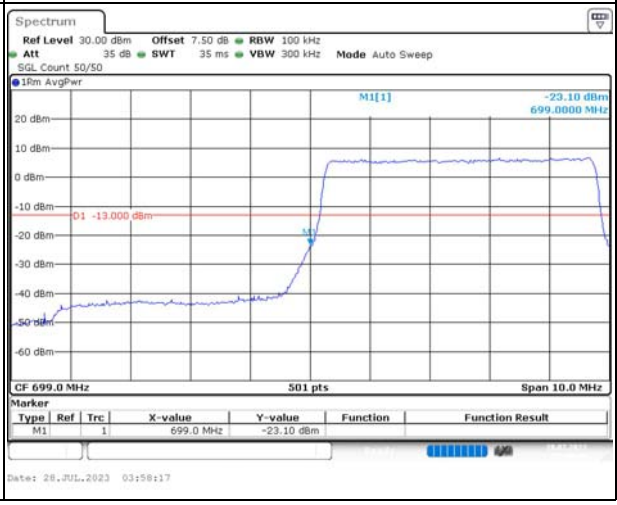
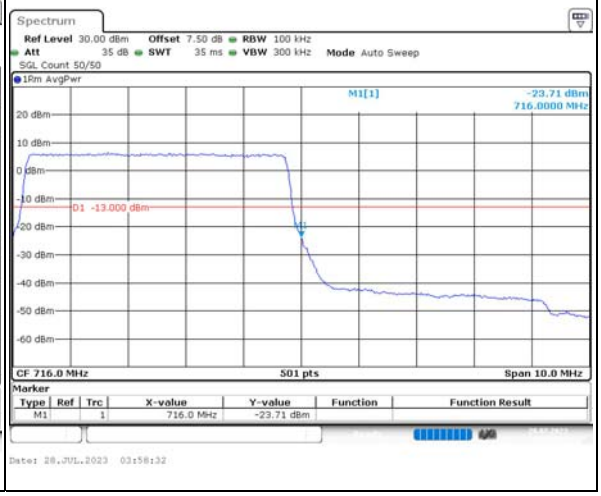
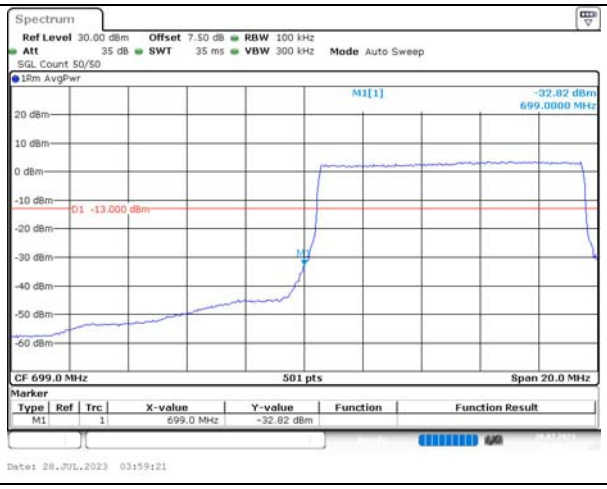
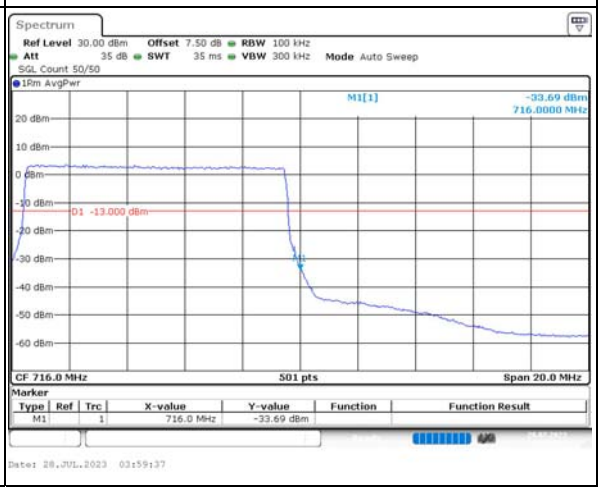
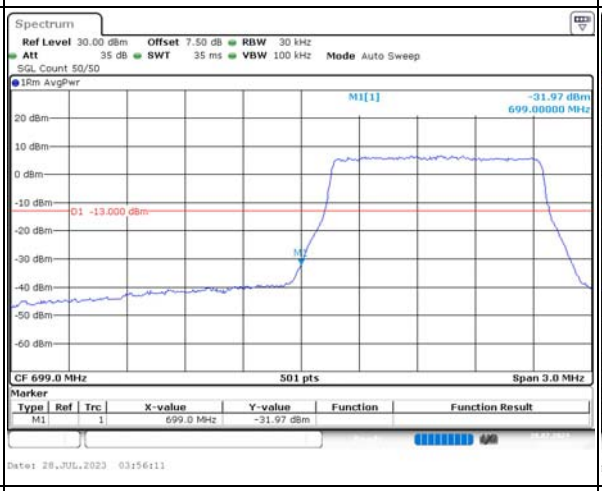
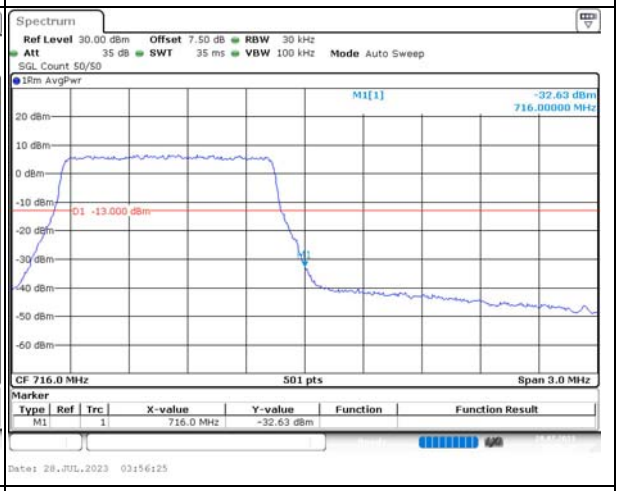
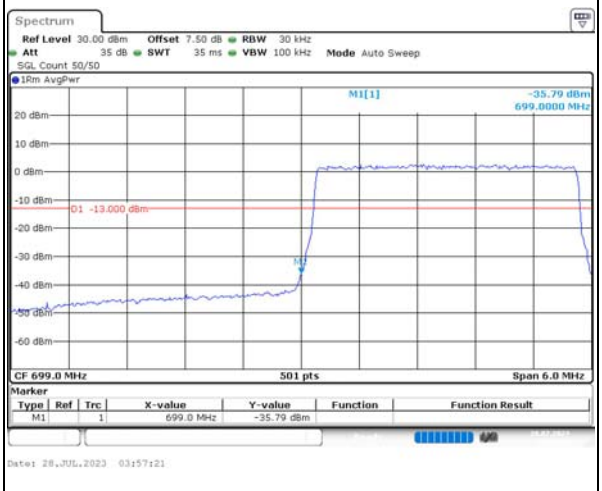
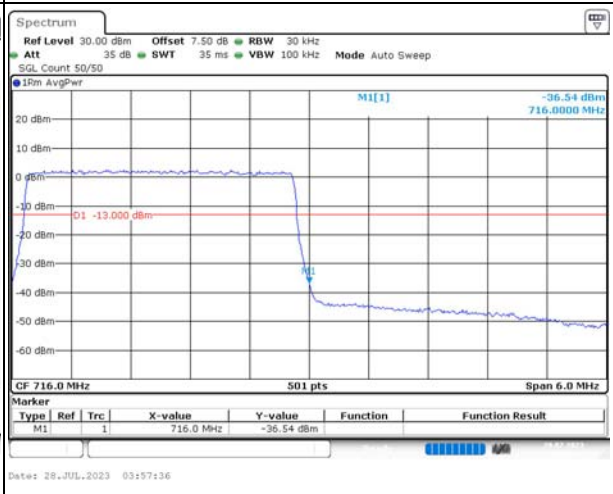
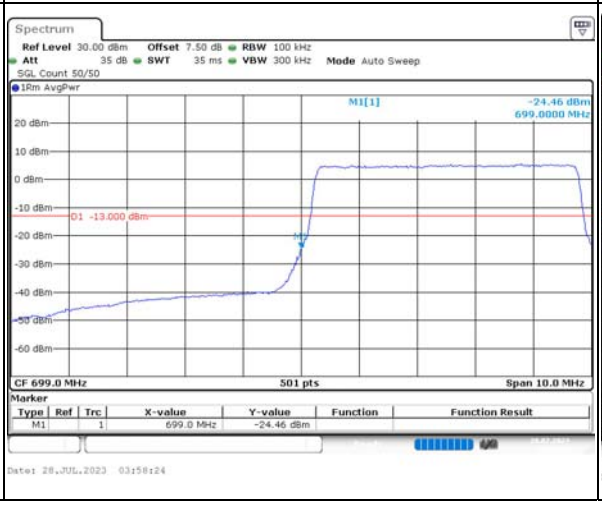
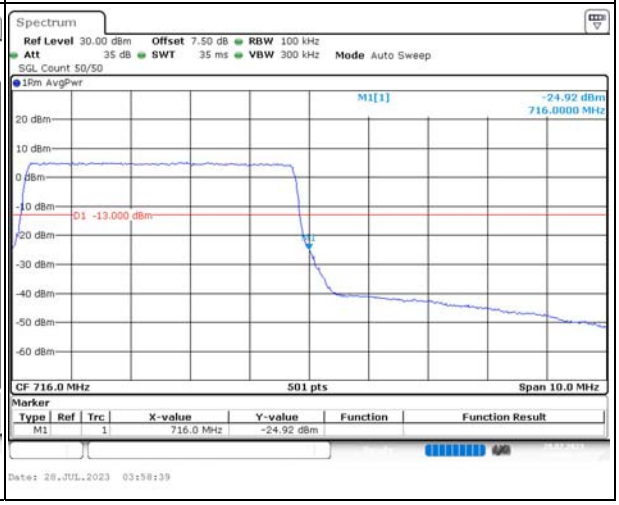
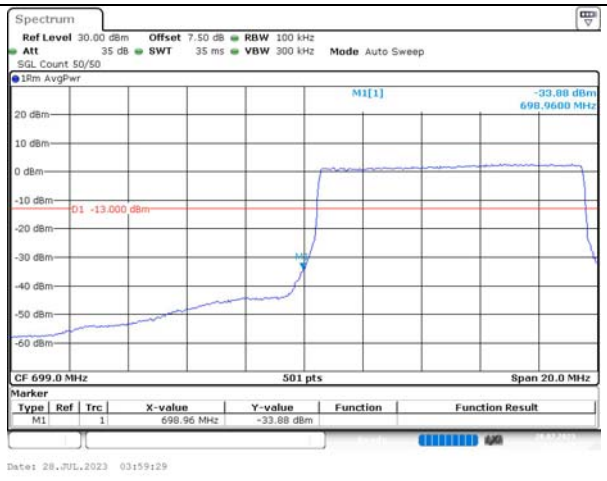
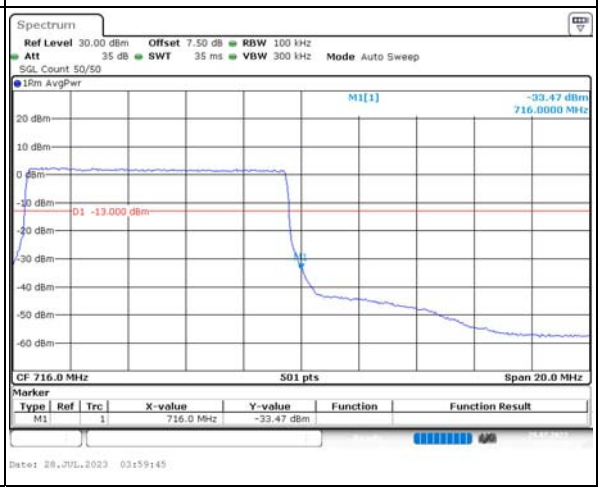
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **10MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

| 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 |  |  |

| 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 |  |  |

## 4.10 Antenna Port Test Data and Results for LTE Band 17

| | | | |
|---|---|---|---|
| Serial Number: | 28LK-1 | Test Date: | 2023/7/28~2023/8/31 |
| Test Site: | RF | Test Mode: | Transmitting |
| Tester: | One Luo | Test Result: | **Pass** |

| **Environmental Conditions:** | | | | | |
|---|---|---|---|---|---|
| Temperature: (℃) | 25.2~26.8 | Relative Humidity: (%) | 42~55 | ATM Pressure: (kPa) | 99.7~100.3 |

**Test Equipment List and Details:**

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| R&S | Spectrum Analyzer | FSV40 | 101474 | 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 |
| Mini-Circuits | DC Block | BLK-18-S+ | 1554403 | Each time | N/A |
| Weinschel | Power Splitter | 1515 | RA914 | 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 | 2022/9/29 | 2023/9/28 |
| 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) |
|---|---|---|---|
| 5MHz | 706.5 | 710 | 713.5 |
| 10MHz | 709 | 710 | 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 | | |
| 5MHz QPSK | RB1#0 | 22.4 | 22.31 | 22.35 | 21.98 | 34.77 |
| | RB1#13 | 22.5 | 22.43 | 22.43 | | |
| | RB1#24 | 22.39 | 22.34 | 22.38 | | |
| | RB15#0 | 21.42 | 21.47 | 21.44 | | |
| | RB15#10 | 21.44 | 21.44 | 21.43 | | |
| | RB25#0 | 21.45 | 21.41 | 21.42 | | |
| 5MHz 16QAM | RB1#0 | 21.66 | 21.43 | 21.22 | 21.28 | 34.77 |
| | RB1#13 | 21.8 | 21.53 | 21.37 | | |
| | RB1#24 | 21.67 | 21.43 | 21.27 | | |
| | RB15#0 | 20.43 | 20.51 | 20.5 | | |
| | RB15#10 | 20.42 | 20.48 | 20.48 | | |
| | RB25#0 | 20.44 | 20.48 | 20.48 | | |
| 10MHz QPSK | RB1#0 | 22.38 | 22.46 | 22.38 | 22.13 | 34.77 |
| | RB1#25 | 22.65 | 22.59 | 22.57 | | |
| | RB1#49 | 22.51 | 22.45 | 22.42 | | |
| | RB25#0 | 21.56 | 21.53 | 21.54 | | |
| | RB25#25 | 21.5 | 21.5 | 21.5 | | |
| | RB50#0 | 21.49 | 21.53 | 21.54 | | |
| 10MHz 16QAM | RB1#0 | 21.53 | 21.41 | 21.98 | 21.7 | 34.77 |
| | RB1#25 | 21.7 | 21.54 | 22.22 | | |
| | RB1#49 | 21.6 | 21.47 | 22.04 | | |
| | RB25#0 | 20.56 | 20.63 | 20.65 | | |
| | RB25#25 | 20.51 | 20.57 | 20.56 | | |
| | RB50#0 | 20.55 | 20.58 | 20.58 | | |

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 | 5.42 | 5.22 | 5.39 | 13 |
| | RB50#0 | 5.36 | 5.36 | 5.39 | 13 |
| 10MHz 16QAM | RB1#0 | 6.41 | 5.83 | 6.26 | 13 |
| | RB50#0 | 6.26 | 6.26 | 6.23 | 13 |

**Result:** **Pass**

| FCC §2.1049, §27.53:Occupied Bandwidth | | | | | | |
|---|---|---|---|---|---|---|
| Operation Mode | 99% Occupied Bandwidth (MHz) | | | 26 dB Occupied Bandwidth (MHz) | | |
| | Low Channel | Middle channel | High Channel | Low Channel | Middle Channel | High Channel |
| 5MHz QPSK | 4.511 | 4.511 | 4.551 | 5.24 | 5.18 | 5.22 |
| 5MHz 16QAM | 4.551 | 4.551 | 4.511 | 5.2 | 5.26 | 5.16 |
| 10MHz QPSK | 8.982 | 8.982 | 8.942 | 9.96 | 9.96 | 9.84 |
| 10MHz 16QAM | 8.982 | 8.942 | 8.942 | 9.92 | 9.84 | 9.92 |
| Note: The test plots please refer to the Plots of Occupied Bandwidth | | | | | | |

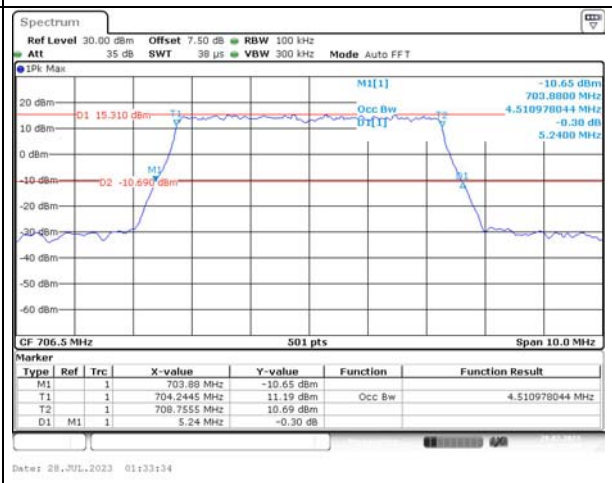
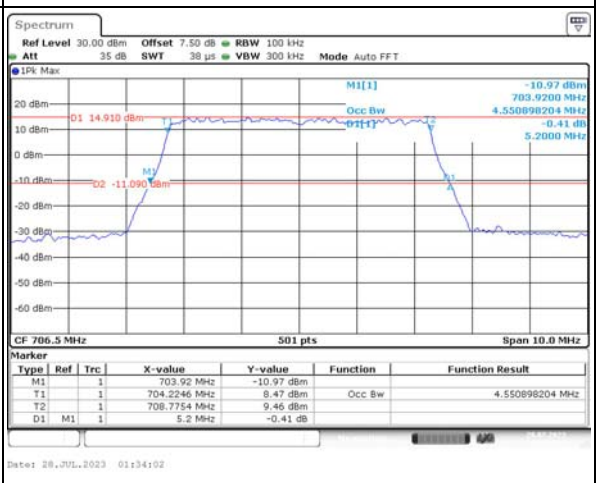
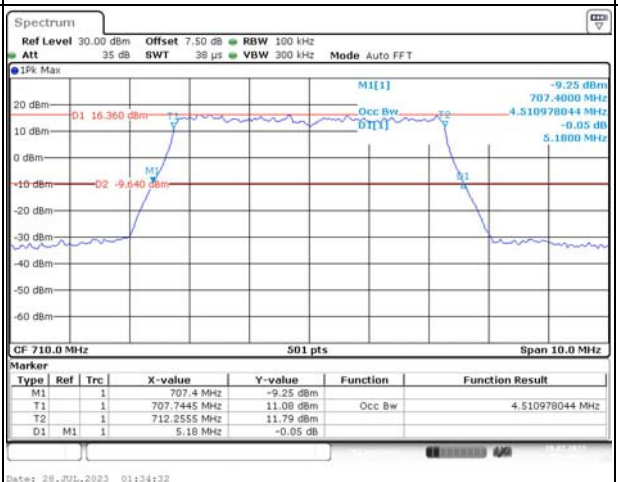
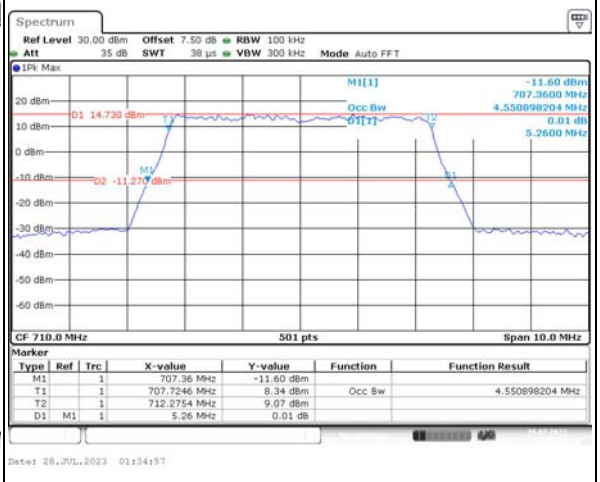
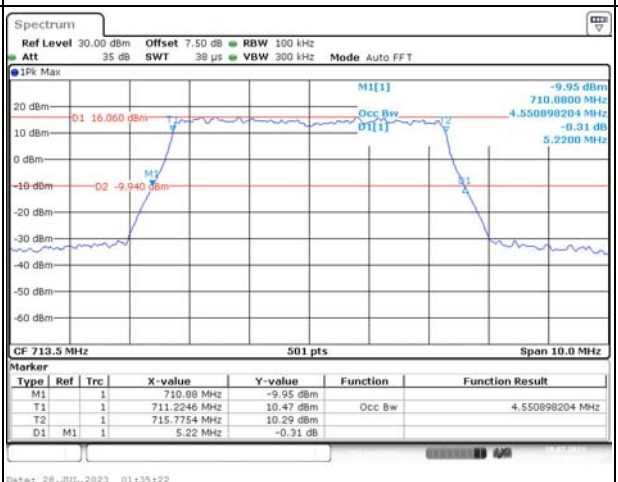
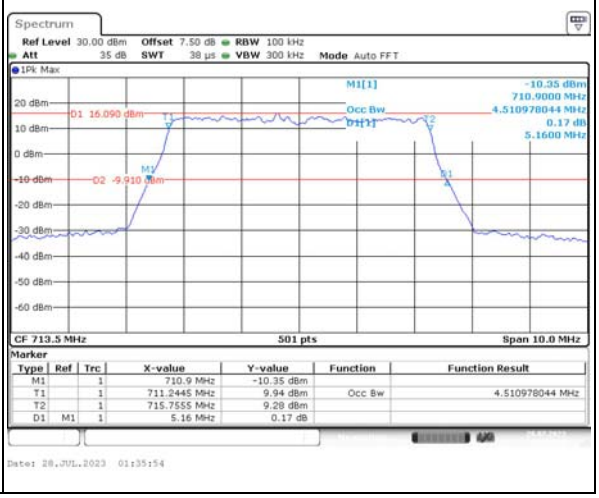
| FCC §2.1051, §27.53:Spurious Emissions at Antenna Terminal | |
|---|---|
| **Result:** | **Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.** |

