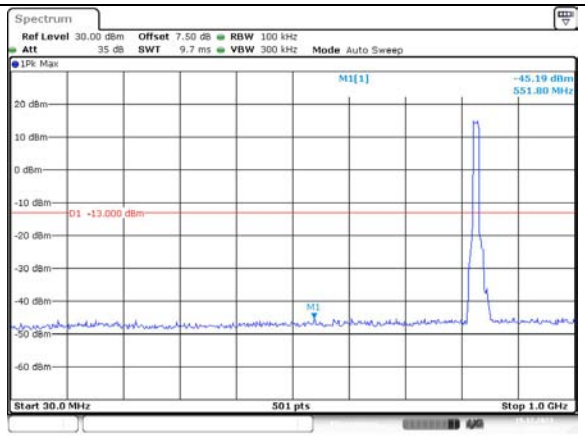
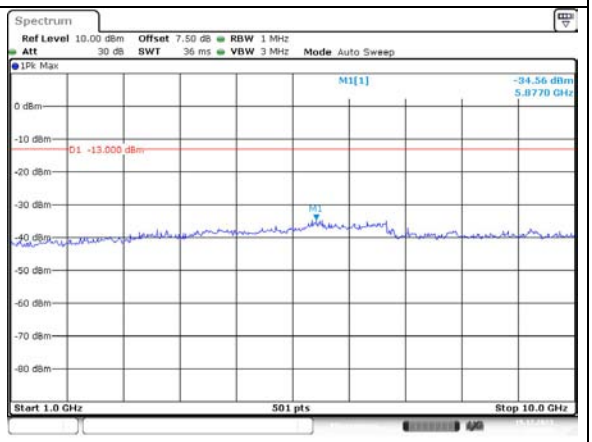
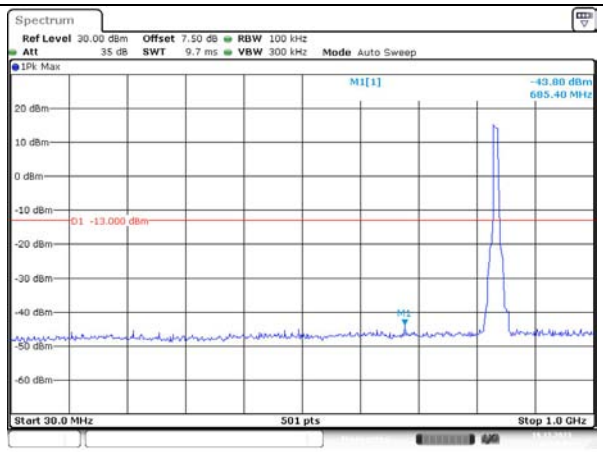
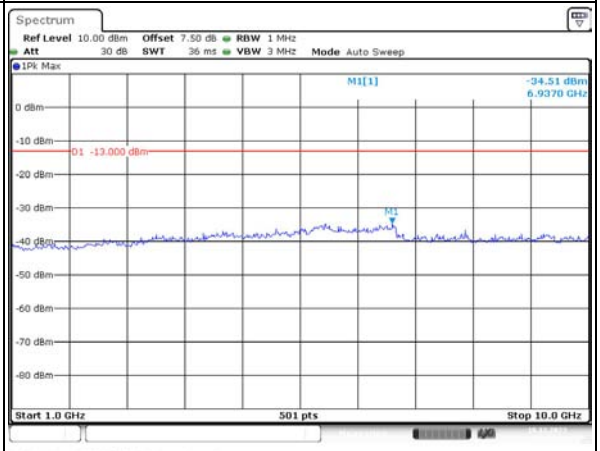
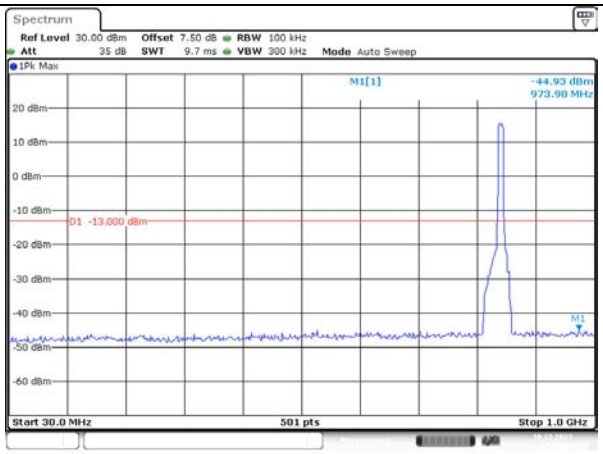
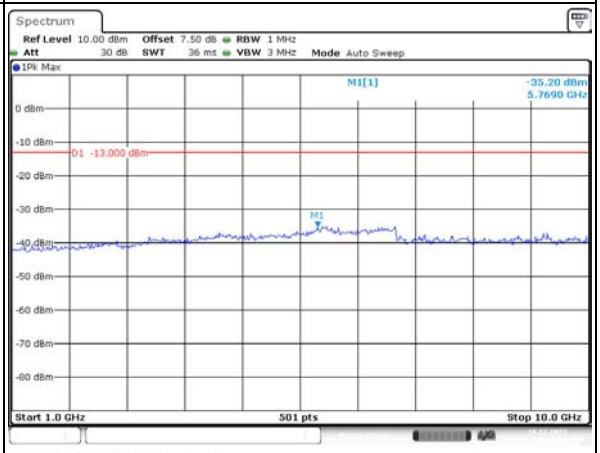
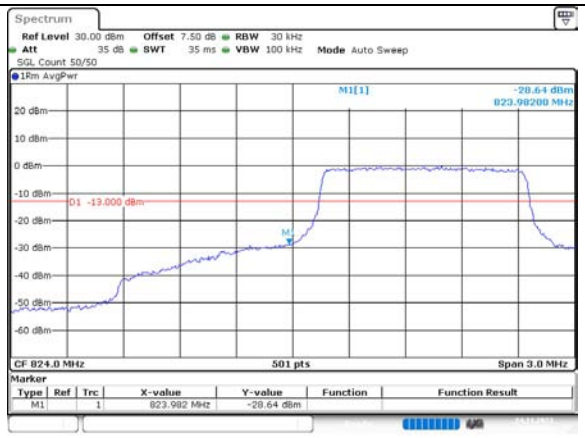
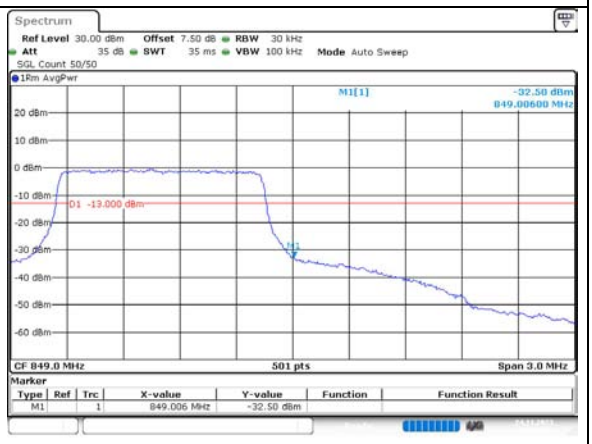
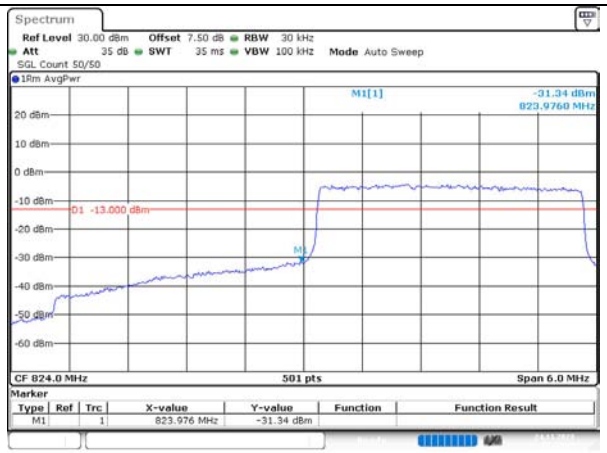
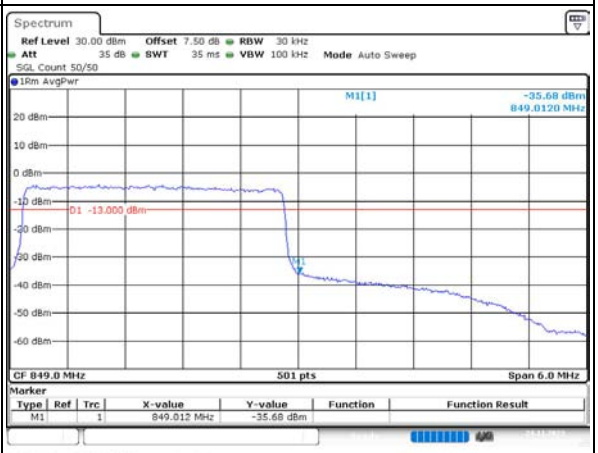
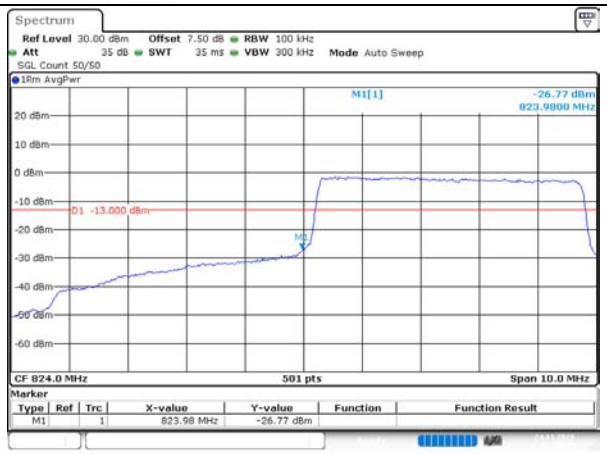
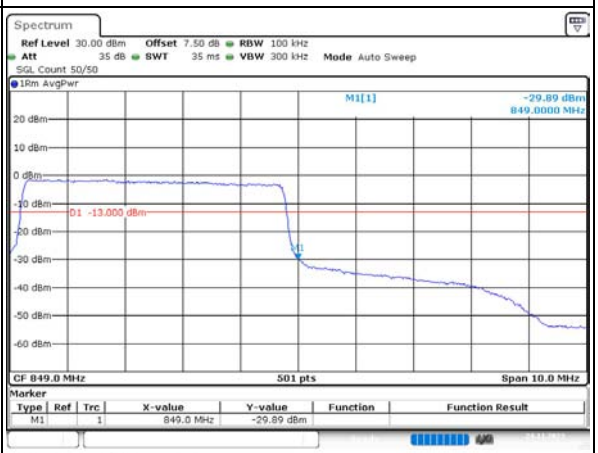
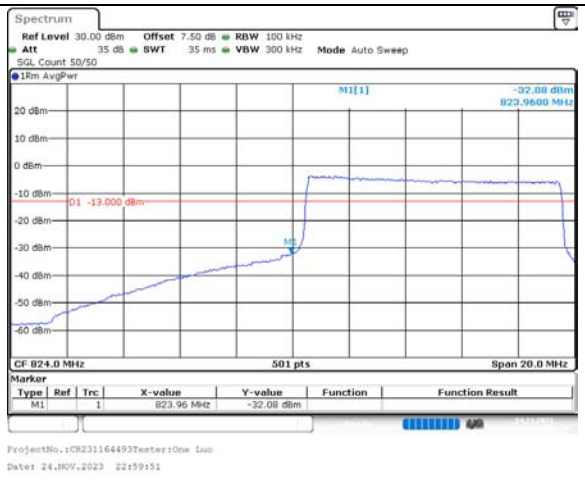
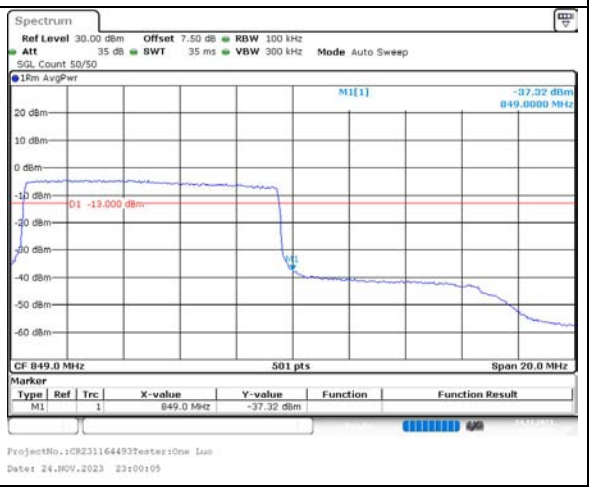
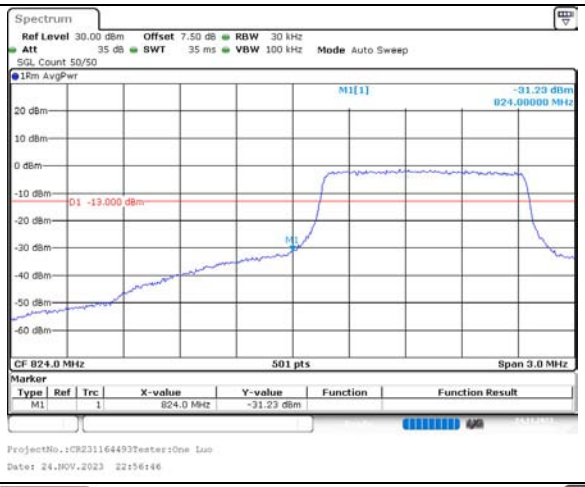
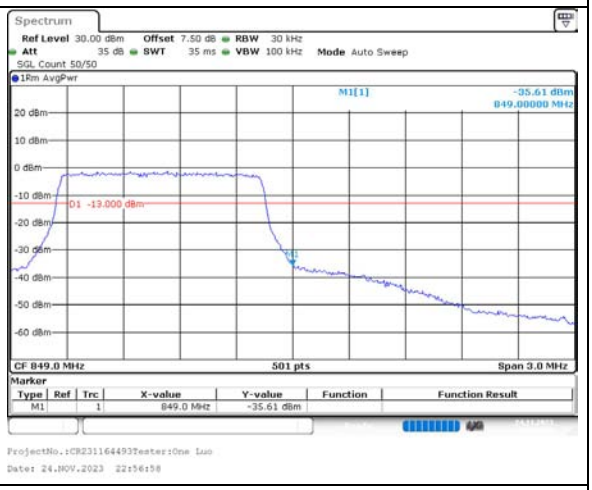
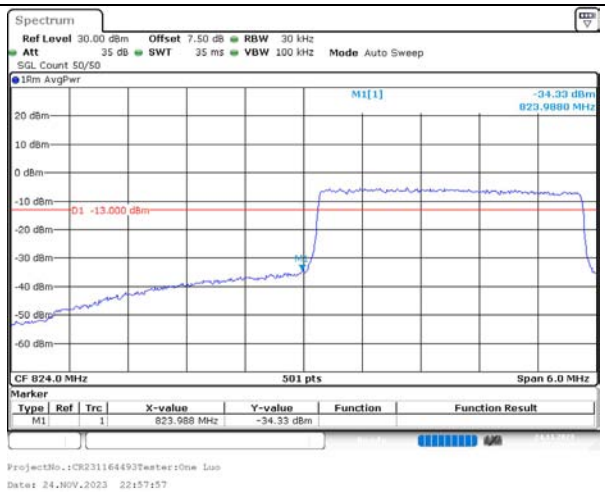