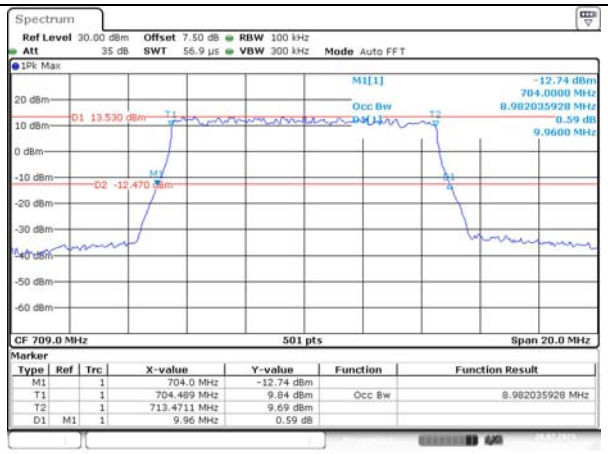
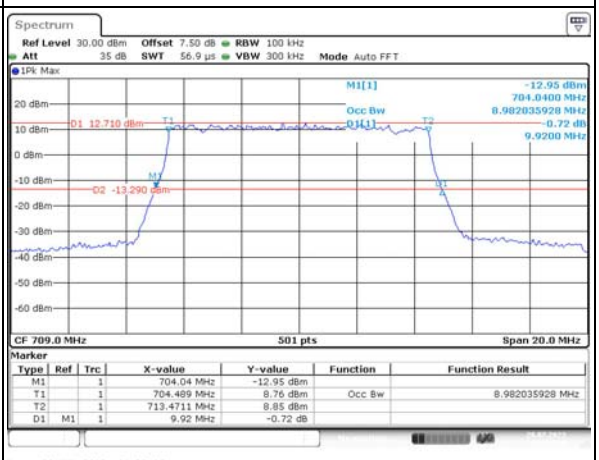
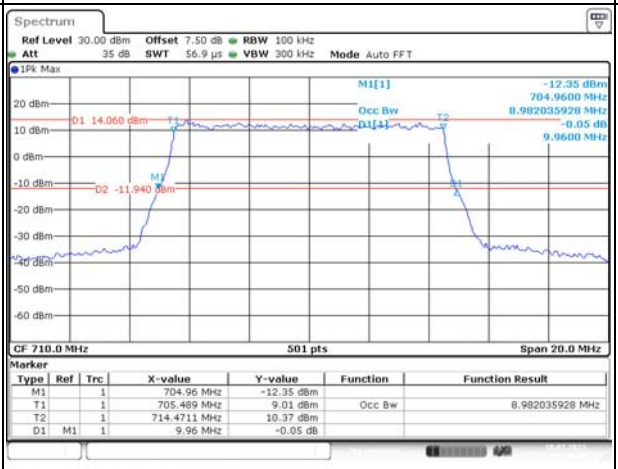
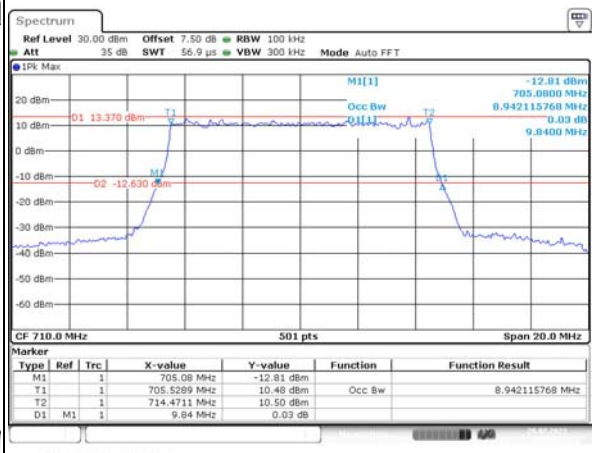
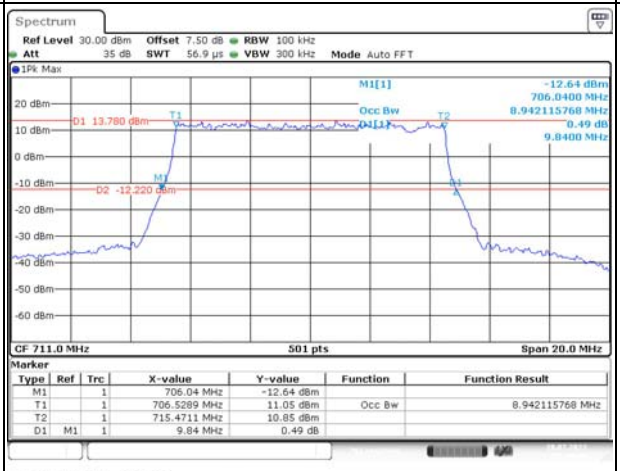
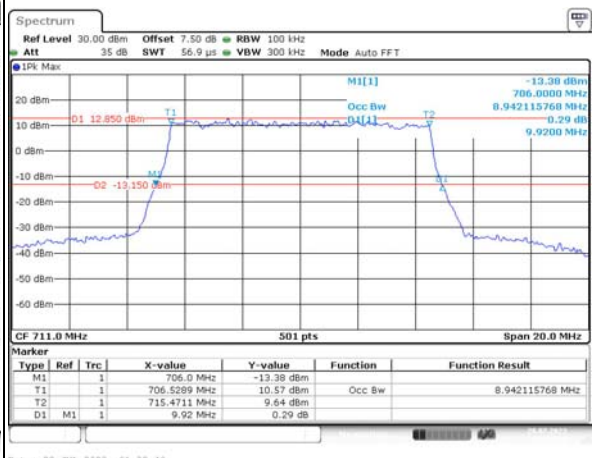
| FCC §2.1051, §27.53:Out of band emission, Band Edge | |
|---|---|
| **Result:** | **Pass, Please refer to the test plots of Out of band emission, Band Edge.** |

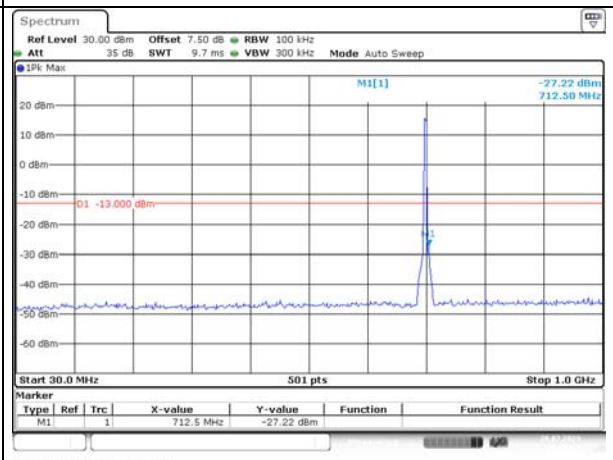
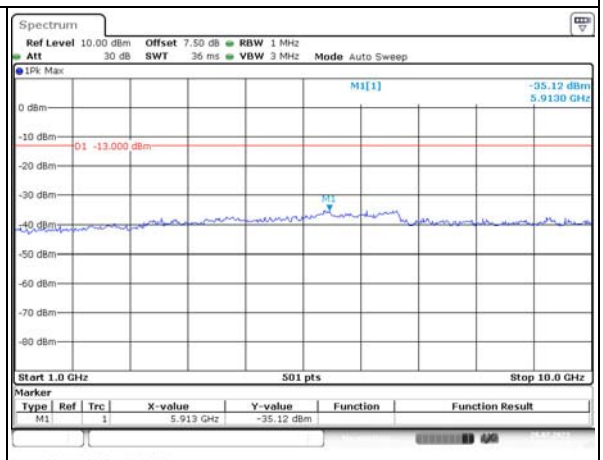
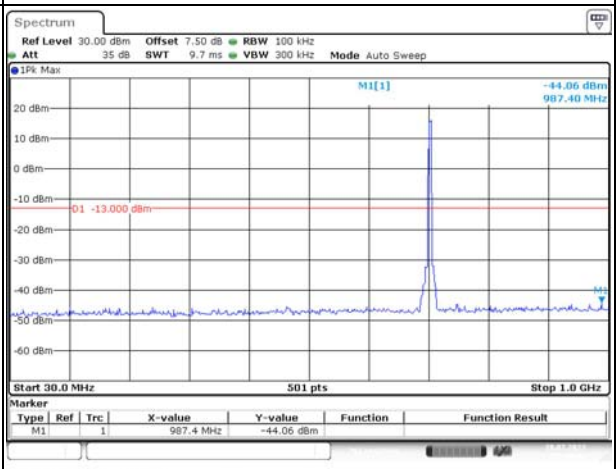
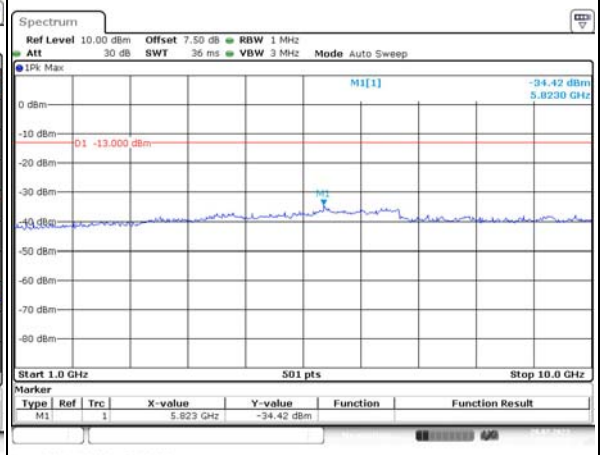
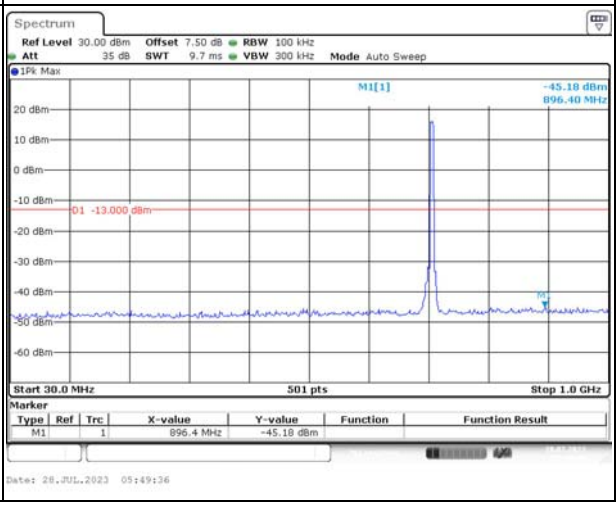
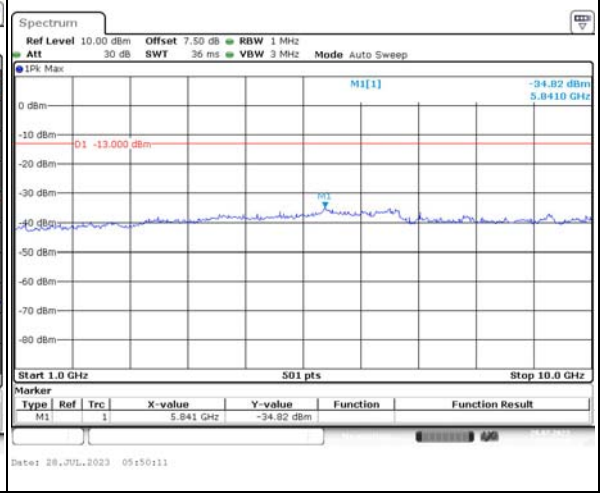
| FCC §2.1055, §27.54: Frequency Stability | | | | | | |
|---|---|---|---|---|---|---|
| Test Mode: | 10M QPSK | Test Channel: Lowest for Lower Edge, Highest for Upper Edge | | | | |
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.8 | 704.401 | 704.00 | 715.492 | 716.00 |
| | -20 | 3.8 | 704.494 | 704.00 | 715.460 | 716.00 |
| | -10 | 3.8 | 704.441 | 704.00 | 715.493 | 716.00 |
| | 0 | 3.8 | 704.403 | 704.00 | 715.480 | 716.00 |
| | 10 | 3.8 | 704.476 | 704.00 | 715.446 | 716.00 |
| | 20 | 3.8 | 704.489 | 704.00 | 715.471 | 716.00 |
| | 30 | 3.8 | 704.463 | 704.00 | 715.454 | 716.00 |
| | 40 | 3.8 | 704.490 | 704.00 | 715.454 | 716.00 |
| | 50 | 3.8 | 704.416 | 704.00 | 715.429 | 716.00 |
| Frequency Stability vs. Voltage | 20 | 3.65 | 704.435 | 704.00 | 715.495 | 716.00 |
| | 20 | 4.35 | 704.407 | 704.00 | 715.490 | 716.00 |
| | | | | | **Result:** | **Pass** |

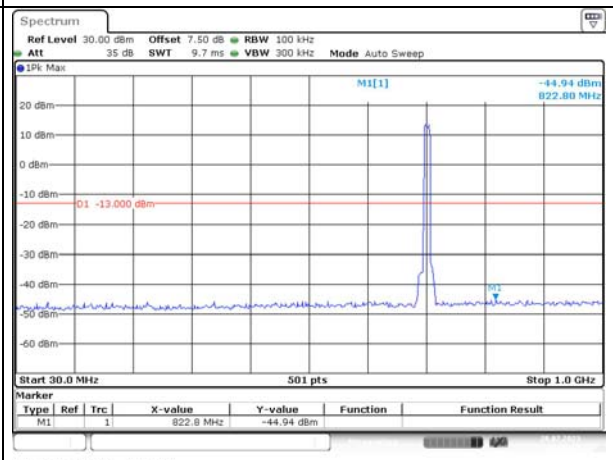
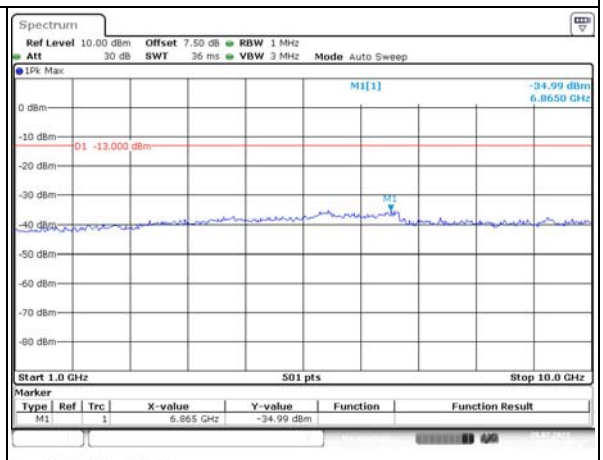
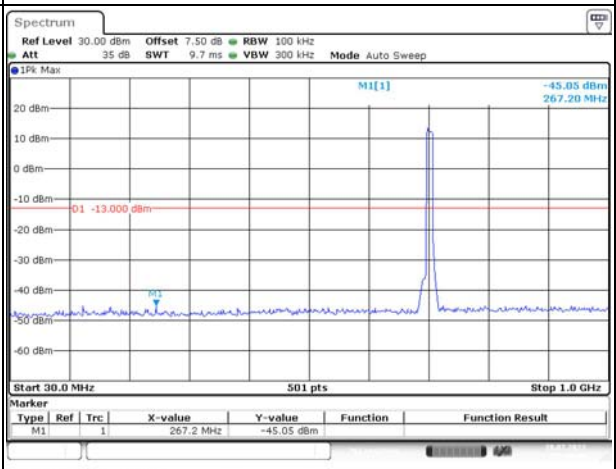
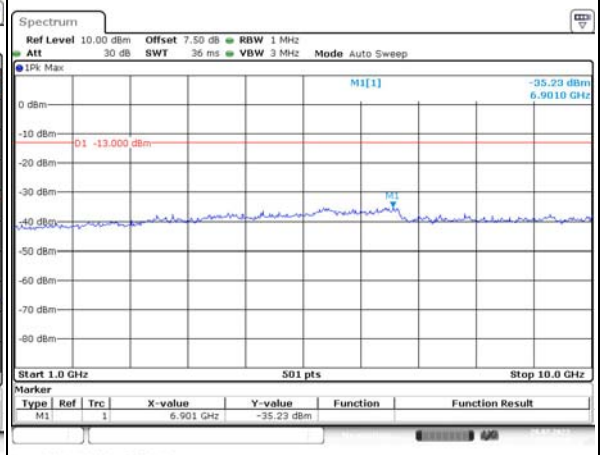
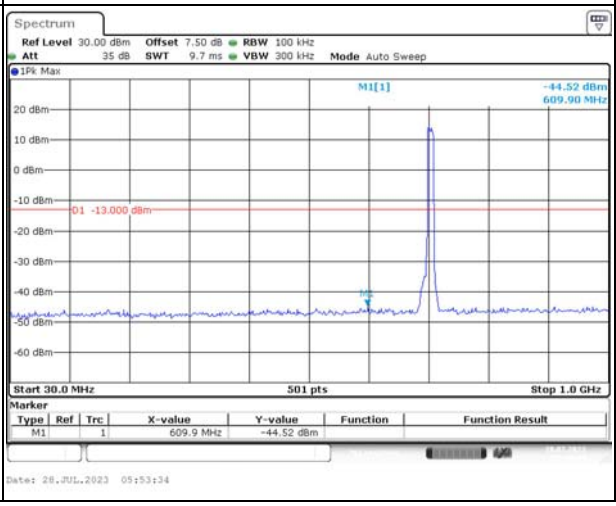
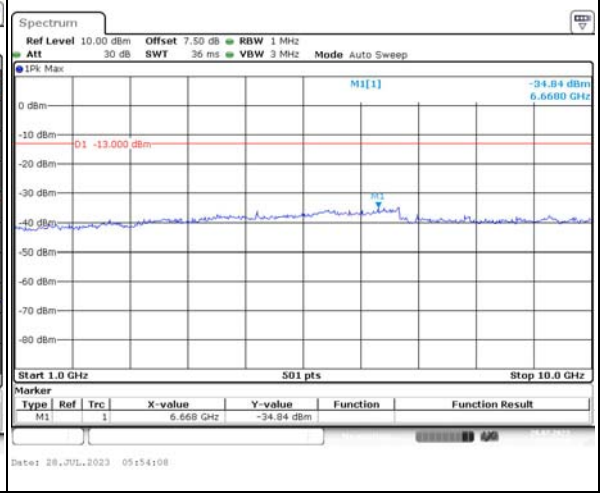
| Test Mode: | 10M 16QAM | Test Channel: Lowest for Lower Edge, Highest for Upper Edge | | | | |
|---|---|---|---|---|---|---|
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.8 | 704.492 | 704.00 | 715.492 | 716.00 |
| | -20 | 3.8 | 704.498 | 704.00 | 715.454 | 716.00 |
| | -10 | 3.8 | 704.447 | 704.00 | 715.464 | 716.00 |
| | 0 | 3.8 | 704.415 | 704.00 | 715.482 | 716.00 |
| | 10 | 3.8 | 704.442 | 704.00 | 715.420 | 716.00 |
| | 20 | 3.8 | 704.489 | 704.00 | 715.471 | 716.00 |
| | 30 | 3.8 | 704.409 | 704.00 | 715.471 | 716.00 |
| | 40 | 3.8 | 704.472 | 704.00 | 715.490 | 716.00 |
| | 50 | 3.8 | 704.447 | 704.00 | 715.422 | 716.00 |
| Frequency Stability vs. Voltage | 20 | 3.65 | 704.472 | 704.00 | 715.470 | 716.00 |
| | 20 | 4.35 | 704.432 | 704.00 | 715.420 | 716.00 |
| | | | | | **Result:** | **Pass** |

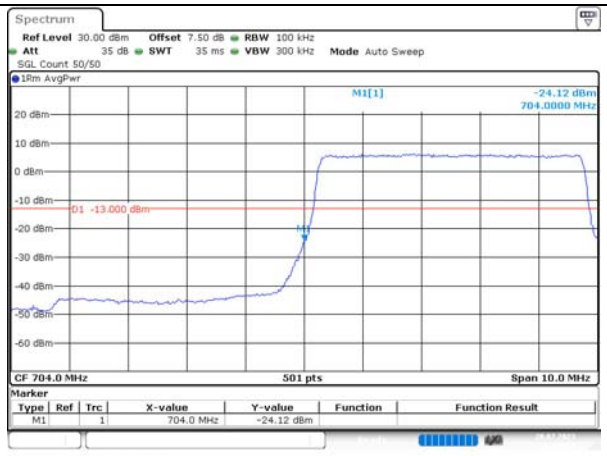
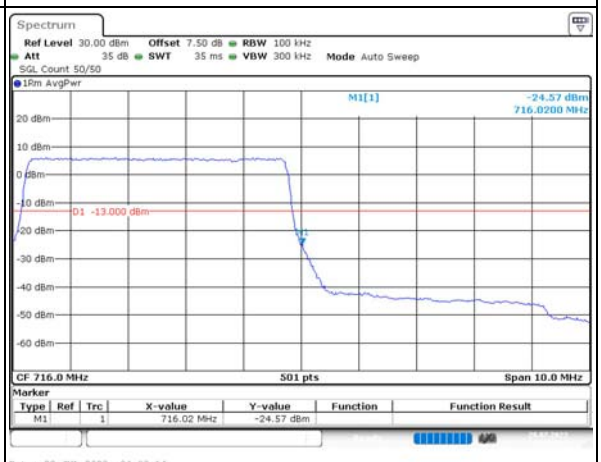
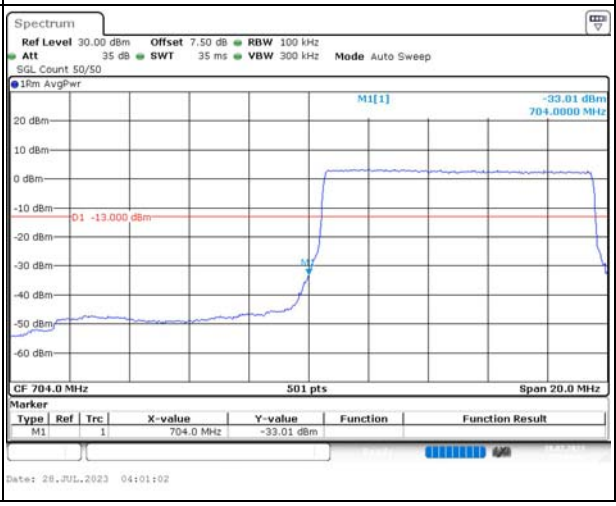
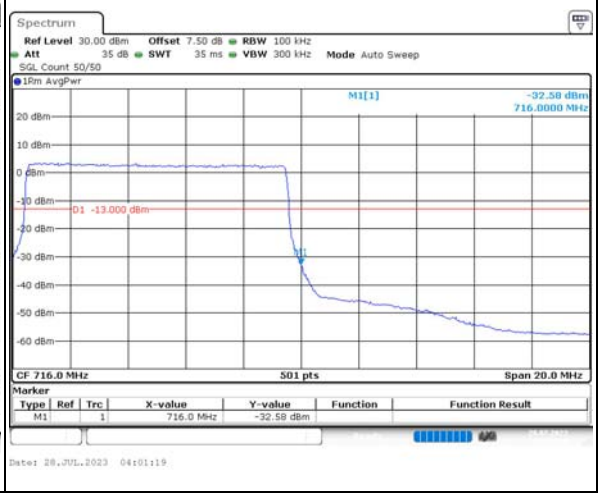
**Test Plots** (Note: The 7.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer)**:**

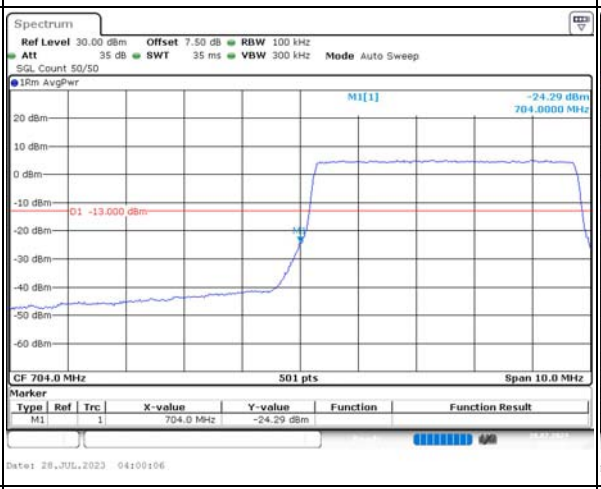
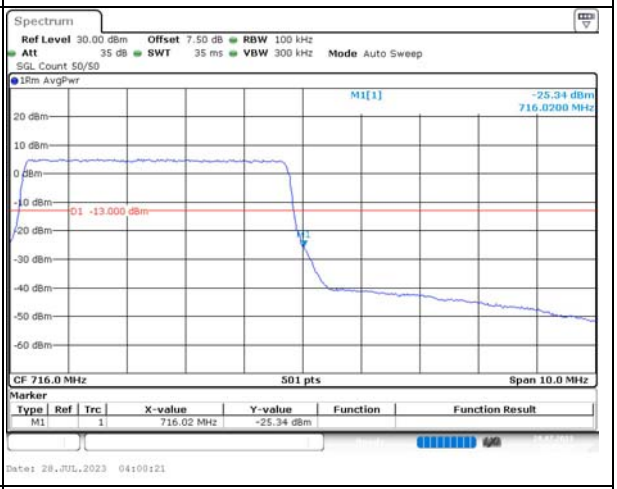
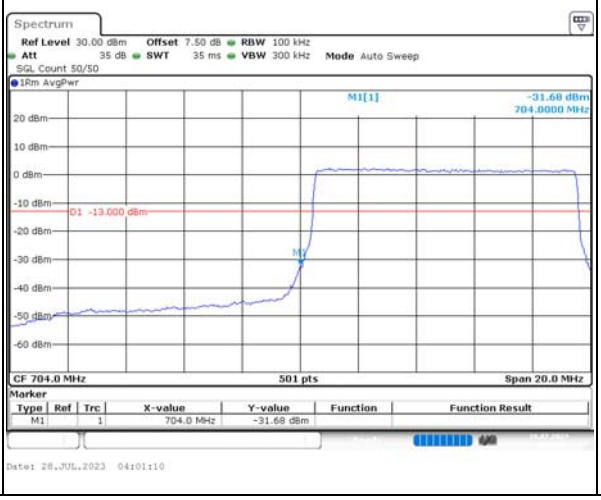
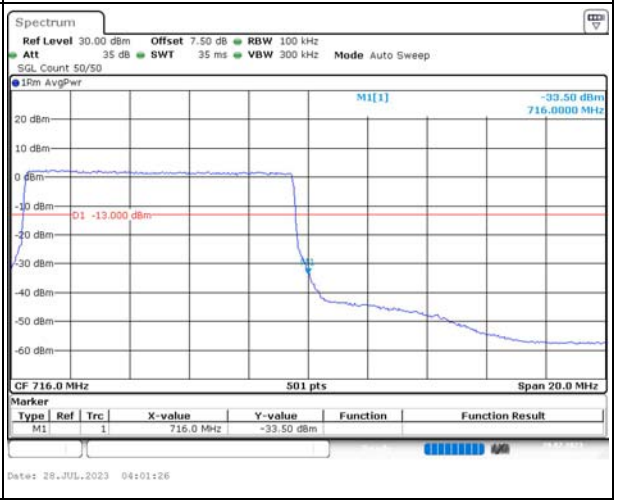
| **Occupied Bandwidth** | | |
|---|---|---|
| **Channel** | 5MHz Bandwidth QPSK | 5MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

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

| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **5MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **10MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

| Out of band emission, Band Edge | | |
|---|---|---|
| **Mode** | **Lowest** | **Highest** |
| QPSK 5MHz |  |  |
| QPSK 10MHz |  |  |

| Out of band emission, Band Edge | | |
|---|---|---|
| **Mode** | **Lowest** | **Highest** |
| 16QAM 5MHz |  |  |
| 16QAM 10MHz |  |  |

## 4.11 Antenna Port Test Data and Results for LTE Band 25

| | | | |
|---|---|---|---|
| Serial Number: | 28LK-1 | Test Date: | 2023/7/28~2023/8/31 |
| Test Site: | RF | Test Mode: | Transmitting |
| Tester: | One Luo | Test Result: | Pass |

| **Environmental Conditions:** | | | | | |
|---|---|---|---|---|---|
| Temperature: (℃) | 25.2~26.8 | Relative Humidity: (%) | 42~55 | ATM Pressure: (kPa) | 99.7~100.3 |

**Test Equipment List and Details:**

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| R&S | Spectrum Analyzer | FSV40 | 101474 | 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 |
| Mini-Circuits | DC Block | BLK-18-S+ | 1554403 | Each time | N/A |
| Weinschel | Power Splitter | 1515 | RA914 | 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 | 2022/9/29 | 2023/9/28 |
| 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 | 1850.7 | 1882.5 | 1914.3 |
| 3MHz | 1851.5 | 1882.5 | 1913.5 |
| 5MHz | 1852.5 | 1882.5 | 1912.5 |
| 10MHz | 1855 | 1882.5 | 1910 |
| 15MHz | 1857.5 | 1882.5 | 1907.5 |
| 20MHz | 1860 | 1882.5 | 1905 |

**Test Data:**

| **FCC§2.1046;§ 24.232** | | | | | | |
|---|---|---|---|---|---|---|
| **RF Output Power:** | | | | | | |
| Test Bandwidth & Modulation | Resource Block & RB offset | Conducted Average Output Power(dBm) | | | Maximum EIRP (dBm) | EIRP Limit (dBm) |
| | | Lowest Channel | Middle Channel | Highest Channel | | |
| 1.4MHz QPSK | RB1#0 | 22.58 | 22.63 | 22.88 | 22.35 | 33 |
| | RB1#3 | 22.72 | 22.85 | 23.03 | | |
| | RB1#5 | 22.56 | 22.68 | 22.85 | | |
| | RB3#0 | 22.66 | 22.81 | 22.98 | | |
| | RB3#3 | 22.59 | 22.8 | 22.99 | | |
| | RB6#0 | 21.62 | 21.75 | 21.91 | | |
| 1.4MHz 16QAM | RB1#0 | 21.71 | 21.75 | 21.9 | 21.48 | 33 |
| | RB1#3 | 21.85 | 21.93 | 22.07 | | |
| | RB1#5 | 21.74 | 21.76 | 21.88 | | |
| | RB3#0 | 21.63 | 21.92 | 22.15 | | |
| | RB3#3 | 21.68 | 21.91 | 22.16 | | |
| | RB6#0 | 20.73 | 20.75 | 20.99 | | |
| 3MHz QPSK | RB1#0 | 22.58 | 22.77 | 22.93 | 22.25 | 33 |
| | RB1#8 | 22.63 | 22.68 | 22.89 | | |
| | RB1#14 | 22.65 | 22.68 | 22.91 | | |
| | RB6#0 | 21.53 | 21.66 | 21.86 | | |
| | RB6#9 | 21.58 | 21.72 | 21.83 | | |
| | RB15#0 | 21.62 | 21.73 | 21.94 | | |
| 3MHz 16QAM | RB1#0 | 21.7 | 22.39 | 22.1 | 21.72 | 33 |
| | RB1#8 | 21.61 | 22.39 | 22.1 | | |
| | RB1#14 | 21.63 | 22.4 | 22.07 | | |
| | RB6#0 | 20.57 | 20.84 | 20.95 | | |
| | RB6#9 | 20.62 | 20.85 | 20.94 | | |
| | RB15#0 | 20.74 | 20.9 | 20.93 | | |
| 5MHz QPSK | RB1#0 | 22.52 | 22.65 | 22.86 | 22.27 | 33 |
| | RB1#13 | 22.67 | 22.76 | 22.95 | | |
| | RB1#24 | 22.57 | 22.64 | 22.87 | | |
| | RB15#0 | 21.68 | 21.82 | 21.96 | | |
| | RB15#10 | 21.68 | 21.82 | 21.86 | | |
| | RB25#0 | 21.66 | 21.78 | 21.9 | | |
| 5MHz 16QAM | RB1#0 | 21.87 | 21.77 | 21.77 | 21.32 | 33 |
| | RB1#13 | 22 | 21.89 | 21.9 | | |
| | RB1#24 | 21.9 | 21.76 | 21.81 | | |
| | RB15#0 | 20.72 | 20.91 | 21.09 | | |
| | RB15#10 | 20.74 | 20.92 | 21 | | |
| | RB25#0 | 20.71 | 20.89 | 21.03 | | |
| 10MHz QPSK | RB1#0 | 22.55 | 22.71 | 22.83 | 22.39 | 33 |
| | RB1#25 | 22.75 | 22.86 | 23.07 | | |
| | RB1#49 | 22.64 | 22.8 | 22.92 | | |
| | RB25#0 | 21.68 | 21.8 | 21.95 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | RB25#25 | 21.76 | 21.9 | 21.96 | | |
| | RB50#0 | 21.76 | 21.88 | 21.98 | | |
| 10MHz 16QAM | RB1#0 | 22.23 | 21.91 | 21.88 | 21.73 | 33 |
| | RB1#25 | 22.41 | 22.08 | 22.05 | | |
| | RB1#49 | 22.3 | 21.92 | 21.95 | | |
| | RB25#0 | 20.78 | 20.93 | 21.12 | | |
| | RB25#25 | 20.9 | 21 | 21.15 | | |
| | RB50#0 | 20.82 | 20.95 | 21.09 | | |
| 15MHz QPSK | RB1#0 | 22.5 | 22.64 | 22.7 | 22.26 | 33 |
| | RB1#38 | 22.63 | 22.8 | 22.94 | | |
| | RB1#74 | 22.57 | 22.75 | 22.85 | | |
| | RB36#0 | 21.67 | 21.81 | 21.94 | | |
| | RB36#39 | 21.71 | 21.87 | 22.08 | | |
| | RB75#0 | 21.67 | 21.81 | 22 | | |
| 15MHz 16QAM | RB1#0 | 22.11 | 21.79 | 22.17 | 21.74 | 33 |
| | RB1#38 | 22.27 | 21.97 | 22.42 | | |
| | RB1#74 | 22.21 | 21.87 | 22.31 | | |
| | RB36#0 | 20.69 | 20.84 | 20.98 | | |
| | RB36#39 | 20.78 | 20.89 | 21.07 | | |
| | RB75#0 | 20.74 | 20.9 | 21.03 | | |
| 20MHz QPSK | RB1#0 | 22.4 | 22.4 | 22.5 | 22.35 | 33 |
| | RB1#50 | 22.84 | 22.89 | 23.03 | | |
| | RB1#99 | 22.54 | 22.56 | 22.7 | | |
| | RB50#0 | 21.61 | 21.77 | 22.03 | | |
| | RB50#50 | 21.67 | 21.92 | 22 | | |
| | RB100#0 | 21.67 | 21.84 | 22.06 | | |
| 20MHz 16QAM | RB1#0 | 21.58 | 22.01 | 21.87 | 21.81 | 33 |
| | RB1#50 | 22.03 | 22.49 | 22.38 | | |
| | RB1#99 | 21.75 | 22.17 | 22.1 | | |
| | RB50#0 | 20.67 | 20.87 | 21.1 | | |
| | RB50#50 | 20.76 | 21.02 | 21.11 | | |
| | RB100#0 | 20.75 | 20.91 | 21.15 | | |
| Note: EIRP=Conducted Power(dBm) - $L_C$(dB) + $G_T$(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 | 5.59 | 5.88 | 5.28 | 13 |
| | RB100#0 | 4.26 | 4.52 | 4.61 | 13 |
| 20MHz 16QAM | RB1#0 | 6.32 | 6.93 | 5.83 | 13 |
| | RB100#0 | 5.91 | 6.12 | 6.12 | 13 |
| | | | | **Result:** | **Pass** |

| FCC §2.1049, §24.238: 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 | 1.096 | 1.326 | 1.29 | 1.296 |
| 1.4MHz 16QAM | 1.096 | 1.096 | 1.096 | 1.29 | 1.296 | 1.314 |
| 3MHz QPSK | 2.683 | 2.683 | 2.683 | 2.88 | 2.868 | 2.868 |
| 3MHz 16QAM | 2.683 | 2.683 | 2.683 | 2.88 | 2.88 | 2.88 |
| 5MHz QPSK | 4.551 | 4.511 | 4.511 | 5.22 | 5.24 | 5.18 |
| 5MHz 16QAM | 4.511 | 4.551 | 4.531 | 5.18 | 5.22 | 5.18 |
| 10MHz QPSK | 8.982 | 8.942 | 8.942 | 9.92 | 9.88 | 9.88 |
| 10MHz 16QAM | 8.942 | 8.982 | 8.942 | 9.68 | 9.88 | 9.92 |
| 15MHz QPSK | 13.593 | 13.473 | 13.533 | 14.94 | 14.82 | 14.88 |
| 15MHz 16QAM | 13.473 | 13.533 | 13.533 | 14.88 | 14.82 | 14.94 |
| 20MHz QPSK | 17.964 | 17.964 | 17.964 | 19.6 | 19.76 | 19.84 |
| 20MHz 16QAM | 17.964 | 17.964 | 18.044 | 19.68 | 19.52 | 19.68 |
| Note: The test plots please refer to the Plots of Occupied Bandwidth | | | | | | |

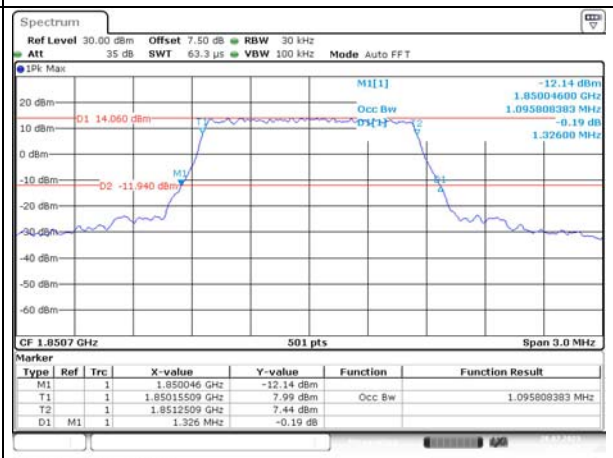
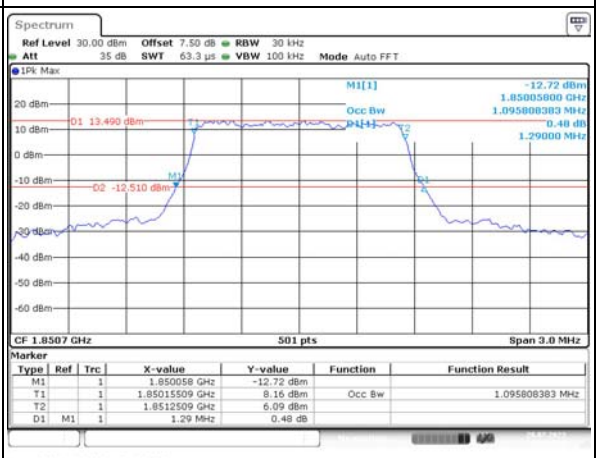
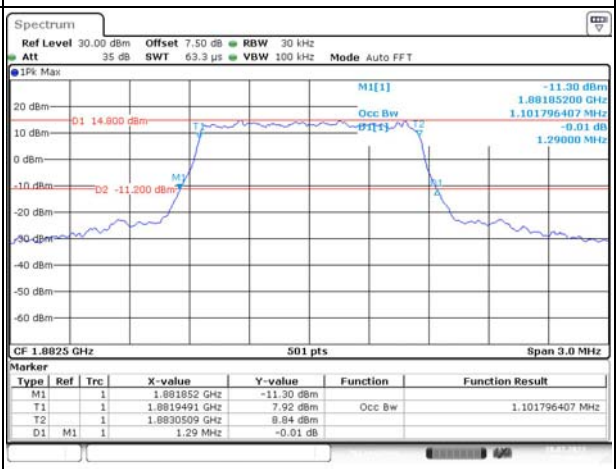
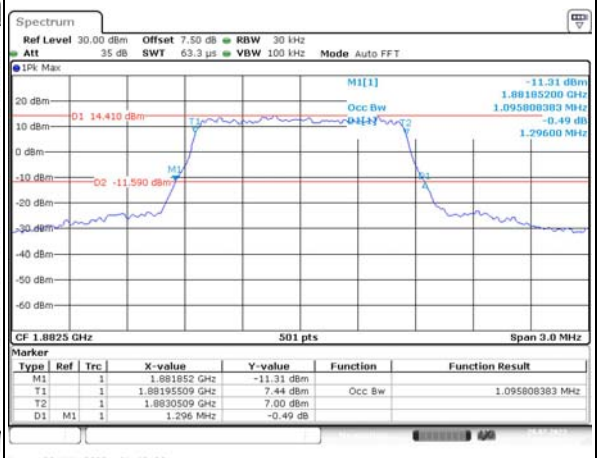
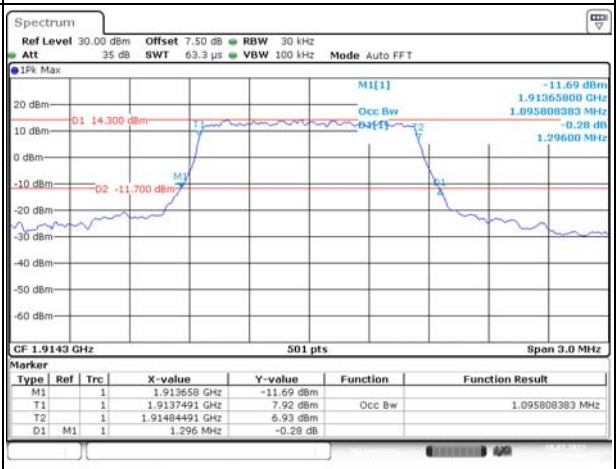
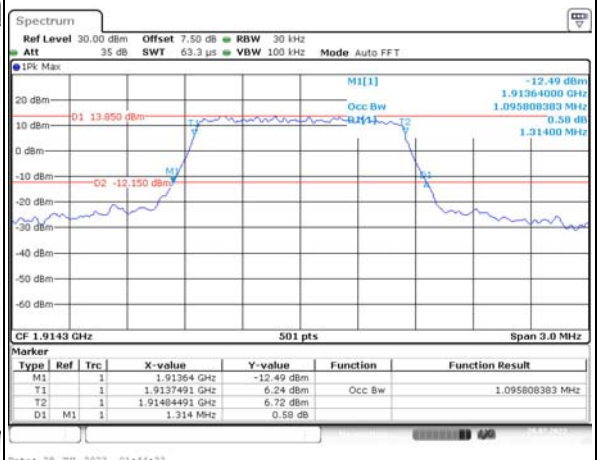
| FCC §2.1051, § 24.238 (a):Spurious Emissions at Antenna Terminal | |
|---|---|
| **Result:** | **Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.** |

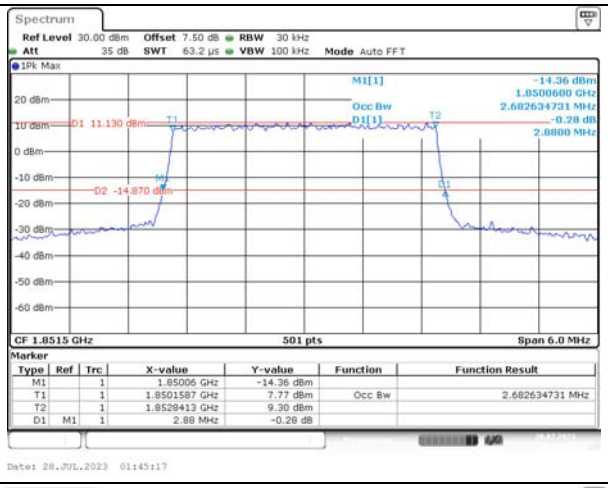
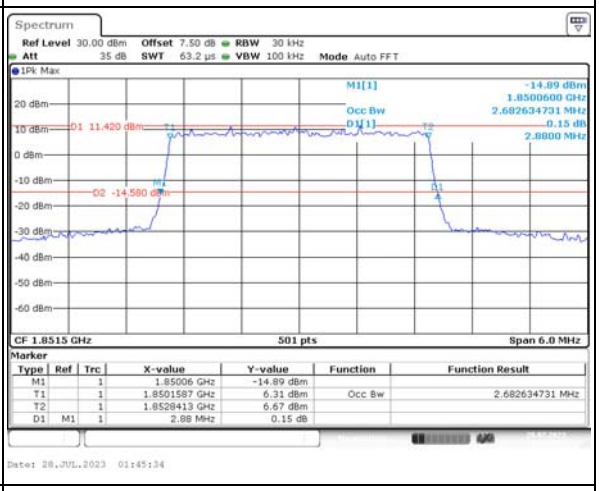
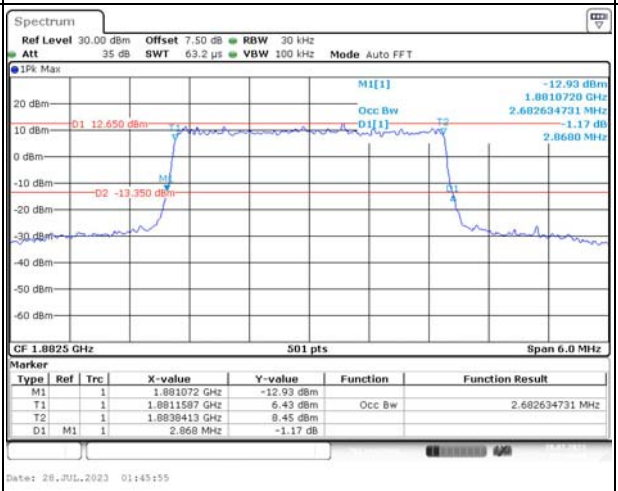
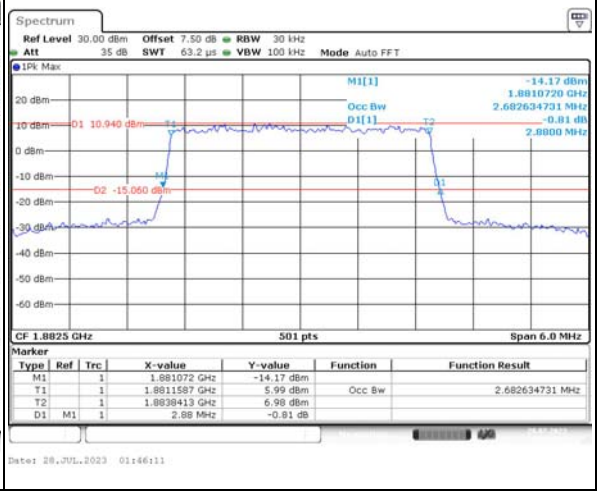
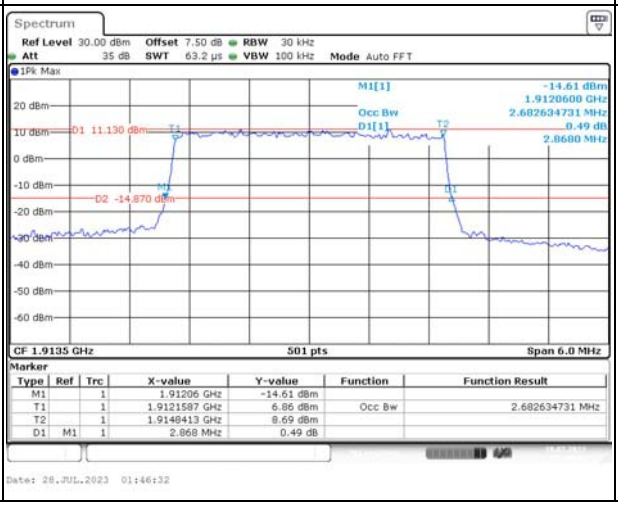
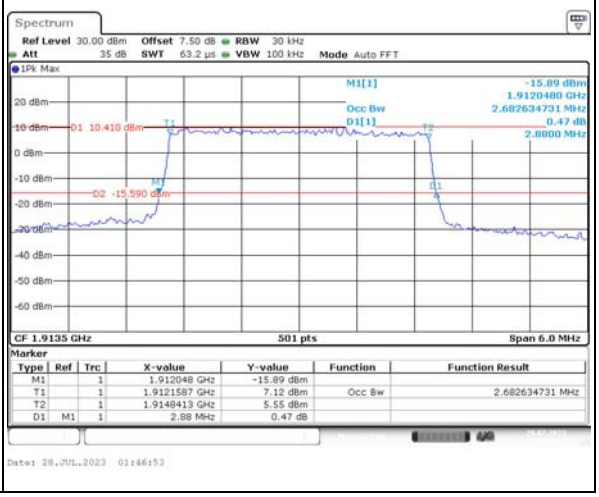
| FCC §2.1051, § 24.238 (a):Out of band emission, Band Edge | |
|---|---|
| **Result:** | **Pass, Please refer to the test plots of Out of band emission, Band Edge.** |