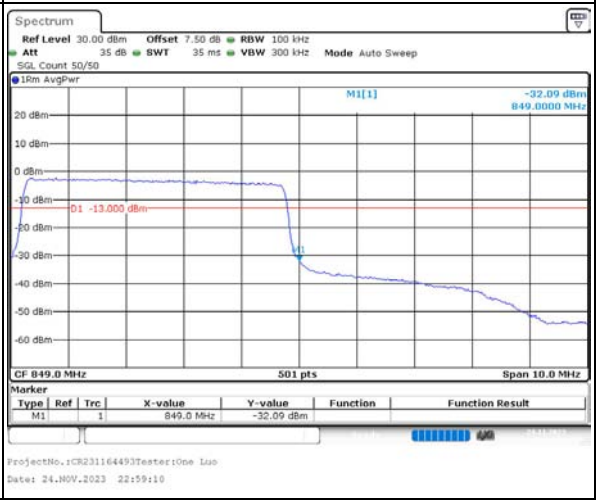
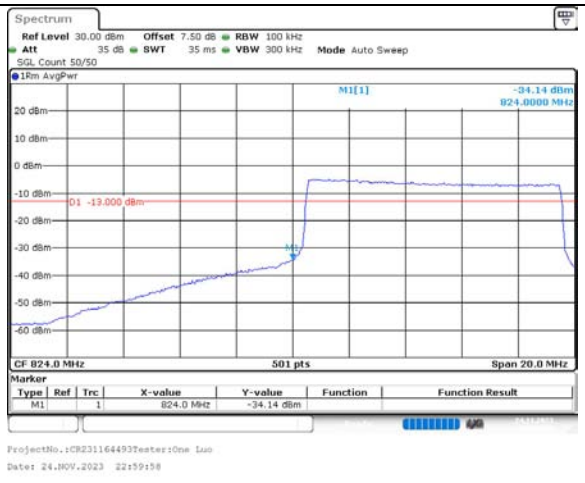
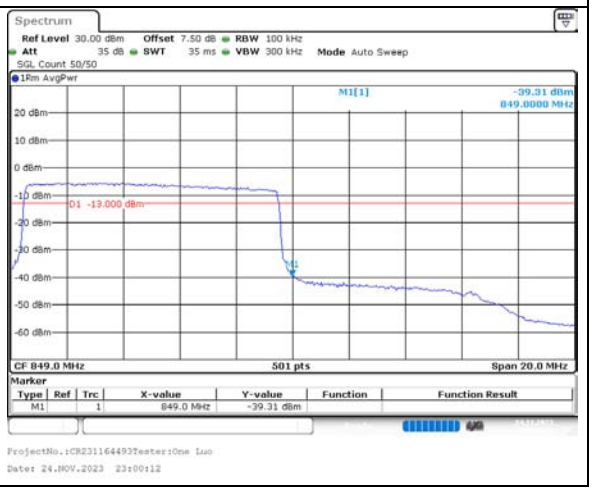
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **10MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

| 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 |  |  |

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

| | | | |
|---|---|---|---|
| Serial Number: | 2D1L-2 | Test Date: | 2023/11/24~2023/12/20 |
| Test Site: | RF | Test Mode: | Transmitting |
| Tester: | One Luo | Test Result: | **Pass** |

| **Environmental Conditions:** | | | | | |
|---|---|---|---|---|---|