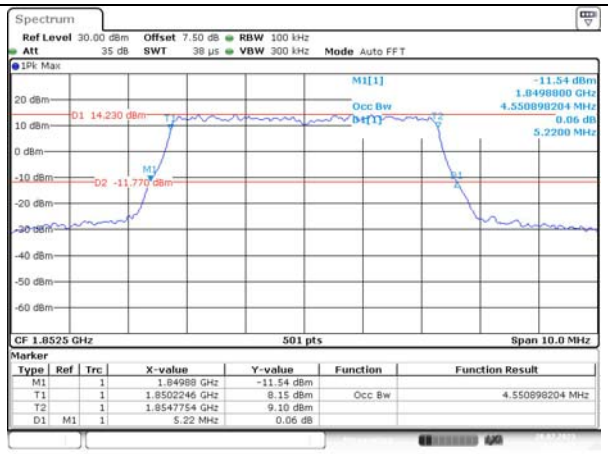
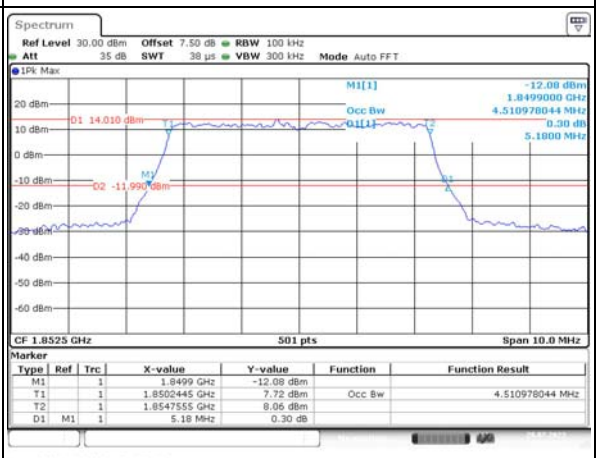
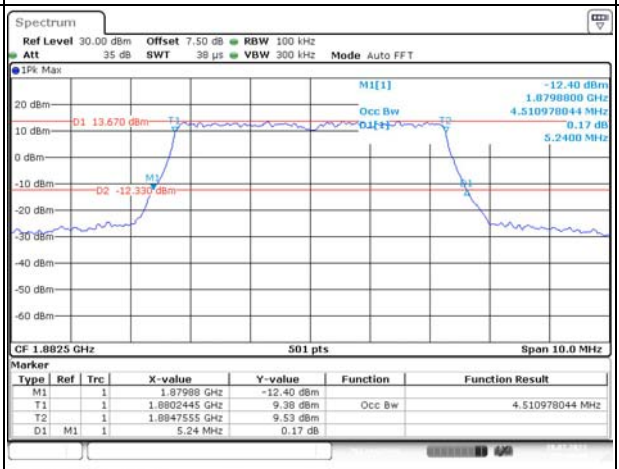
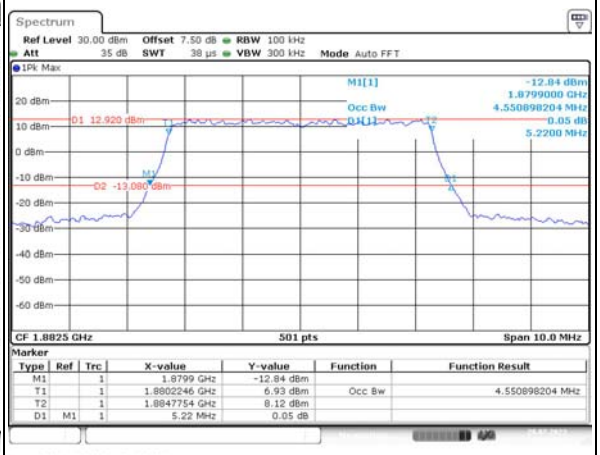
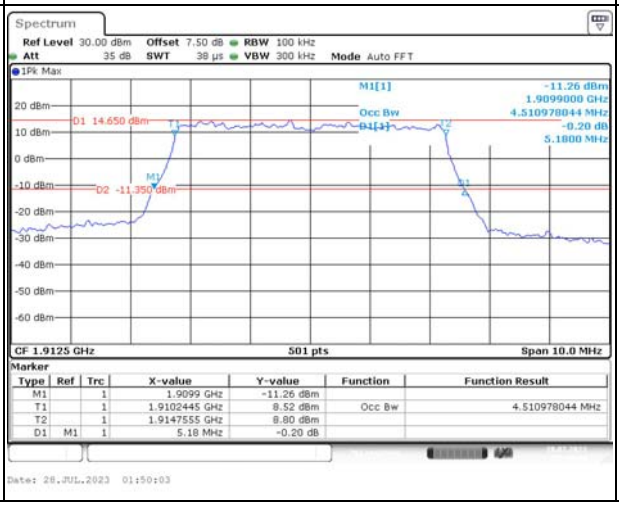
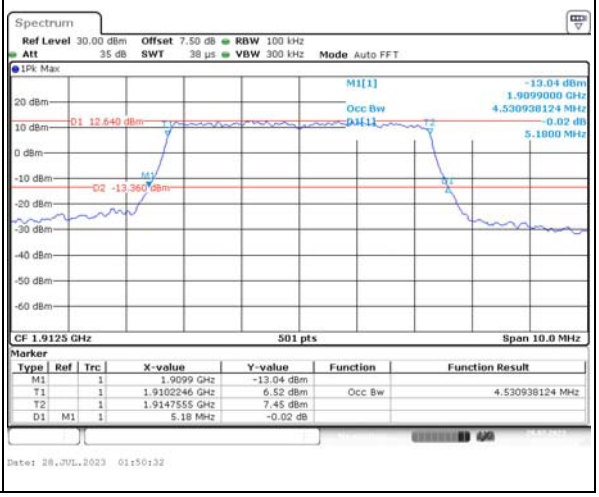
| FCC §2.1055, §24.235: Frequency Stability | | | | | | |
|---|---|---|---|---|---|---|
| Test Mode: | 20M QPSK | Test Channel: Lowest for Lower Edge, Highest for Upper Edge | | | | |
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.8 | 1850.978 | 1850.000 | 1913.945 | 1915.000 |
| | -20 | 3.8 | 1850.911 | 1850.000 | 1913.961 | 1915.000 |
| | -10 | 3.8 | 1850.956 | 1850.000 | 1913.962 | 1915.000 |
| | 0 | 3.8 | 1850.958 | 1850.000 | 1913.904 | 1915.000 |
| | 10 | 3.8 | 1850.977 | 1850.000 | 1913.986 | 1915.000 |
| | 20 | 3.8 | 1850.978 | 1850.000 | 1913.942 | 1915.000 |
| | 30 | 3.8 | 1850.923 | 1850.000 | 1913.997 | 1915.000 |
| | 40 | 3.8 | 1850.924 | 1850.000 | 1913.965 | 1915.000 |
| | 50 | 3.8 | 1850.978 | 1850.000 | 1913.934 | 1915.000 |
| Frequency Stability vs. Voltage | 20 | 3.65 | 1850.917 | 1850.000 | 1913.995 | 1915.000 |
| | 20 | 4.35 | 1850.921 | 1850.000 | 1913.960 | 1915.000 |
| | | | | | **Result:** | **Pass** |

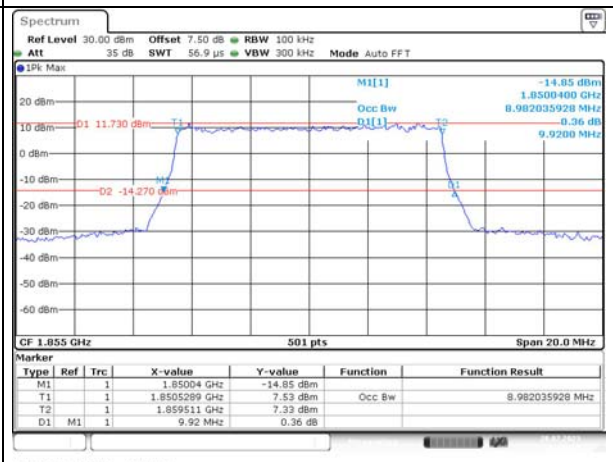
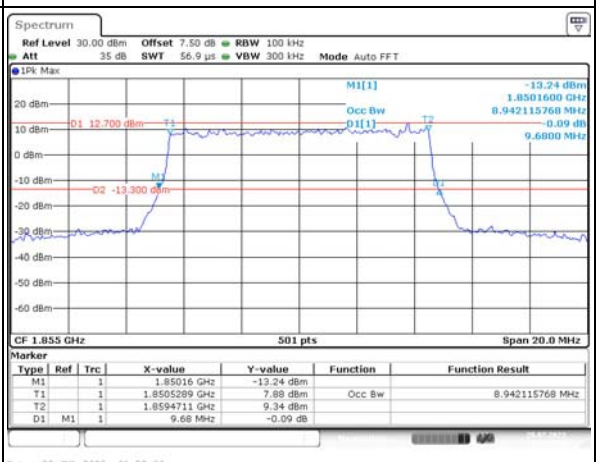
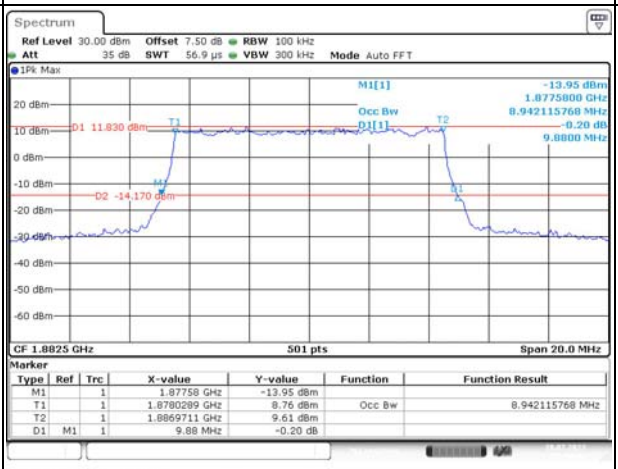
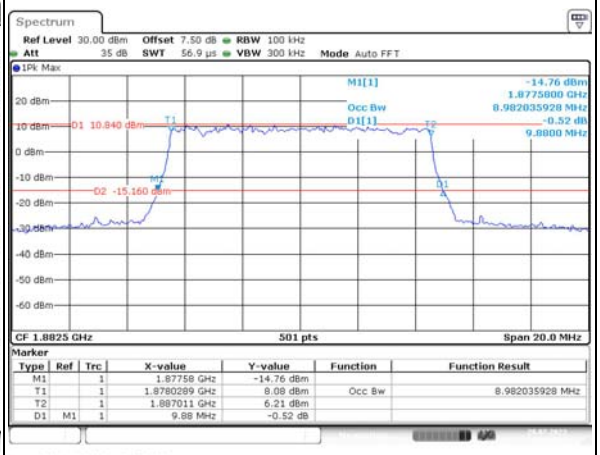
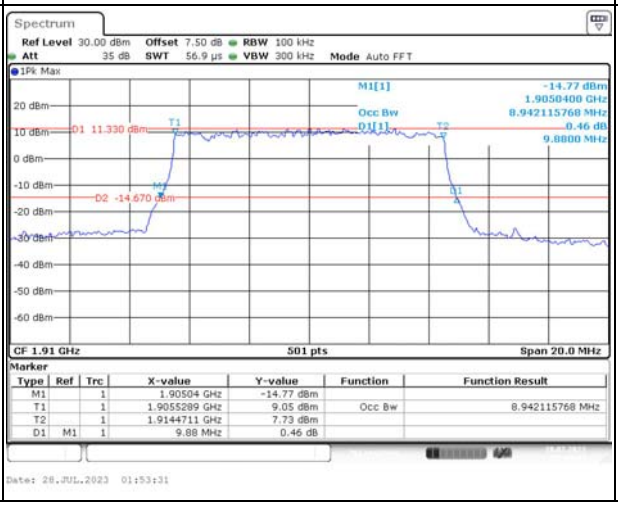
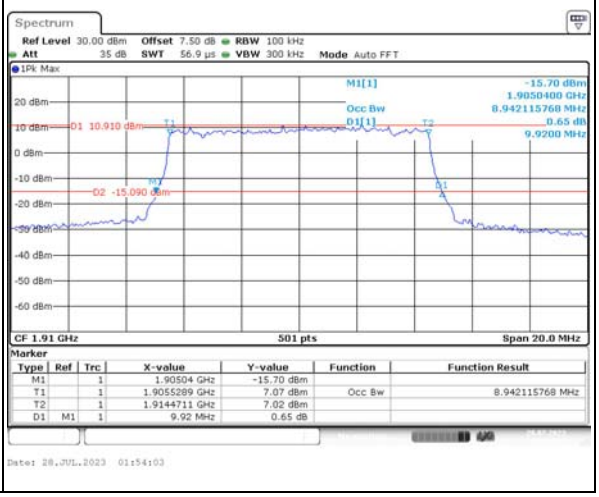
| Test Mode: | 20M 16QAM | Test Channel: Lowest for Lower Edge, Highest for Upper Edge | | | | |
|---|---|---|---|---|---|---|
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.8 | 1850.595 | 1850.000 | 1914.087 | 1915.000 |
| | -20 | 3.8 | 1850.550 | 1850.000 | 1914.044 | 1915.000 |
| | -10 | 3.8 | 1850.530 | 1850.000 | 1914.044 | 1915.000 |
| | 0 | 3.8 | 1850.579 | 1850.000 | 1914.020 | 1915.000 |
| | 10 | 3.8 | 1850.583 | 1850.000 | 1914.077 | 1915.000 |
| | 20 | 3.8 | 1850.579 | 1850.000 | 1914.022 | 1915.000 |
| | 30 | 3.8 | 1850.557 | 1850.000 | 1914.012 | 1915.000 |
| | 40 | 3.8 | 1850.544 | 1850.000 | 1914.029 | 1915.000 |
| | 50 | 3.8 | 1850.572 | 1850.000 | 1914.030 | 1915.000 |
| Frequency Stability vs. Voltage | 20 | 3.65 | 1850.534 | 1850.000 | 1914.015 | 1915.000 |
| | 20 | 4.35 | 1850.502 | 1850.000 | 1914.094 | 1915.000 |
| | | | | | **Result:** | **Pass** |

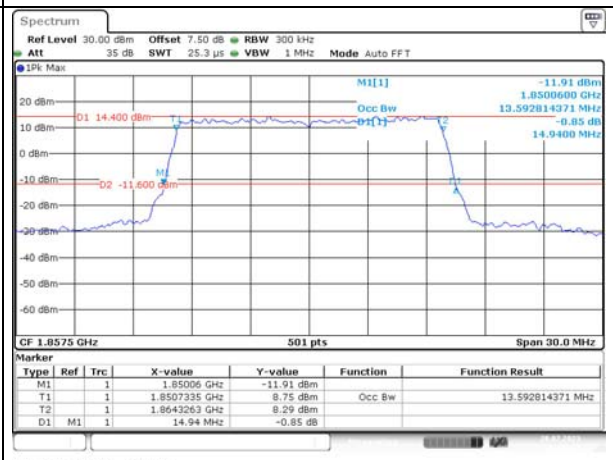
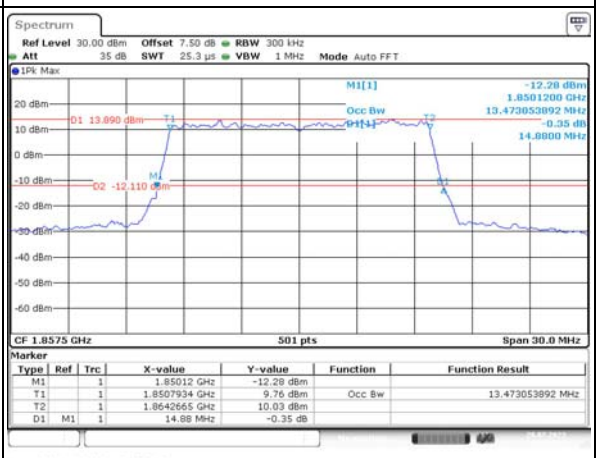
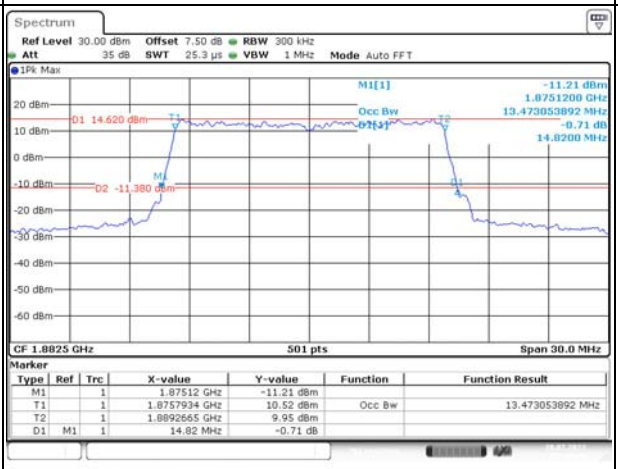
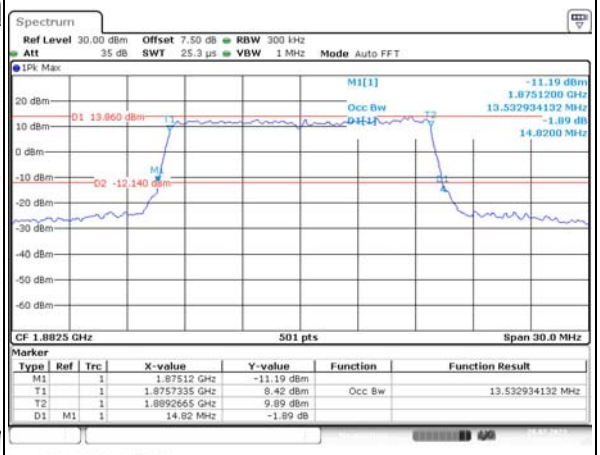
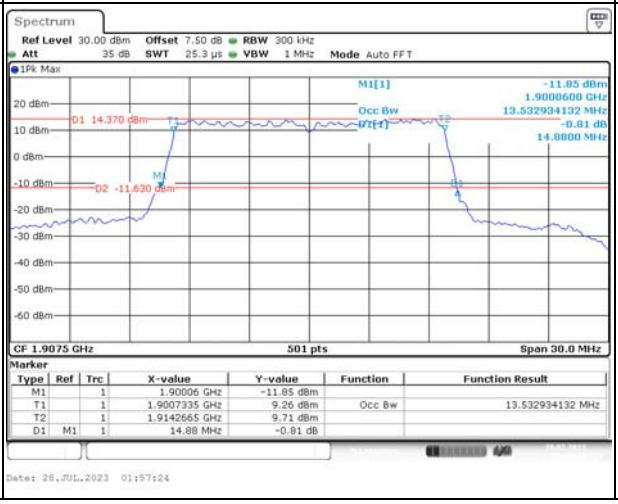
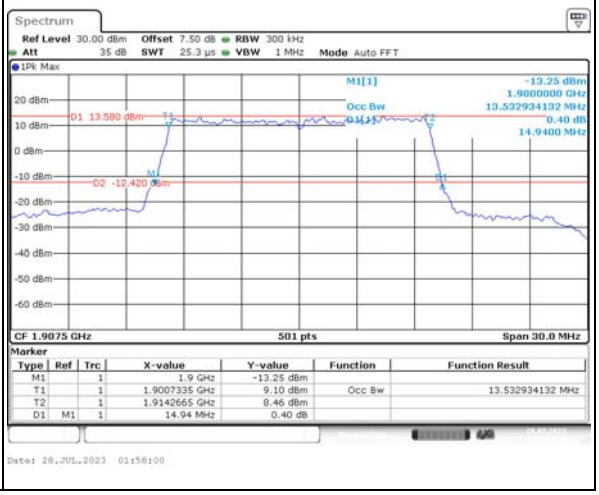
**Test Plots**(Note: The 7.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer)**:**

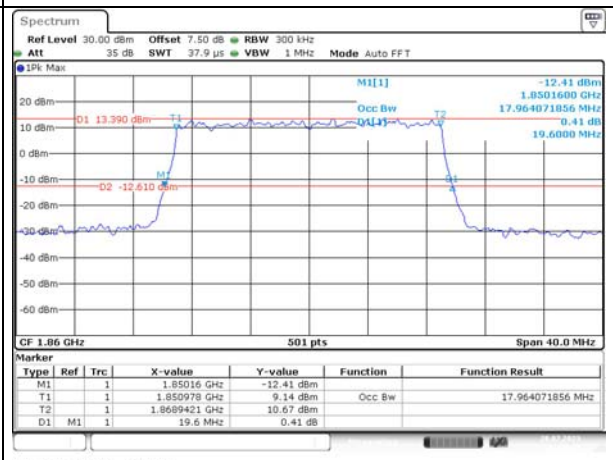
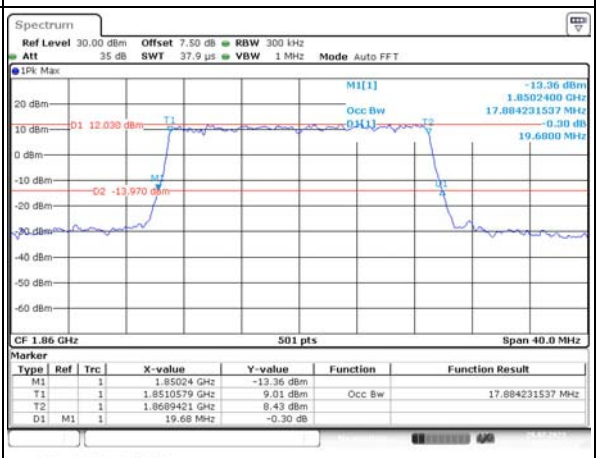
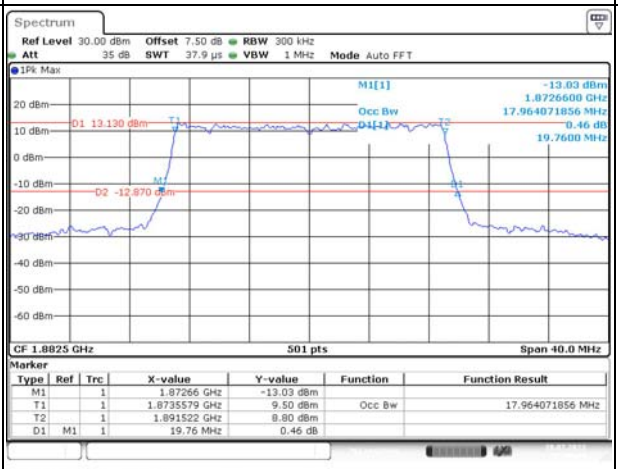
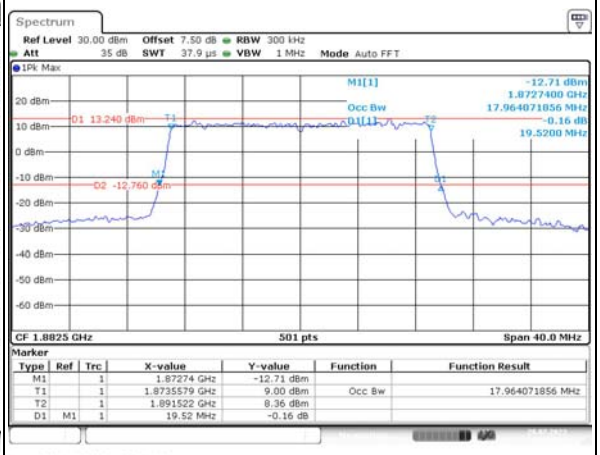
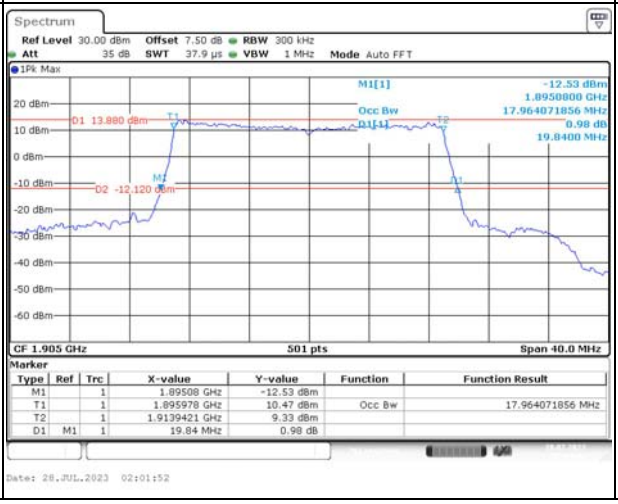
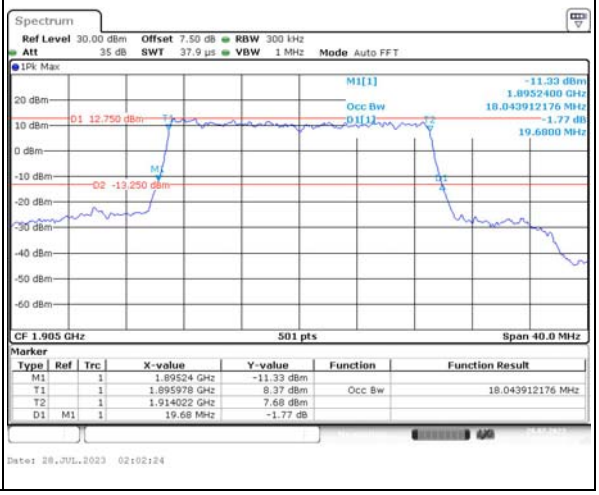
| **Occupied Bandwidth** | | |
|---|---|---|
| **Channel** | 1.4MHz Bandwidth QPSK | 1.4MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

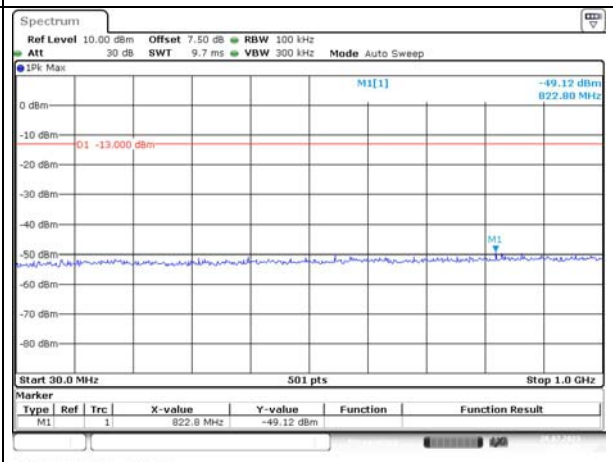
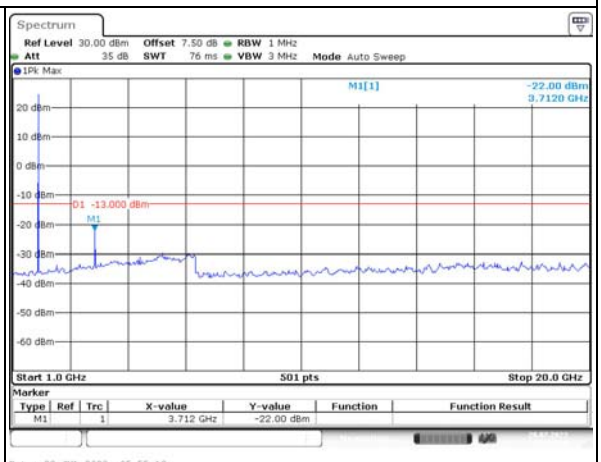
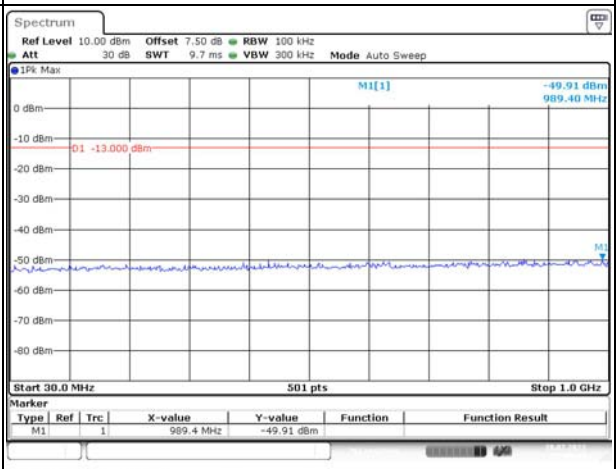
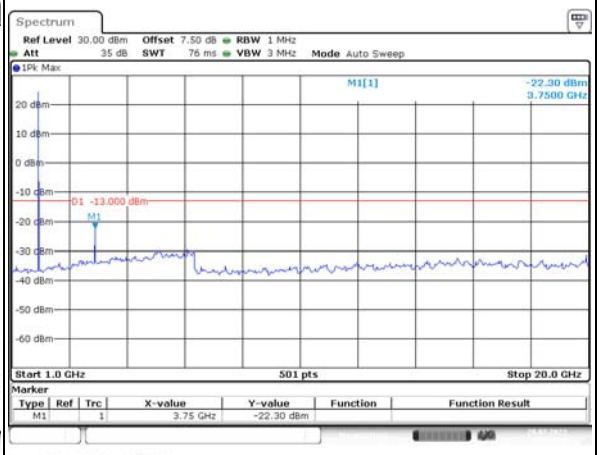
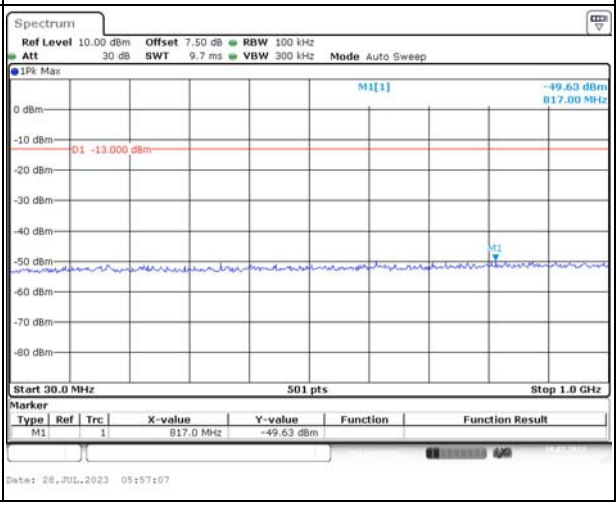
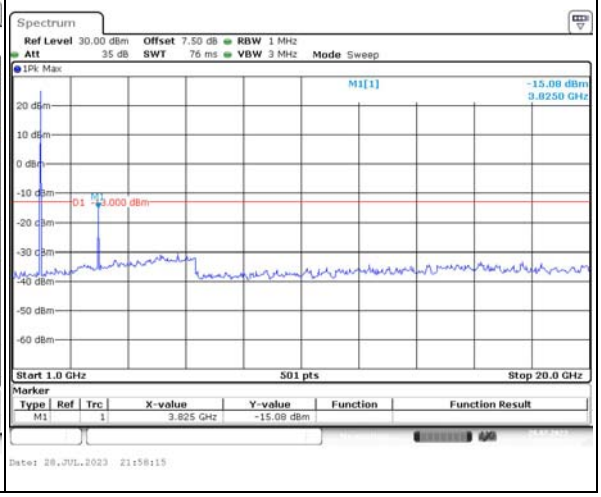
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 3MHz Bandwidth QPSK | 3MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

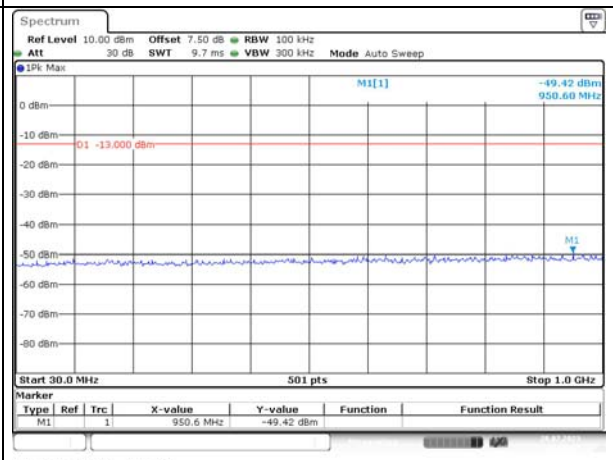
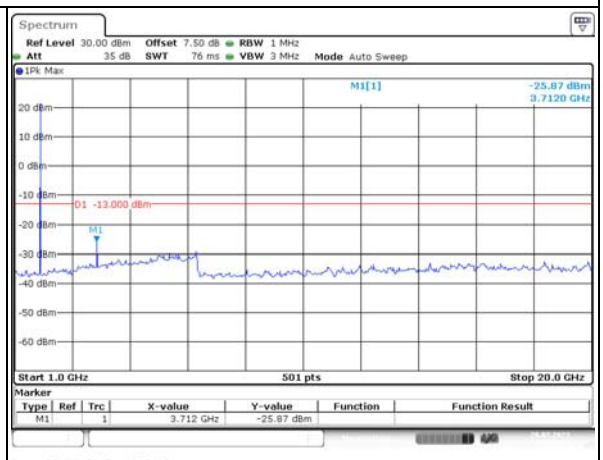
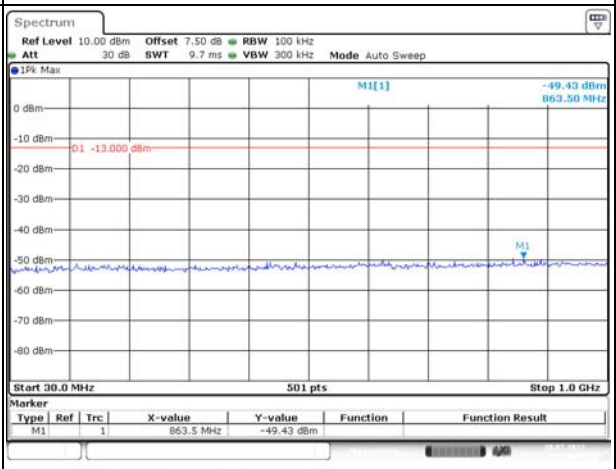
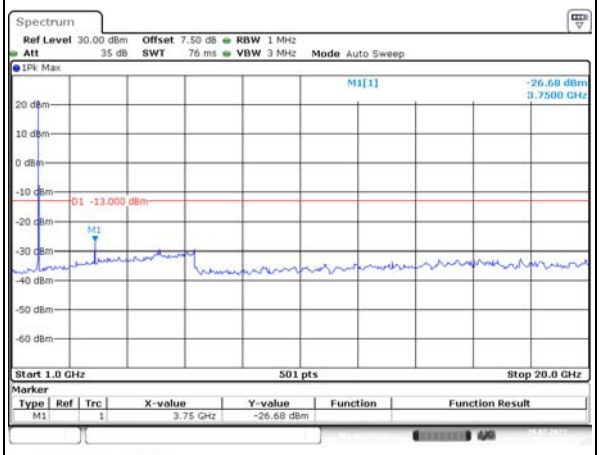
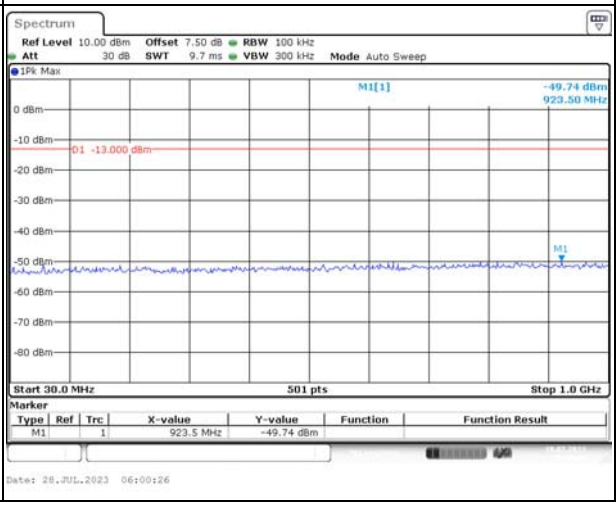
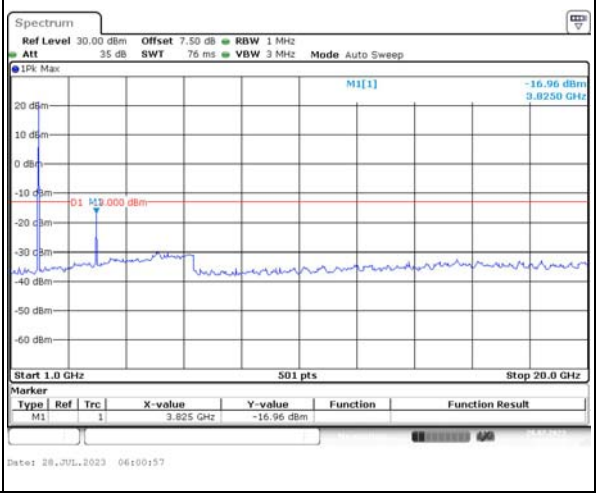
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 5MHz Bandwidth QPSK | 5MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

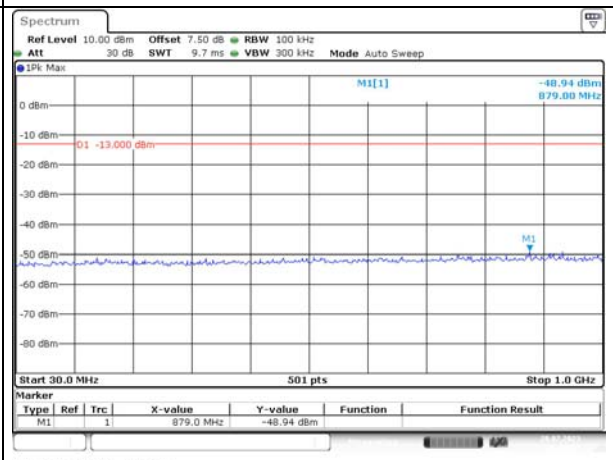
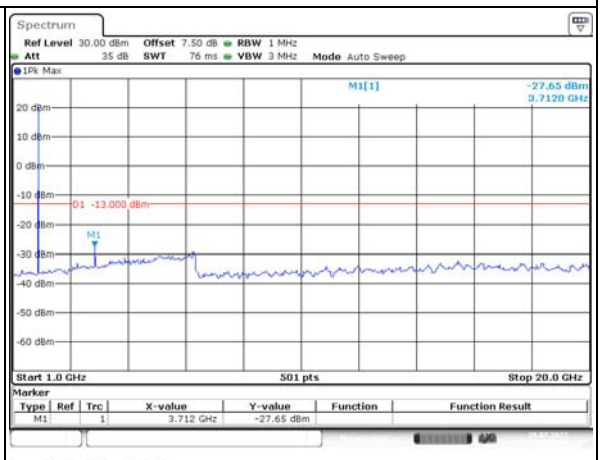
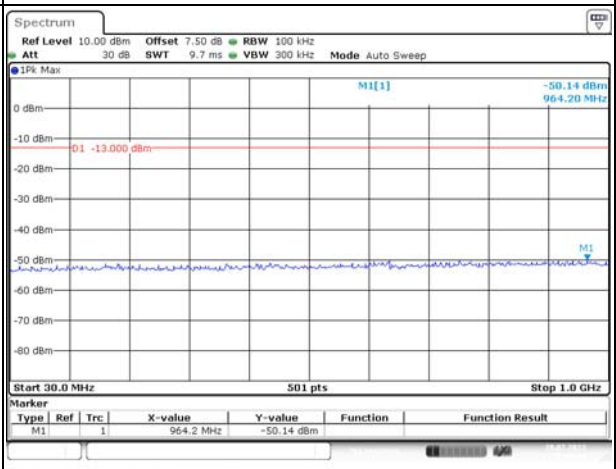
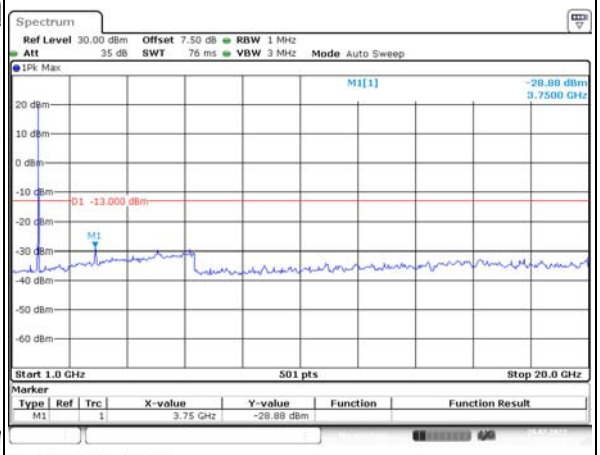
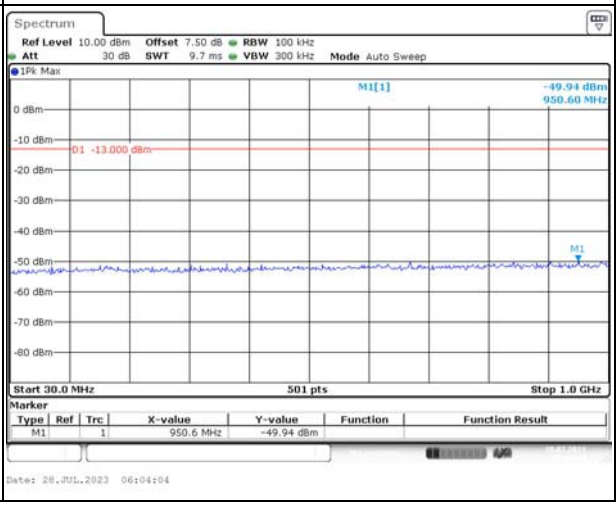
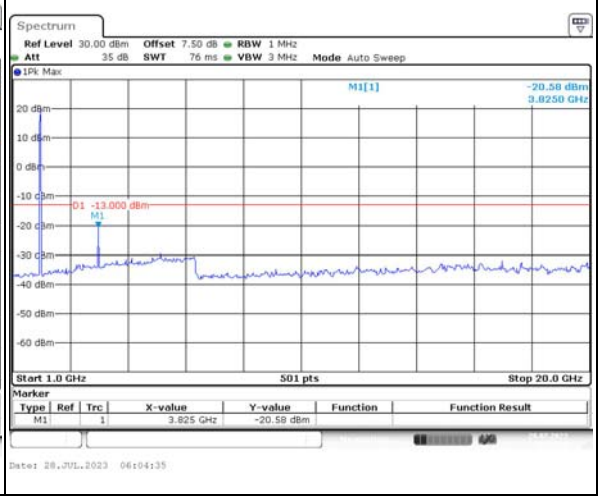
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 10MHz Bandwidth QPSK | 10MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