| Temperature: (℃) | 22.3~25.8 | Relative Humidity: (%) | 31~52 | ATM Pressure: (kPa) | 100.9~101.9 |

**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 | 2023/9/29 | 2024/9/28 |
| 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 | 2502.5 | 2535 | 2567.5 |
| 10MHz | 2505 | 2535 | 2565 |
| 15MHz | 2507.5 | 2535 | 2562.5 |
| 20MHz | 2510 | 2535 | 2560 |

**Test Data:**

**RF Output Power**

| Test Bandwidth & Modulation | Resource Block & RB offset | Conducted Average Output Power(dBm) | | | Maximum EIRP (dBm) | EIRP Limit (dBm) |
|---|---|---|---|---|---|---|
| | | Lowest Channel | Middle Channel | Highest Channel | | |
| 5MHz QPSK | RB1#0 | 23.32 | 23.19 | 23.21 | 26.58 | 33 |
| | RB1#13 | **23.38** | 23.32 | 23.32 | | |
| | RB1#24 | 23.32 | 23.18 | 23.22 | | |
| | RB15#0 | 22.32 | 22.25 | 22.3 | | |
| | RB15#10 | 22.34 | 22.3 | 22.3 | | |
| | RB25#0 | 22.31 | 22.25 | 22.24 | | |
| 5MHz 16QAM | RB1#0 | 22.48 | 22.19 | 22.05 | 25.76 | 33 |
| | RB1#13 | **22.56** | 22.28 | 22.17 | | |
| | RB1#24 | 22.44 | 22.19 | 22.1 | | |
| | RB15#0 | 21.26 | 21.25 | 21.28 | | |
| | RB15#10 | 21.3 | 21.25 | 21.25 | | |
| | RB25#0 | 21.29 | 21.25 | 21.25 | | |
| 10MHz QPSK | RB1#0 | 23.45 | 23.26 | 23.32 | 26.8 | 33 |
| | RB1#25 | **23.6** | 23.48 | 23.5 | | |
| | RB1#49 | 23.41 | 23.29 | 23.31 | | |
| | RB25#0 | 22.3 | 22.26 | 22.37 | | |
| | RB25#25 | 22.36 | 22.35 | 22.34 | | |