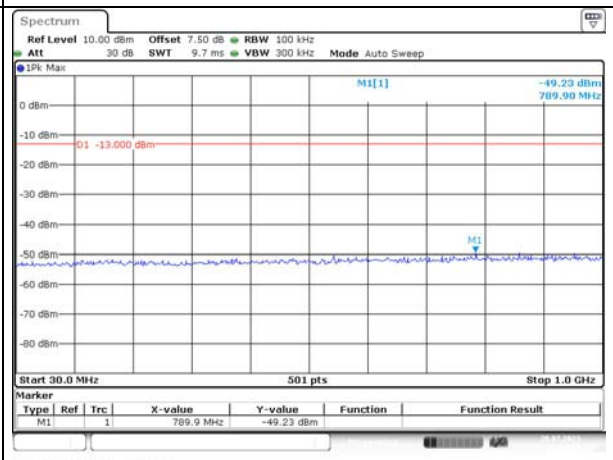
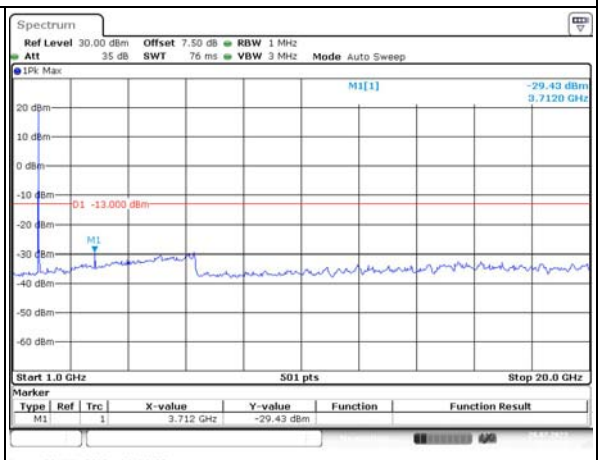
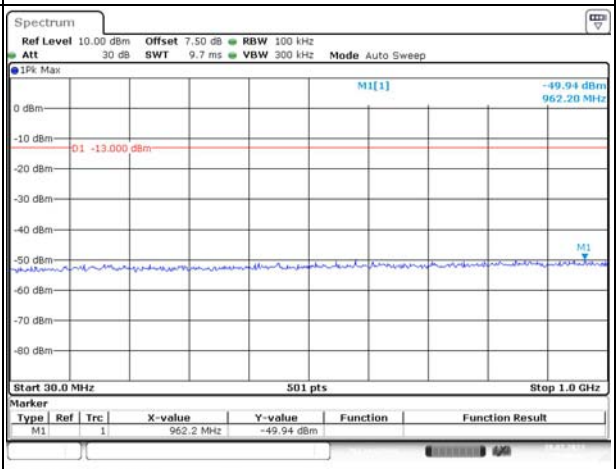
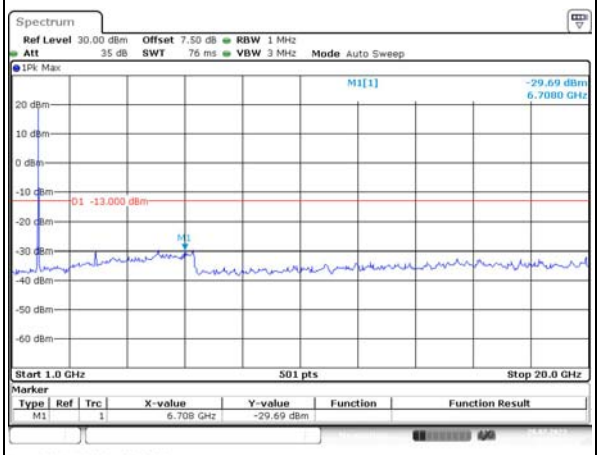
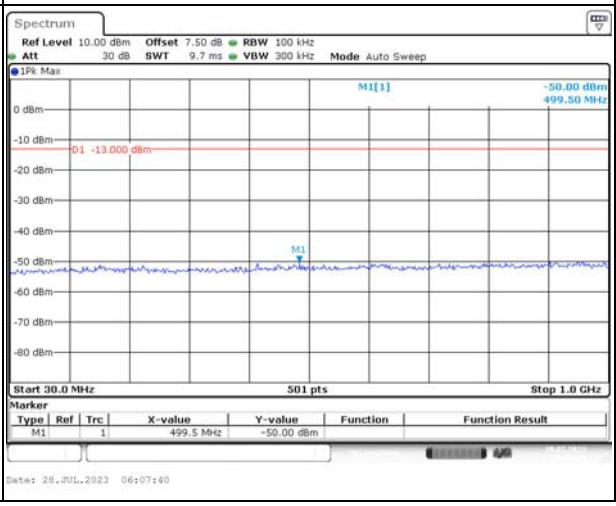
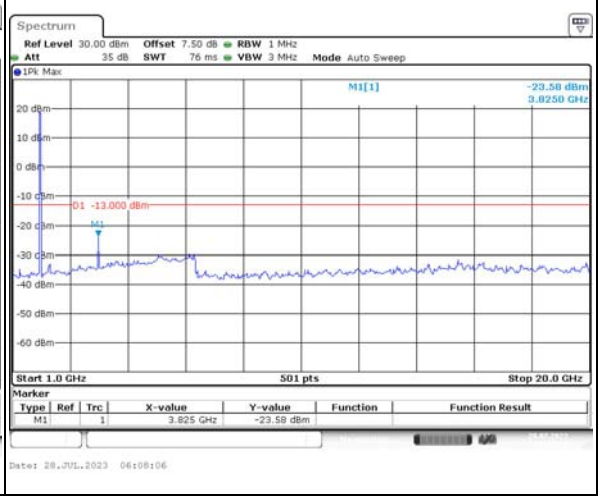
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **15MHz Bandwidth QPSK** | **15MHz Bandwidth 16QAM** |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

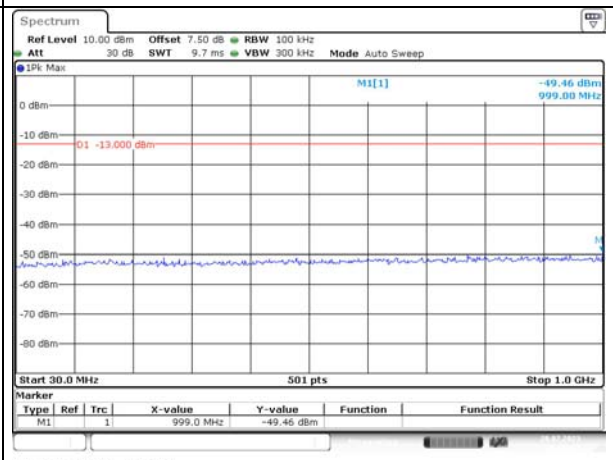
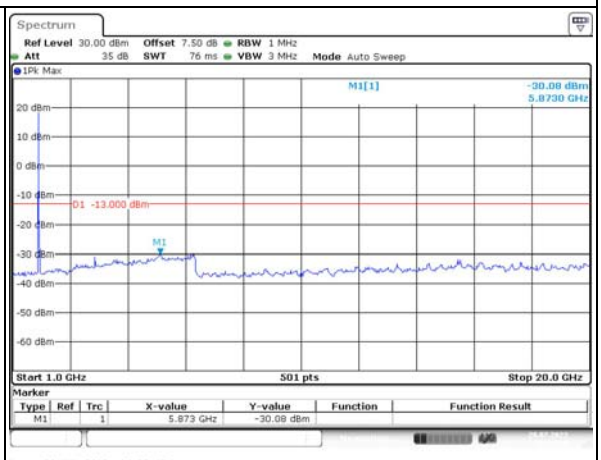
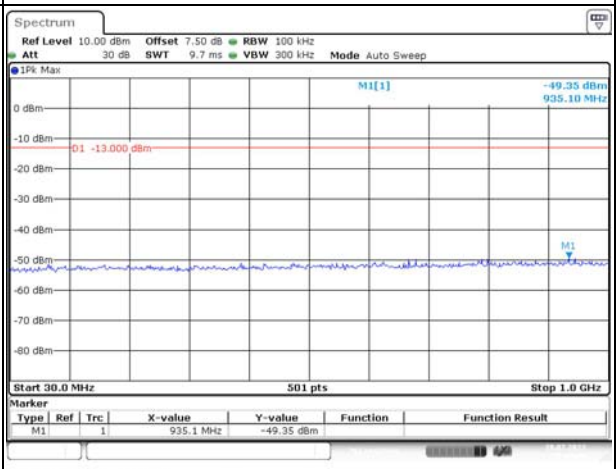
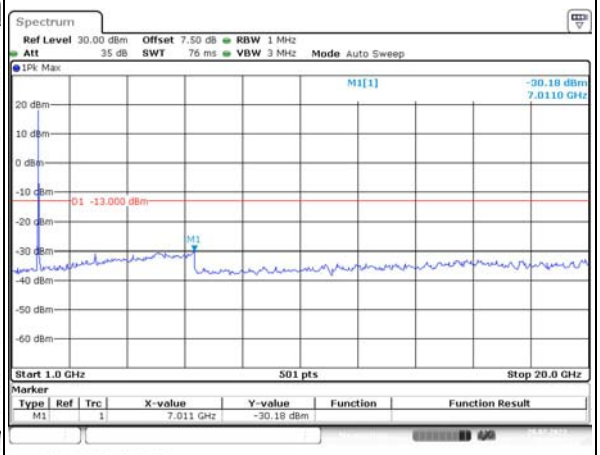
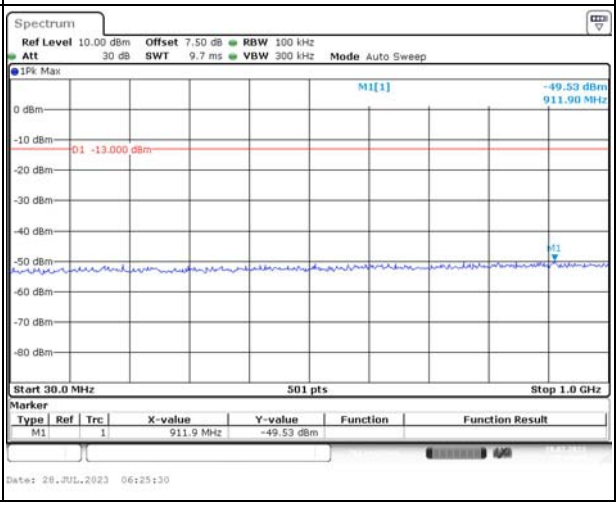
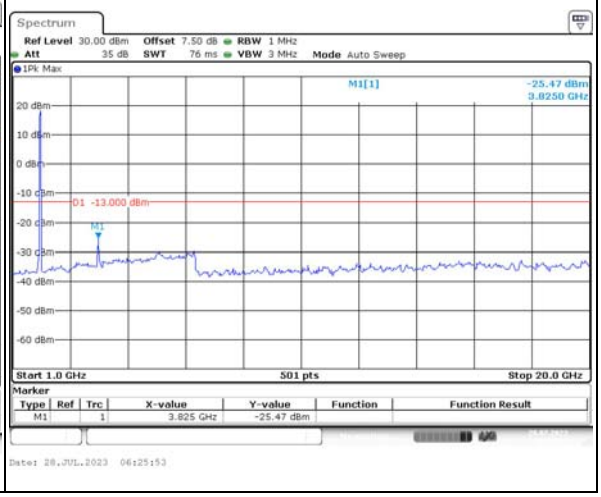
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **20MHz Bandwidth QPSK** | **20MHz Bandwidth 16QAM** |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

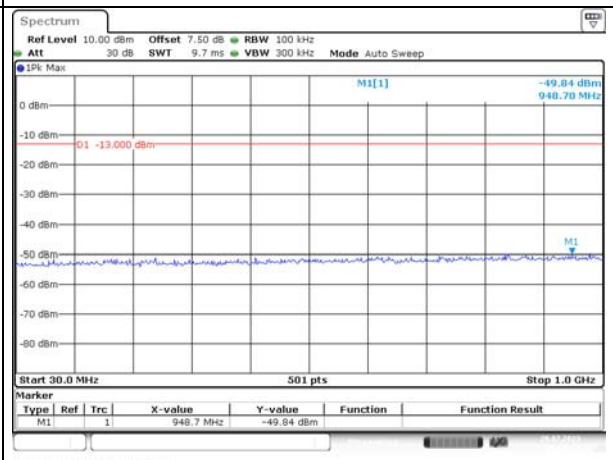
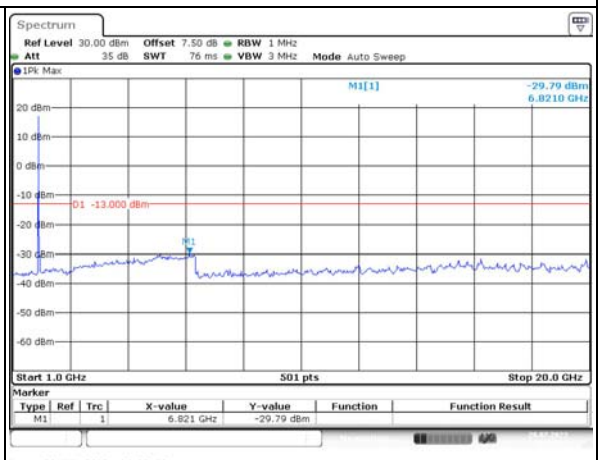
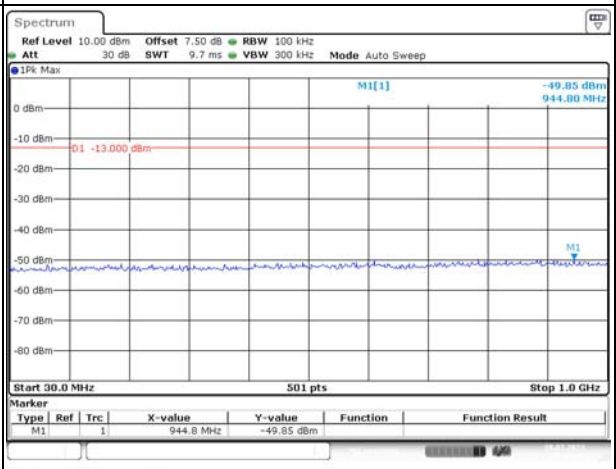
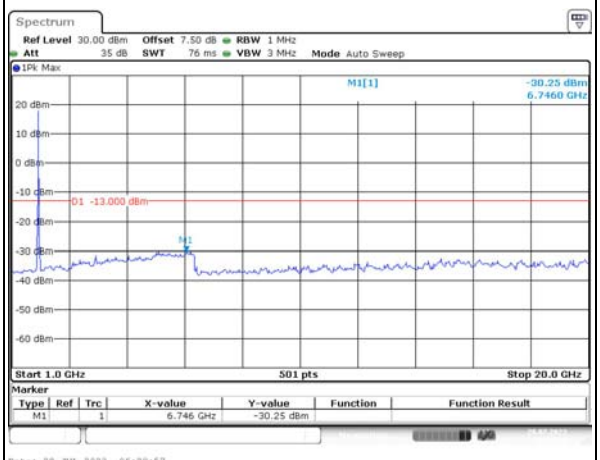
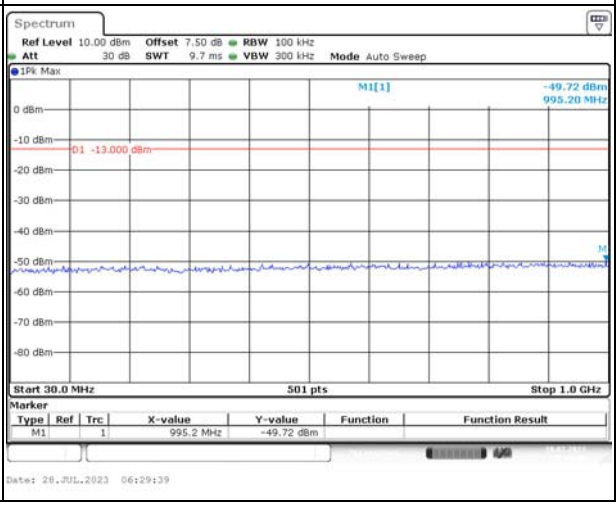
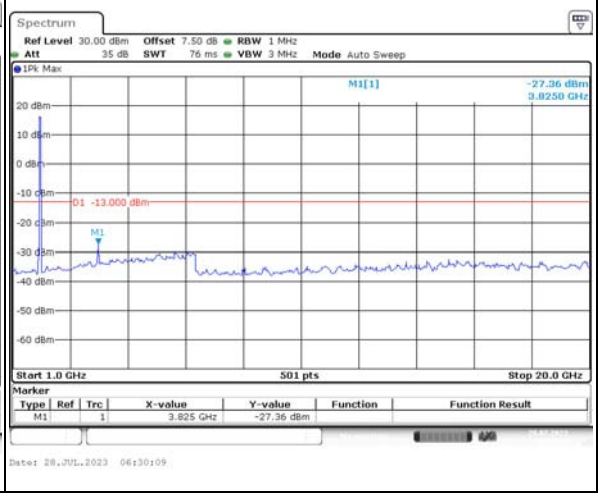
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **1.4MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

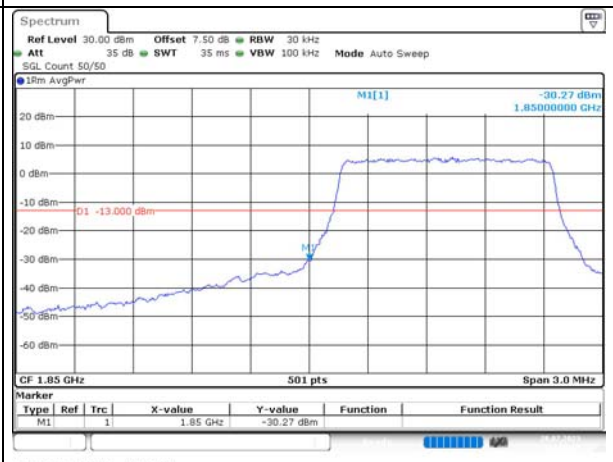
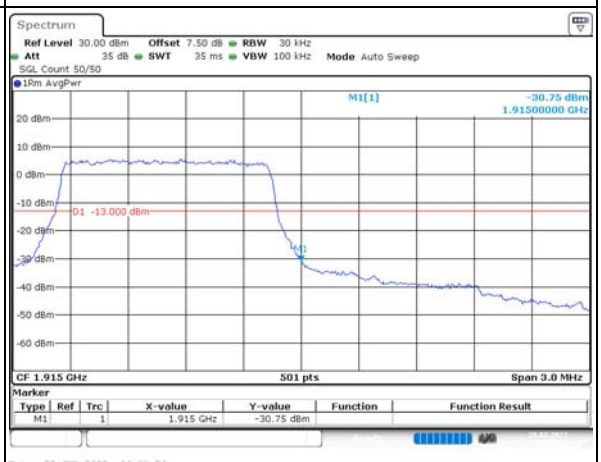
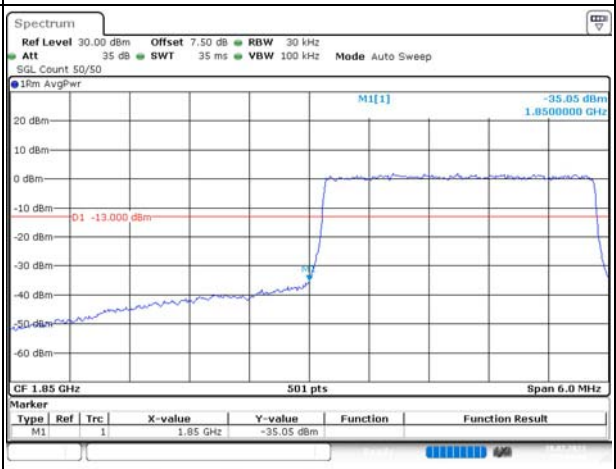
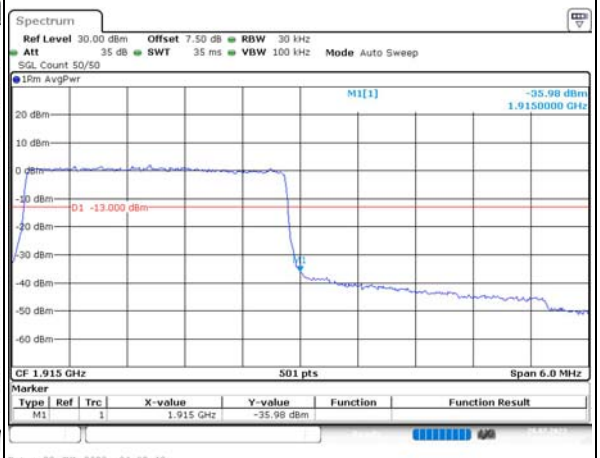
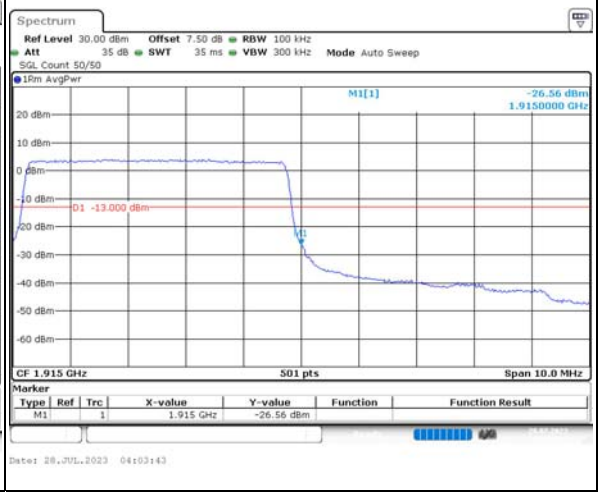
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **3MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

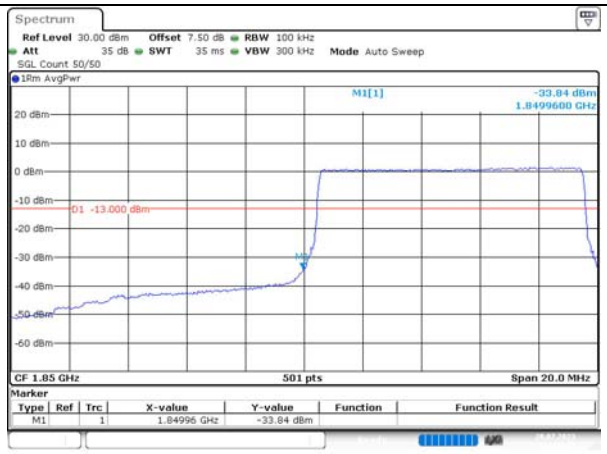
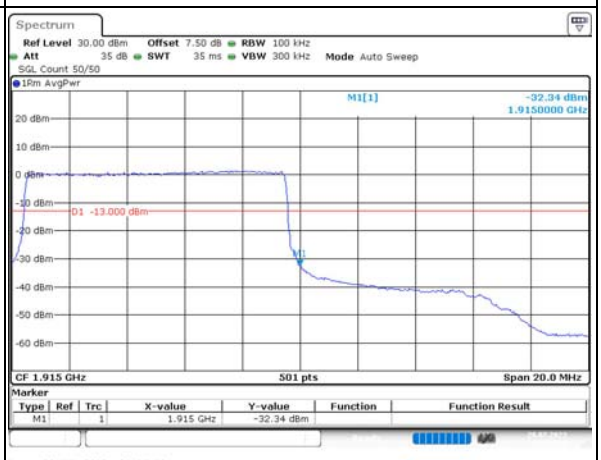
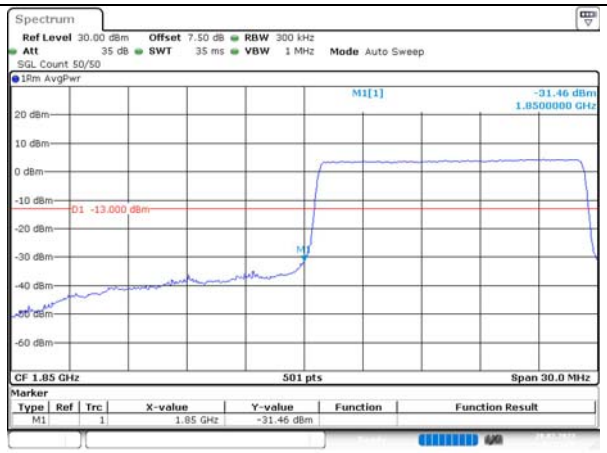
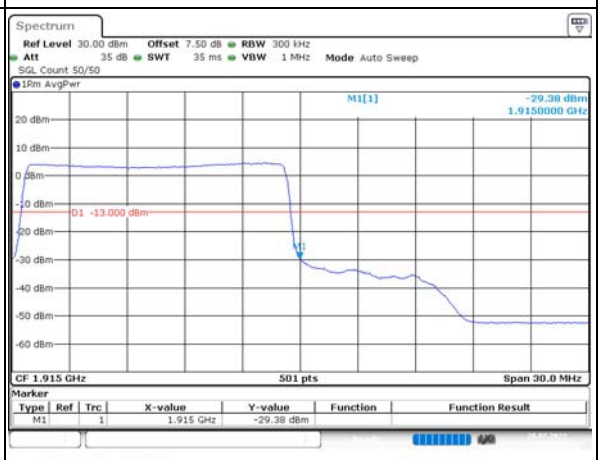
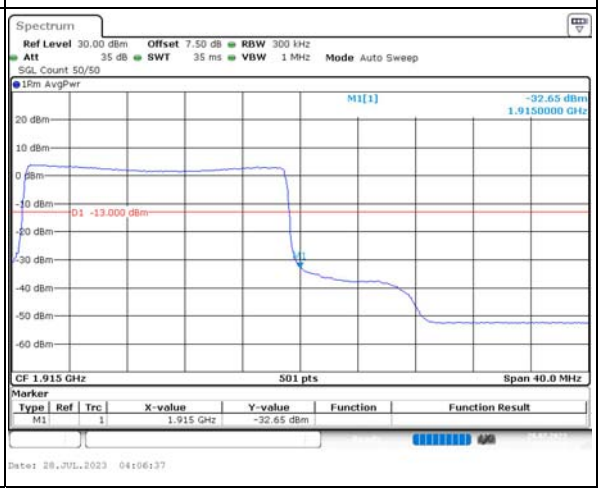
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **5MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

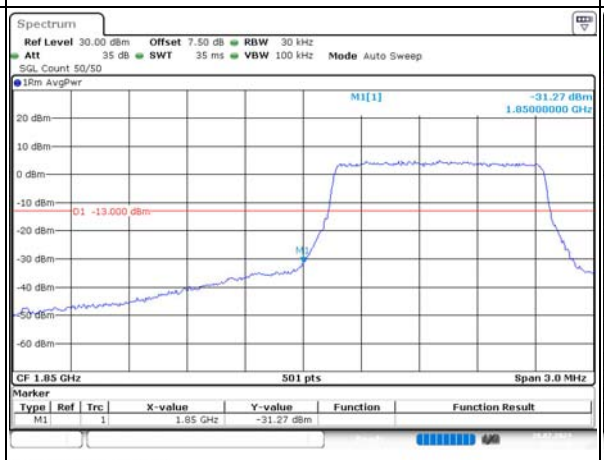
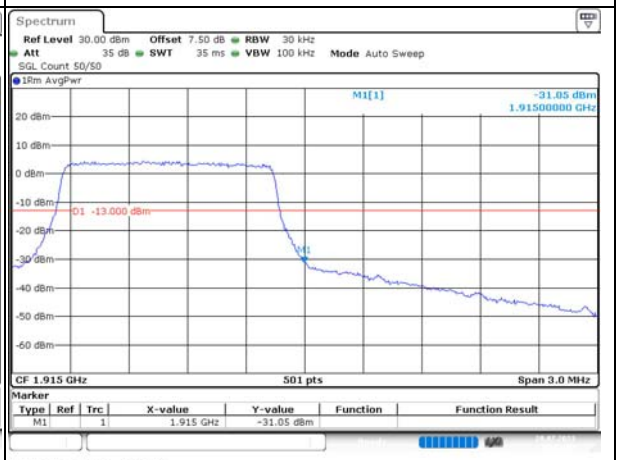
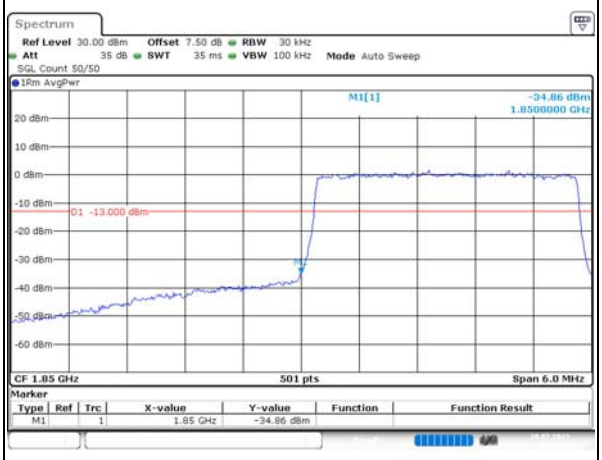
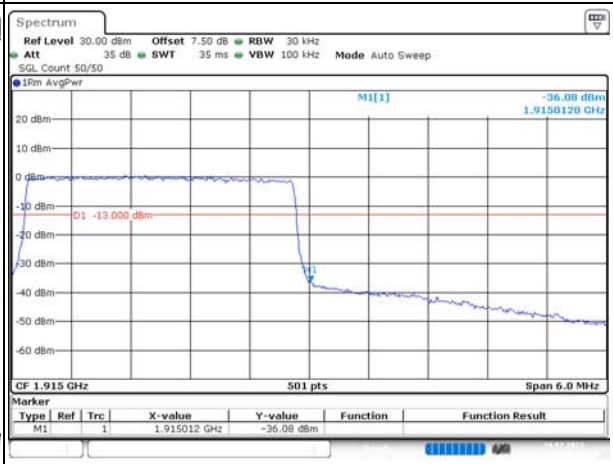
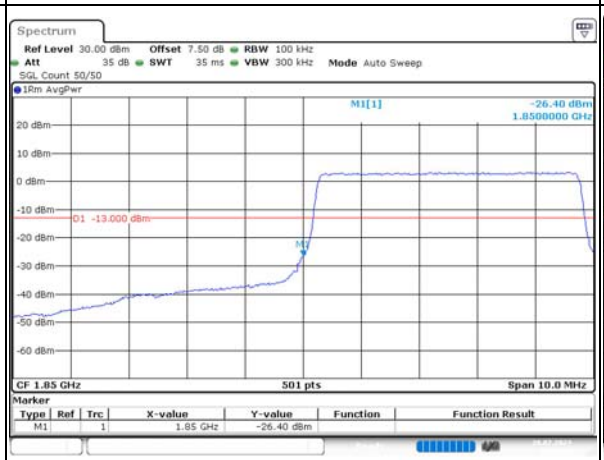
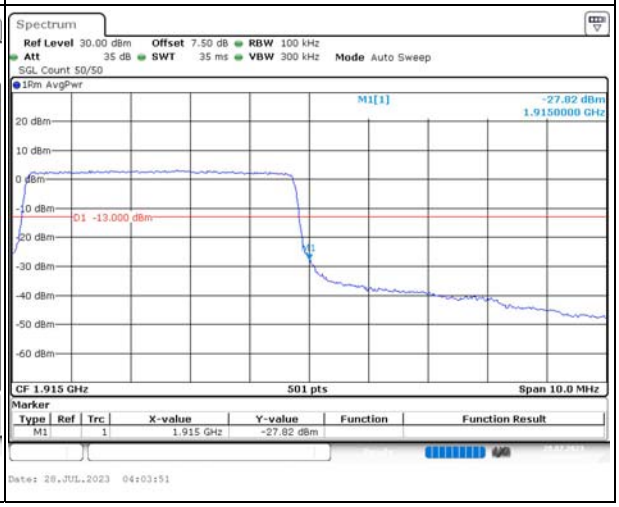
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **10MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

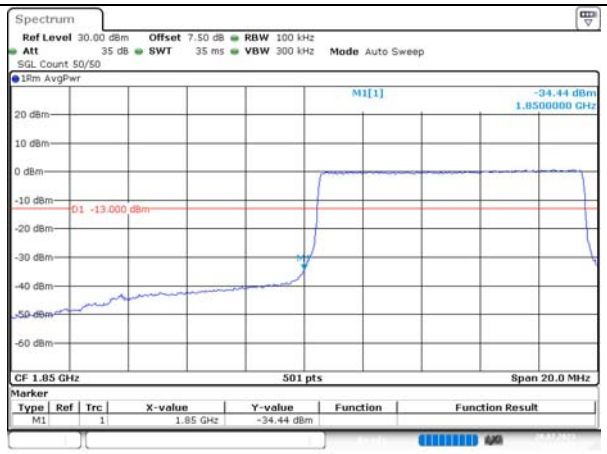
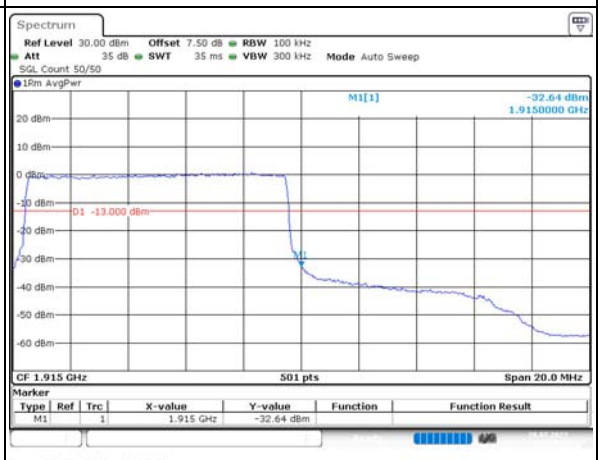
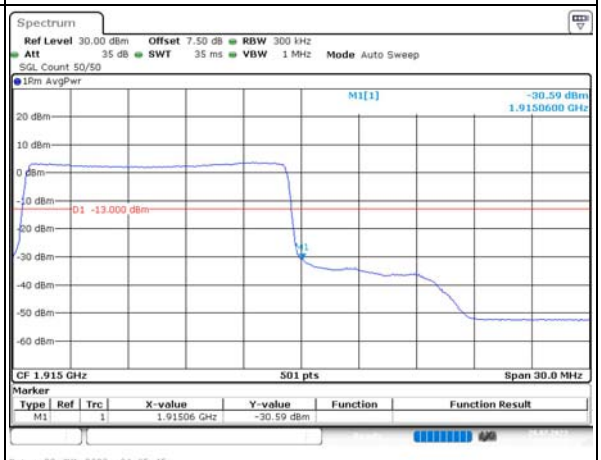
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **15MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **20MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

| Out of band emission, Band Edge | | |
|---|---|---|
| **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 |  |  |

## 4.12 Antenna Port Test Data and Results for LTE Band 26

| | | | |
|---|---|---|---|
| Serial Number: | 28LK-1 | Test Date: | 2023/7/28~2023/8/31 |
| Test Site: | RF | Test Mode: | Transmitting |
| Tester: | One Luo | Test Result: | Pass |

| **Environmental Conditions:** | | | | | |
|---|---|---|---|---|---|
| Temperature: (℃) | 25.2~26.8 | Relative Humidity: (%) | 42~55 | ATM Pressure: (kPa) | 99.7~100.3 |

**Test Equipment List and Details:**

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| R&S | Spectrum Analyzer | FSV40 | 101474 | 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 |
| Mini-Circuits | DC Block | BLK-18-S+ | 1554403 | Each time | N/A |
| Weinschel | Power Splitter | 1515 | RA914 | 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 | 2022/9/29 | 2023/9/28 |
| 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 For 90S (MHz) | Highest Frequency For 90S (MHz) | Channel Cross 90S and 22H | Lowest Frequency For 22H (MHz) | Middle Frequency For 22H (MHz) | Highest Frequency For 22H (MHz) |
|---|---|---|---|---|---|---|
| 1.4MHz | 814.7 | 823.3 | 824 | 824.7 | 831.5 | 848.3 |
| 3MHz | 815.5 | 822.5 | 824 | 825.5 | 831.5 | 847.5 |
| 5MHz | 816.5 | 821.5 | 824 | 826.5 | 831.5 | 846.5 |
| 10MHz | 819 | / | 824 | 829 | 831.5 | 844 |
| 15MHz | 821.5 | / | 824 | 831.5 | 836.5 | 841.5 |

**4.12.1 Test Data for Part 90S:**

| FCC§2.1046; § 90.635: RF Output Power | | | | | | |
|---|---|---|---|---|---|---|
| Test Bandwidth & Modulation | Resource Block & RB offset | Conducted Average Output Power(dBm) | | | Maximum ERP (dBm) | ERP Limit (dBm) |
| | | Lowest Channel For 90S | Highest Channel For 90S | Cross Channel | | |
| 1.4MHz QPSK | RB1#0 | 23.26 | 23.24 | 23.4 | 21.6 | 50 |
| | RB1#3 | 23.4 | 23.08 | 23.29 | | |
| | RB1#5 | 23.18 | 22.97 | 22.97 | | |
| | RB3#0 | 23.29 | 22.86 | 22.87 | | |
| | RB3#3 | 23.29 | 22.7 | 23.06 | | |
| | RB6#0 | 22.32 | 22.56 | 23.03 | | |
| 1.4MHz 16QAM | RB1#0 | 22.37 | 22.49 | 22.97 | 21.17 | 50 |
| | RB1#3 | 22.57 | 22.34 | 22.62 | | |
| | RB1#5 | 22.37 | 22.14 | 22.68 | | |
| | RB3#0 | 22.3 | 21.97 | 22.24 | | |
| | RB3#3 | 22.33 | 21.9 | 22.25 | | |
| | RB6#0 | 21.36 | 21.73 | 21.86 | | |
| 3MHz QPSK | RB1#0 | 23.35 | 23.24 | 23.36 | 21.56 | 50 |
| | RB1#8 | 23.32 | 23.16 | 23.36 | | |
| | RB1#14 | 23.32 | 23.16 | 23.18 | | |
| | RB6#0 | 22.24 | 23.1 | 23.23 | | |
| | RB6#9 | 22.34 | 22.98 | 23.13 | | |
| | RB15#0 | 22.31 | 22.84 | 22.86 | | |
| 3MHz 16QAM | RB1#0 | 22.46 | 22.73 | 23.16 | 21.36 | 50 |
| | RB1#8 | 22.45 | 22.71 | 23.03 | | |
| | RB1#14 | 22.5 | 22.53 | 23.02 | | |
| | RB6#0 | 21.26 | 22.34 | 22.49 | | |
| | RB6#9 | 21.38 | 22.21 | 22.6 | | |
| | RB15#0 | 21.3 | 22.03 | 22.47 | | |
| 5MHz QPSK | RB1#0 | 23.21 | 23.24 | 23.69 | 21.89 | 50 |
| | RB1#13 | 23.3 | 23.13 | 23.28 | | |
| | RB1#24 | 23.19 | 23.04 | 23.52 | | |
| | RB15#0 | 22.24 | 22.95 | 23.41 | | |
| | RB15#10 | 22.38 | 22.86 | 23.3 | | |
| | RB25#0 | 22.32 | 22.84 | 23.19 | | |
| 5MHz 16QAM | RB1#0 | 22.49 | 22.71 | 23.14 | 21.34 | 50 |
| | RB1#13 | 22.66 | 22.55 | 22.55 | | |
| | RB1#24 | 22.52 | 22.43 | 22.39 | | |
| | RB15#0 | 21.23 | 22.38 | 22.86 | | |
| | RB15#10 | 21.37 | 22.2 | 22.62 | | |
| | RB25#0 | 21.33 | 22.04 | 22.16 | | |
| 10MHz QPSK | RB1#0 | 23.28 | / | 23.24 | 21.68 | 50 |
| | RB1#25 | 23.48 | / | 23.1 | | |
| | RB1#49 | 23.42 | / | 23.01 | | |
| | RB25#0 | 22.27 | / | 22.85 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | RB25#25 | 22.46 | / | 22.7 | | |
| | RB50#0 | 22.39 | / | 22.52 | | |
| 10MHz 16QAM | RB1#0 | 22.46 | / | 22.48 | 20.82 | 50 |
| | RB1#25 | 22.62 | / | 22.33 | | |
| | RB1#49 | 22.52 | / | 22.19 | | |
| | RB25#0 | 21.31 | / | 22.02 | | |
| | RB25#25 | 21.5 | / | 21.93 | | |
| | RB50#0 | 21.38 | / | 21.81 | | |
| 15MHz QPSK | RB1#0 | 23.17 | / | 23.24 | 21.53 | 50 |
| | RB1#38 | 23.33 | / | 23.16 | | |
| | RB1#74 | 23.31 | / | 23.13 | | |
| | RB36#0 | 22.26 | / | 22.99 | | |
| | RB36#39 | 22.37 | / | 22.91 | | |
| | RB75#0 | 22.35 | / | 22.8 | | |
| 15MHz 16QAM | RB1#0 | 22.79 | / | 22.66 | 21.16 | 50 |
| | RB1#38 | 22.91 | / | 22.52 | | |
| | RB1#74 | 22.96 | / | 22.43 | | |
| | RB36#0 | 21.23 | / | 22.28 | | |
| | RB36#39 | 21.41 | / | 22.11 | | |
| | RB75#0 | 21.3 | / | 22.02 | | |

Note:
ERP= Conducted Power(dBm) - $L_C$(dB) + $G_T$(dBd)
$G_T$(dBd)=$G_T$(dBi)-2.15

| **Result:** | **Pass** |
|---|---|

**FCC §2.1049, §90.209: Occupied Bandwidth**

| Operation Mode | 99% Occupied Bandwidth (MHz) | | | 26 dB Occupied Bandwidth (MHz) | | |
|---|---|---|---|---|---|---|
| | Lowest For 90S | Highest For 90S | Cross | Lowest For 90S | Highest For 90S | Cross |
| 1.4MHz QPSK | 1.096 | 1.102 | 1.096 | 1.314 | 1.317 | 1.312 |
| 1.4MHz 16QAM | 1.09 | 1.09 | 1.102 | 1.284 | 1.293 | 1.324 |
| 3MHz QPSK | 2.683 | 2.683 | 2.683 | 2.88 | 2.874 | 2.874 |
| 3MHz 16QAM | 2.683 | 2.683 | 2.683 | 2.868 | 2.886 | 2.898 |
| 5MHz QPSK | 4.491 | 4.511 | 4.511 | 4.94 | 4.97 | 5.014 |
| 5MHz 16QAM | 4.491 | 4.511 | 4.491 | 4.98 | 4.97 | 4.954 |
| 10MHz QPSK | 8.942 | / | 8.942 | 9.68 | / | 9.625 |
| 10MHz 16QAM | 8.942 | / | 8.942 | 9.56 | / | 9.745 |
| 15MHz QPSK | 13.473 | / | 13.473 | 14.7 | / | 14.97 |
| 15MHz 16QAM | 13.473 | / | 13.473 | 14.58 | / | 14.91 |

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

| **FCC §2.1051, §90.691: Spurious Emissions at Antenna Terminal** | |
|---|---|
| **Result:** | **Pass. Please refer to the test plots of Spurious Emissions at Antenna Terminal.** |

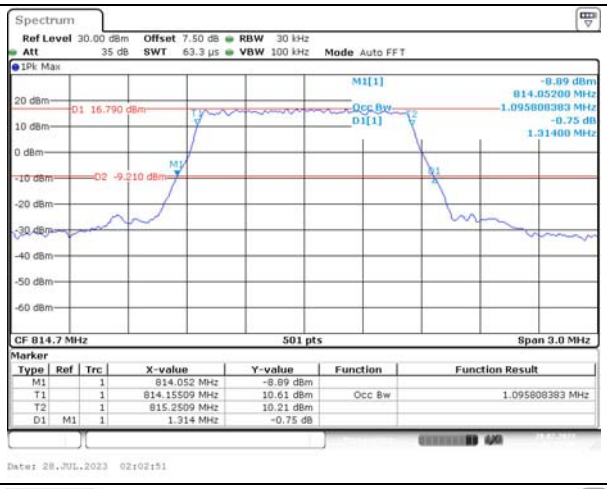
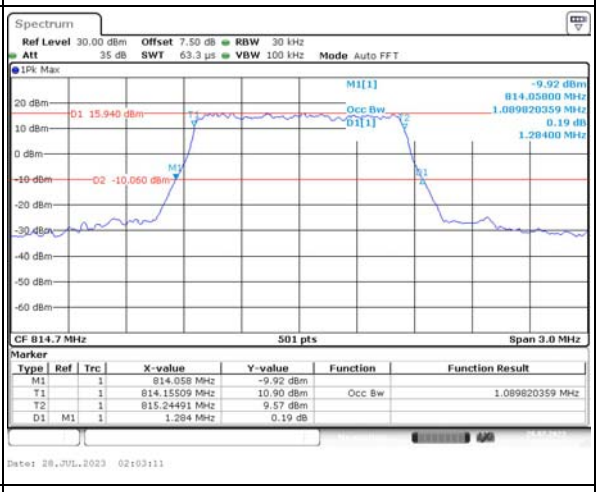
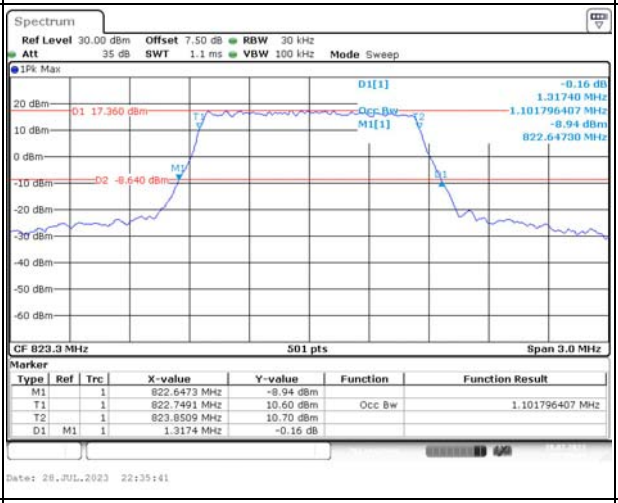
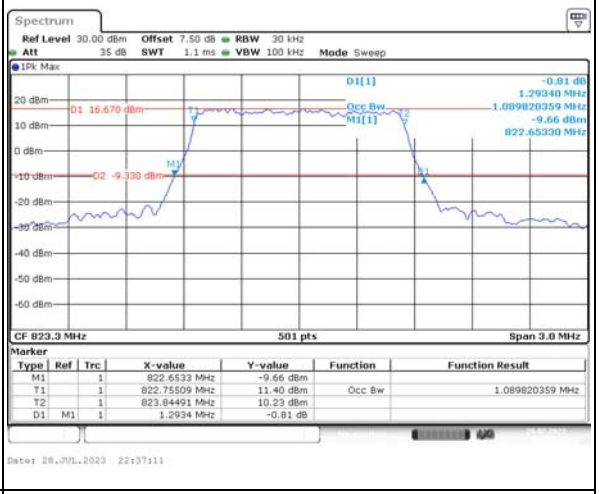
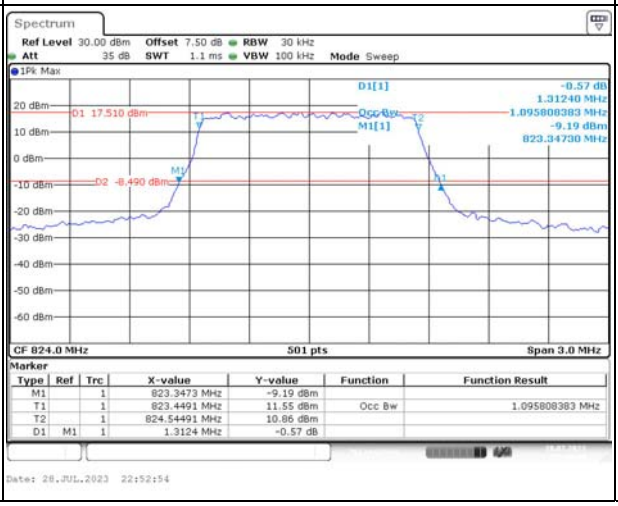
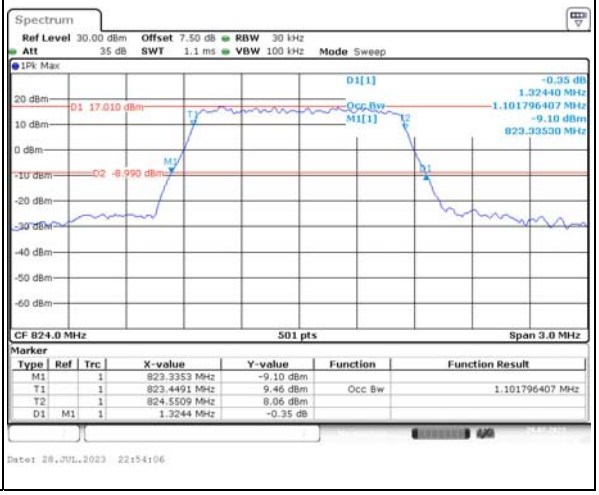
| **FCC §2.1051, §90.691: Out of band emission, Band Edge** | |
|---|---|
| **Result:** | **Pass. Please refer to the test plots of Out of band emission, Band Edge.** |