| | RB50#0 | 22.35 | 22.33 | 22.34 | | |
| 10MHz 16QAM | RB1#0 | 22.3 | 22.7 | 22.36 | 26.1 | 33 |
| | RB1#25 | 22.44 | **22.9** | 22.49 | | |
| | RB1#49 | 22.31 | 22.73 | 22.34 | | |
| | RB25#0 | 21.35 | 21.27 | 21.29 | | |
| | RB25#25 | 21.38 | 21.37 | 21.31 | | |
| | RB50#0 | 21.32 | 21.29 | 21.28 | | |
| 15MHz QPSK | RB1#0 | 23.38 | 23.3 | 23.28 | 26.62 | 33 |
| | RB1#38 | **23.42** | 23.32 | 23.32 | | |
| | RB1#74 | 23.27 | 23.2 | 23.27 | | |
| | RB36#0 | 22.44 | 22.38 | 22.46 | | |
| | RB36#39 | 22.45 | 22.41 | 22.39 | | |
| | RB75#0 | 22.48 | 22.41 | 22.46 | | |
| 15MHz 16QAM | RB1#0 | 22.69 | 22.33 | 22.5 | 25.97 | 33 |
| | RB1#38 | **22.77** | 22.43 | 22.57 | | |
| | RB1#74 | 22.65 | 22.27 | 22.49 | | |
| | RB36#0 | 21.4 | 21.36 | 21.35 | | |
| | RB36#39 | 21.41 | 21.38 | 21.33 | | |
| | RB75#0 | 21.38 | 21.35 | 21.32 | | |
| 20MHz QPSK | RB1#0 | 23.87 | 23.72 | 23.21 | 27.28 | 33 |
| | RB1#50 | **24.08** | 23.74 | 23.47 | | |
| | RB1#99 | 23.7 | 23.17 | 23.2 | | |
| | RB50#0 | 22.89 | 22.33 | 22.44 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | RB50#50 | 22.89 | 22.4 | 22.33 | | |
| | RB100#0 | 22.87 | 22.4 | 22.42 | | |
| 20MHz 16QAM | RB1#0 | 22.88 | 22.7 | 22.38 | 26.35 | 33 |
| | RB1#50 | **23.15** | 22.97 | 22.74 | | |
| | RB1#99 | 22.84 | 22.67 | 22.37 | | |
| | RB50#0 | 21.88 | 21.32 | 21.43 | | |
| | RB50#50 | 21.85 | 21.39 | 21.25 | | |