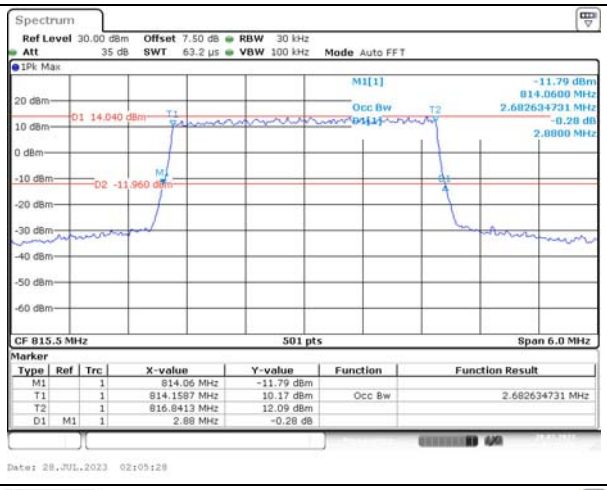
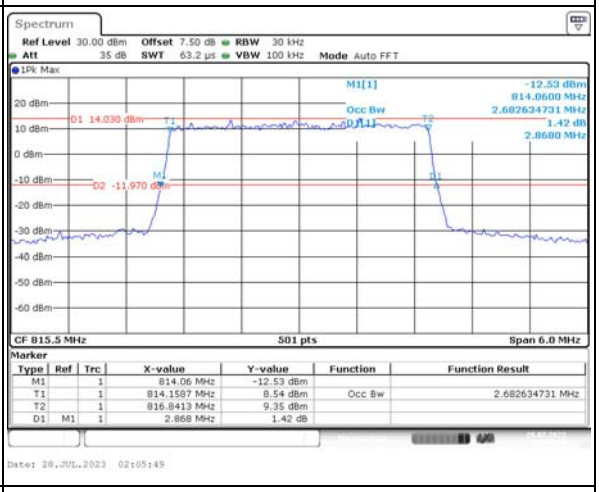
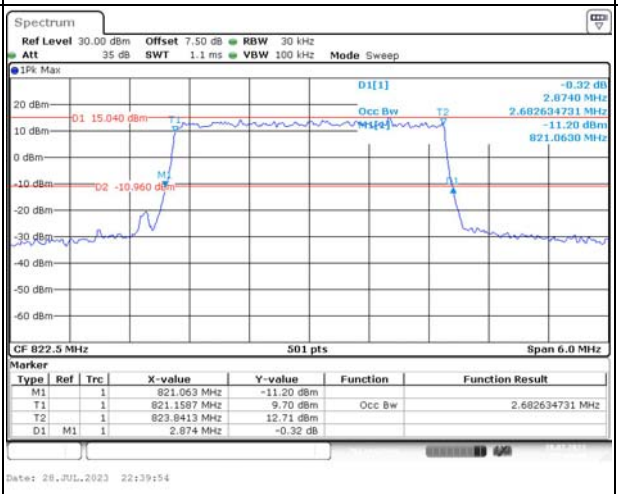
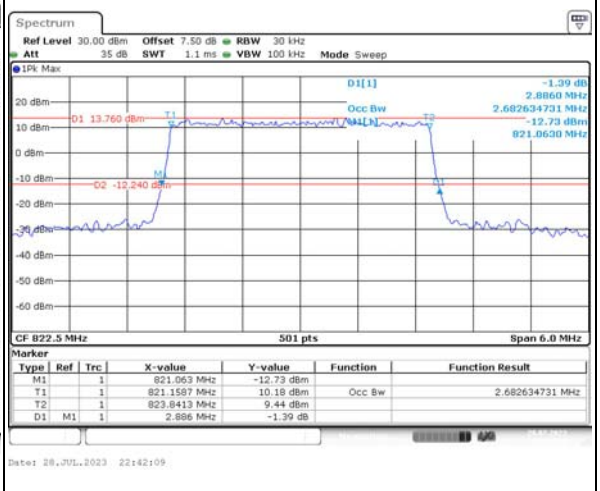
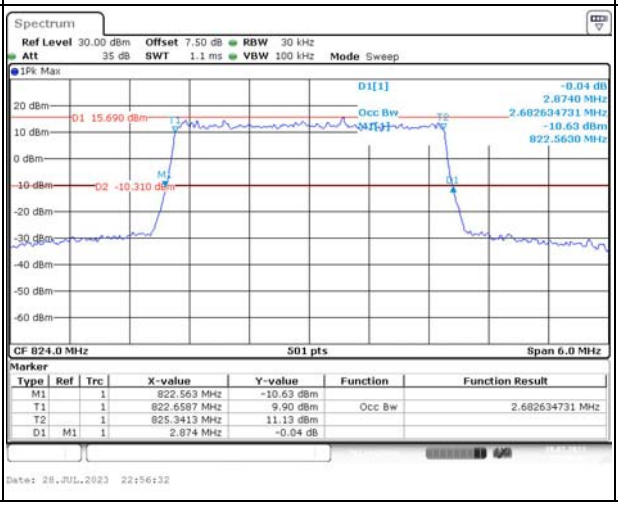
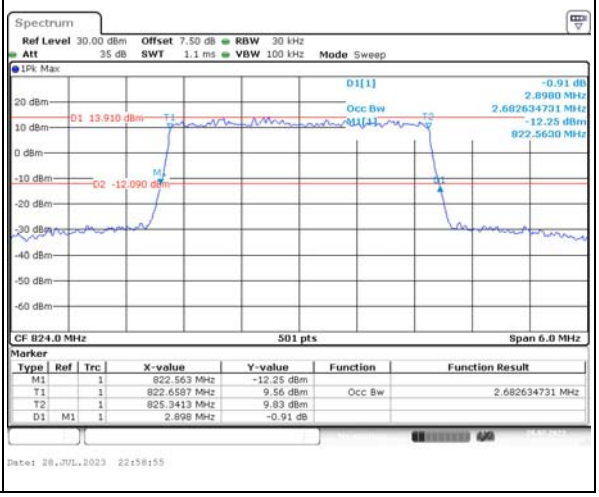
| FCC §2.1055, §90.213: Frequency Stability | | | | | |
|---|---|---|---|---|---|
| Test Modulation: | 15 MHz QPSK | | Test Channel: | 821.5 | MHz |
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Frequency Error | | Limit |
| | | | (Hz) | (ppm) | (ppm) |
| Frequency Stability vs. Temperature | -30 | 3.8 | -5.28 | -0.006 | 2.5 |
| | -20 | 3.8 | 6.09 | 0.007 | 2.5 |
| | -10 | 3.8 | -7.02 | -0.008 | 2.5 |
| | 0 | 3.8 | 7.35 | 0.009 | 2.5 |
| | 10 | 3.8 | 8.23 | 0.010 | 2.5 |
| | 20 | 3.8 | -9.14 | -0.011 | 2.5 |
| | 30 | 3.8 | 9.53 | 0.011 | 2.5 |
| | 40 | 3.8 | -6.52 | -0.008 | 2.5 |
| | 50 | 3.8 | -7.83 | -0.009 | 2.5 |
| Frequency Stability vs. Voltage | 20 | 3.65 | 7.38 | 0.009 | 2.5 |
| | 20 | 4.35 | 7.02 | 0.008 | 2.5 |
| | | | | **Result:** | **Pass** |

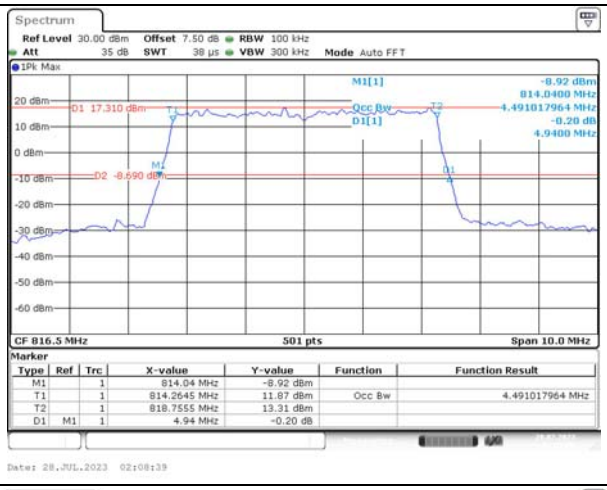
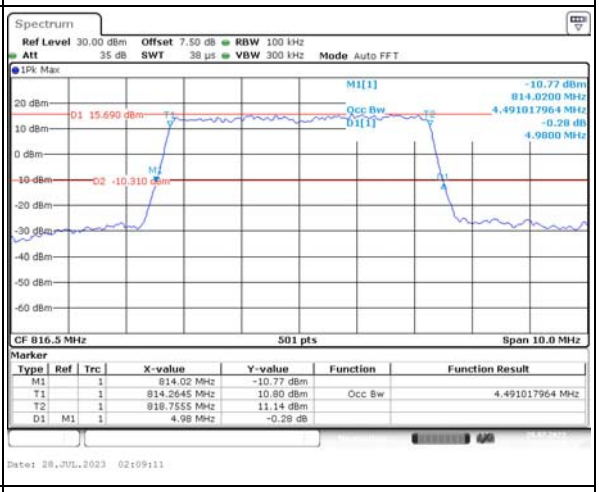
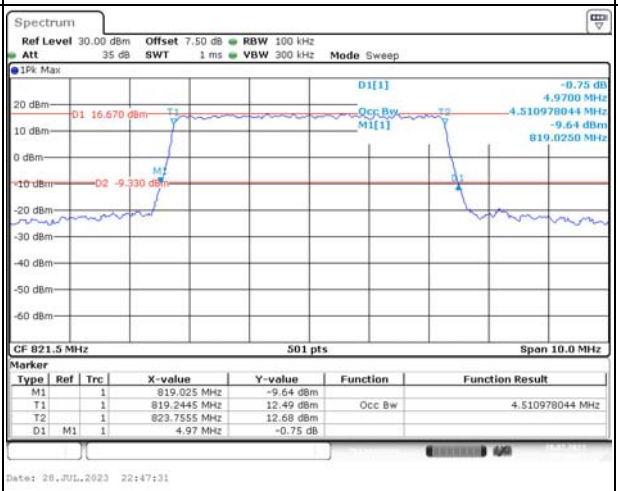
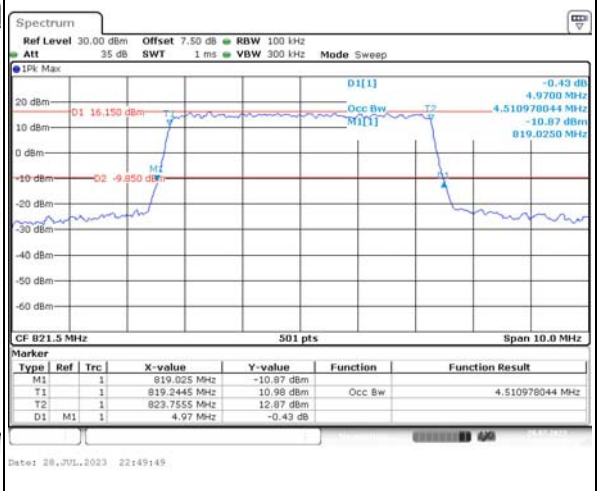
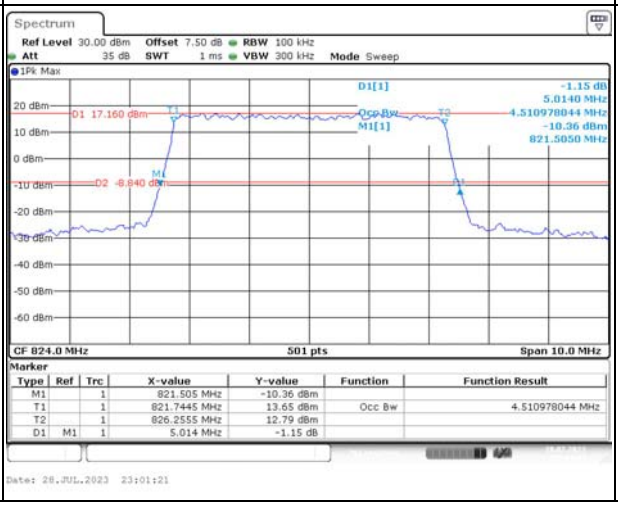
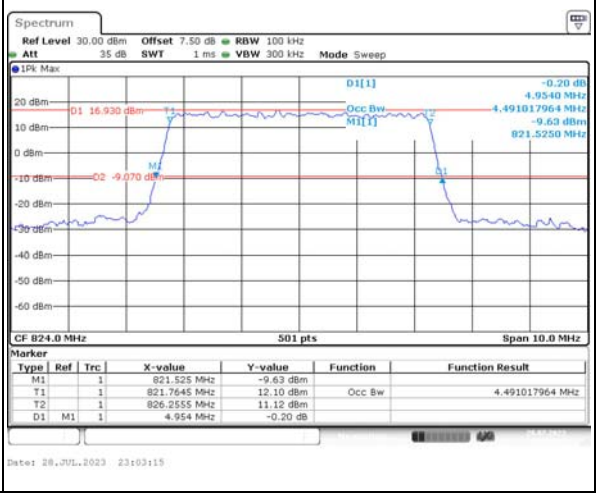
| FCC §2.1055, §90.213: Frequency Stability | | | | | |
|---|---|---|---|---|---|
| Test Modulation: | 15 MHz 16QAM | | Test Channel: | 821.5 | MHz |
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Frequency Error | | Limit |
| | | | (Hz) | (ppm) | (ppm) |
| Frequency Stability vs. Temperature | -30 | 3.8 | -6.19 | -0.007 | 2.5 |
| | -20 | 3.8 | -6.9 | -0.008 | 2.5 |
| | -10 | 3.8 | -8.41 | -0.010 | 2.5 |
| | 0 | 3.8 | -8.47 | -0.010 | 2.5 |
| | 10 | 3.8 | 6.4 | 0.008 | 2.5 |
| | 20 | 3.8 | -6.95 | -0.008 | 2.5 |
| | 30 | 3.8 | 6.53 | 0.008 | 2.5 |
| | 40 | 3.8 | 9.18 | 0.011 | 2.5 |
| | 50 | 3.8 | 7.47 | 0.009 | 2.5 |
| Frequency Stability vs. Voltage | 20 | 3.65 | 8.88 | 0.011 | 2.5 |
| | 20 | 4.35 | -7.46 | -0.009 | 2.5 |
| | | | | **Result:** | **Pass** |

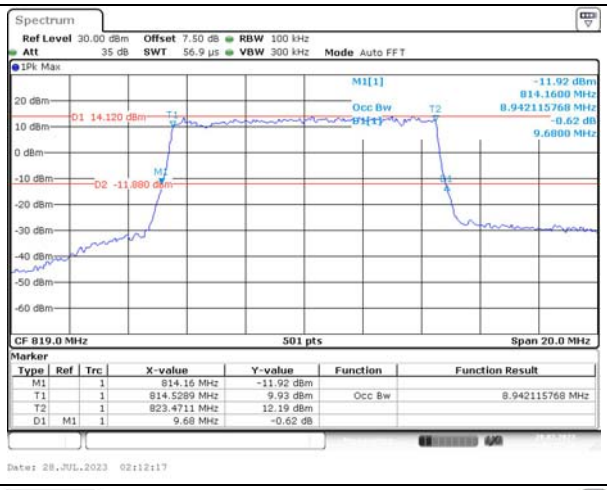
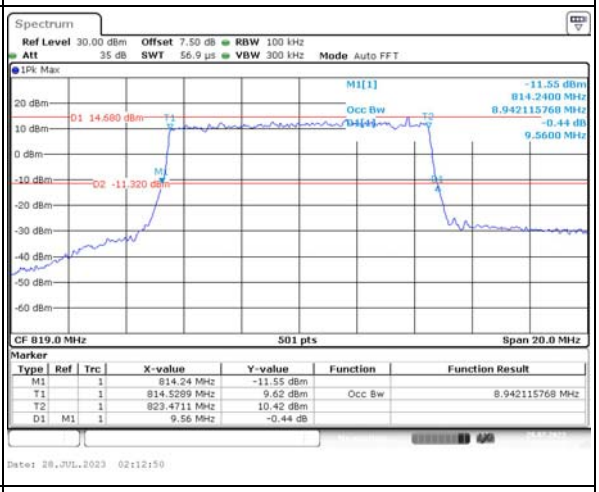
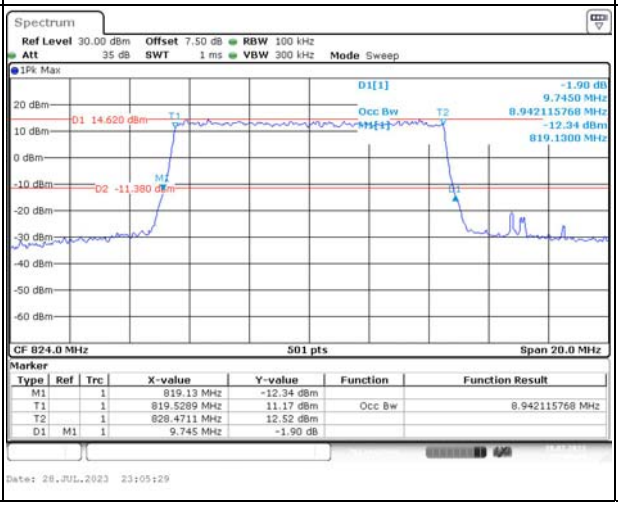
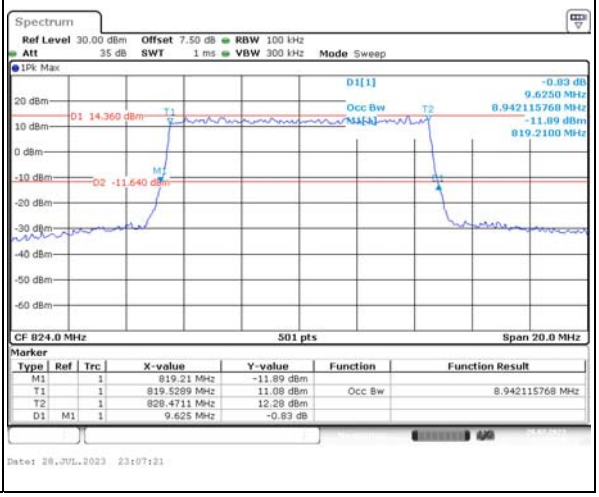
### 4.12.2 Test Plots for Part 90S:

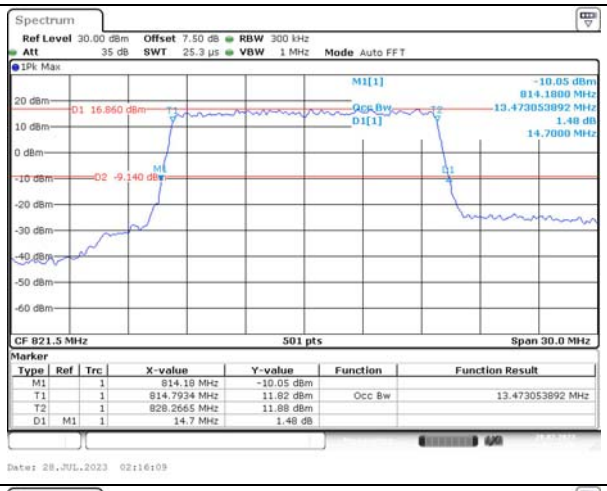
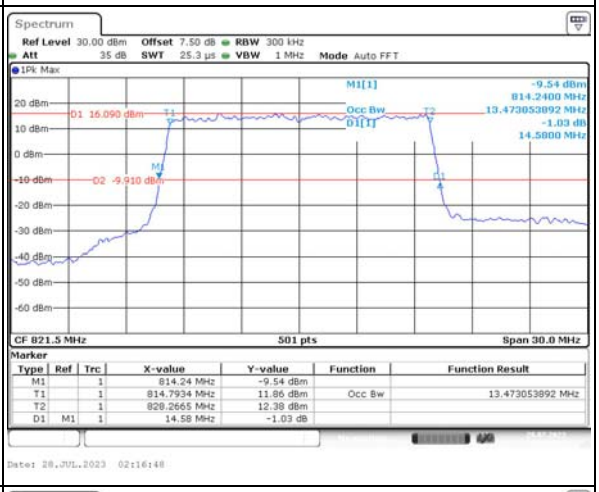
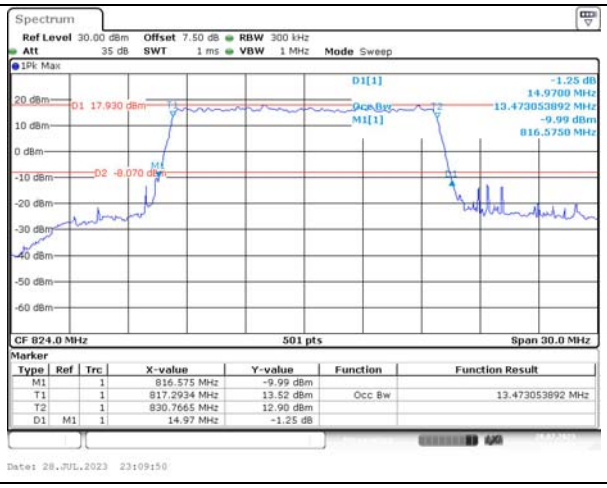
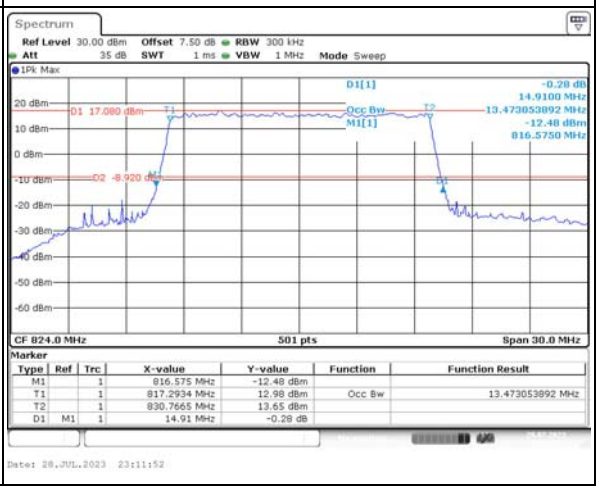
(Note: The 7.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 1.4MHz Bandwidth QPSK | 1.4MHz Bandwidth 16QAM |
| Lowest For 90S |  |  |
| Highest For 90S |  |  |
| Cross For 90S |  |  |

| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 3MHz Bandwidth QPSK | 3MHz Bandwidth 16QAM |
| Lowest For 90S |  |  |
| Highest For 90S |  |  |
| Cross For 90S |  |  |

| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 5MHz Bandwidth QPSK | 5MHz Bandwidth 16QAM |
| Lowest For 90S |  |  |
| Highest For 90S |  |  |
| Cross For 90S |  |  |

| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 10MHz Bandwidth QPSK | 10MHz Bandwidth 16QAM |
| Lowest For 90S |  |  |
| Cross Channel |  |  |

| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 15MHz Bandwidth QPSK | 15MHz Bandwidth 16QAM |
| Middle For 90S |  |  |
| Cross Channel |  |  |