| | RB100#0 | 21.85 | 21.36 | 21.37 | | |
| 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 | |
| 10MHz QPSK | RB1#0 | 2.99 | 3.62 | 3.16 | 13 |
| | RB50#0 | 4.14 | 4.58 | 4.35 | 13 |
| 10MHz 16QAM | RB1#0 | 4.09 | 4.55 | 4.12 | 13 |
| | RB50#0 | 5.13 | 5.57 | 5.28 | 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 |
| 5MHz QPSK | 4.531 | 4.531 | 4.551 | 5.22 | 5.26 | 5.34 |
| 5MHz 16QAM | 4.551 | 4.551 | 4.531 | 5.24 | 5.24 | 5.28 |
| 10MHz QPSK | 8.942 | 8.942 | 9.022 | 9.88 | 9.92 | 10.36 |
| 10MHz 16QAM | 8.942 | 8.942 | 8.981 | 9.96 | 9.92 | 9.88 |
| 15MHz QPSK | 13.533 | 13.473 | 13.593 | 14.88 | 14.82 | 15.18 |
| 15MHz 16QAM | 13.533 | 13.533 | 13.533 | 14.76 | 14.76 | 14.82 |
| 20MHz QPSK | 17.884 | 17.964 | 17.964 | 19.6 | 19.44 | 19.68 |
| 20MHz 16QAM | 17.964 | 17.964 | 17.964 | 19.84 | 19.84 | 20 |
| Note: The test plots please refer to the Plots of Occupied Bandwidth | | | | | | |

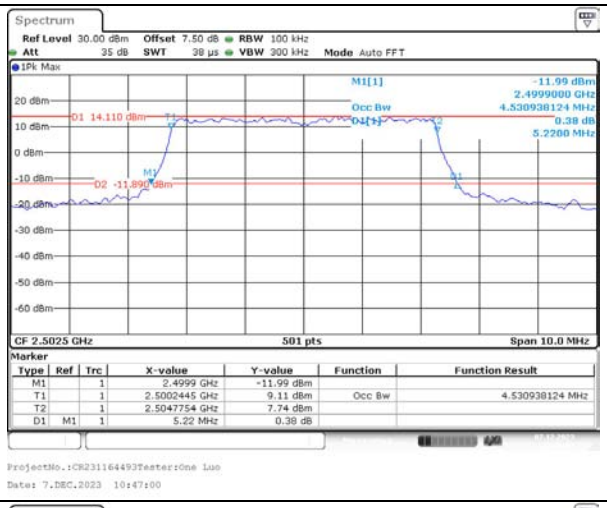
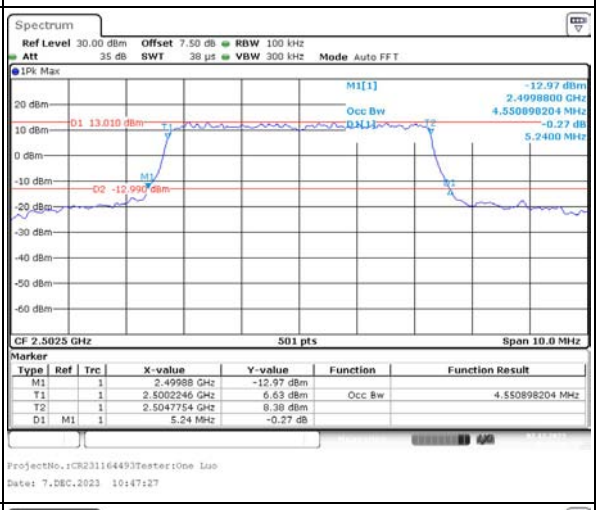
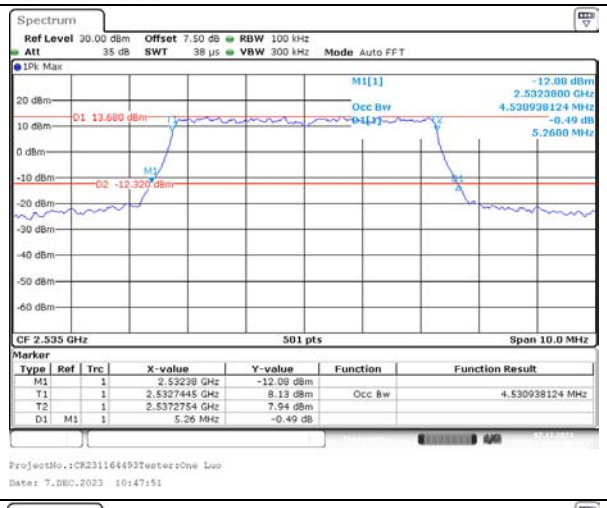
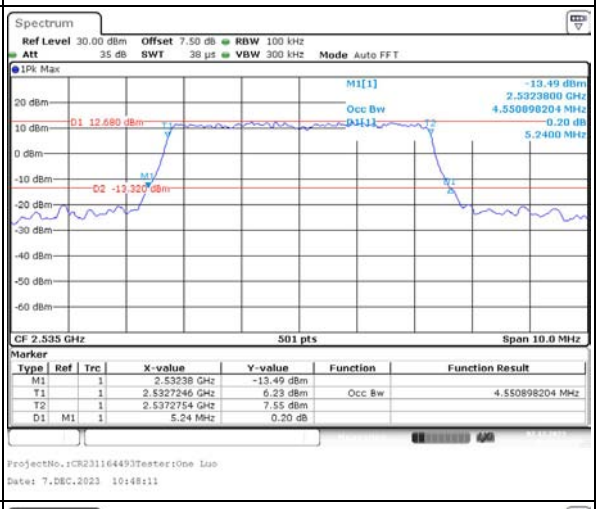
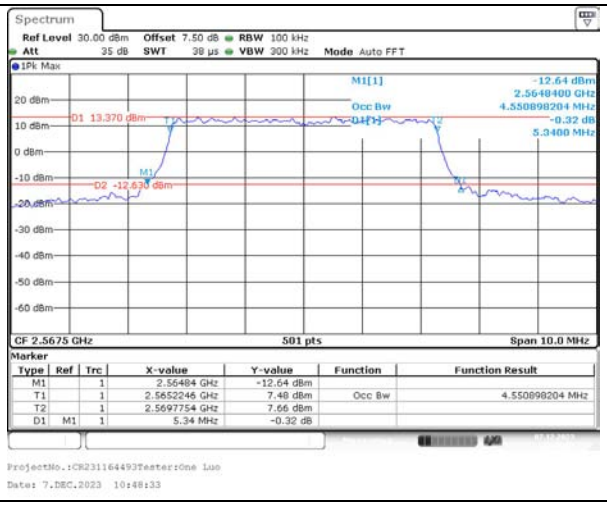
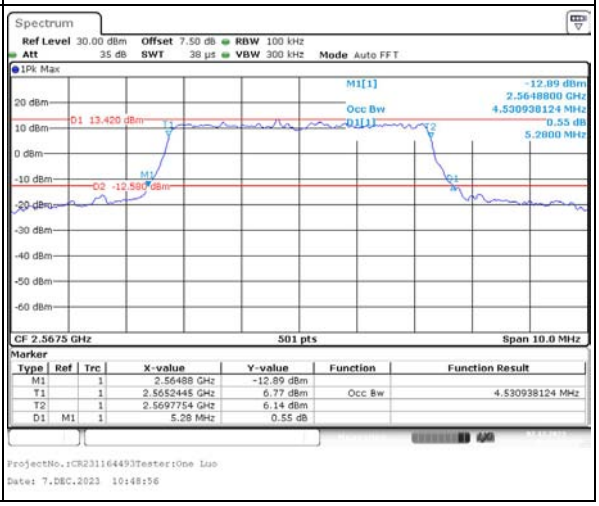
| **Spurious Emissions at Antenna Terminal** | |
|---|---|
| **Result:** | **Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.** |

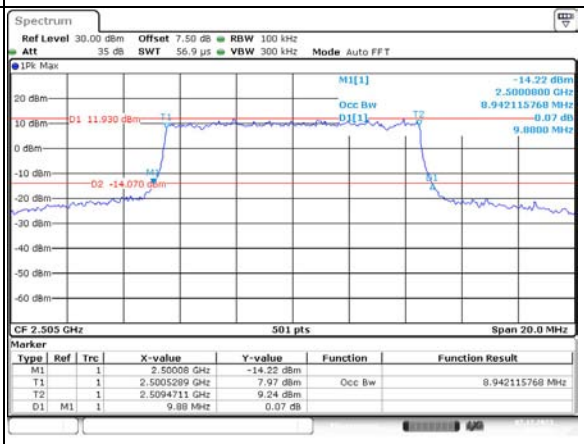
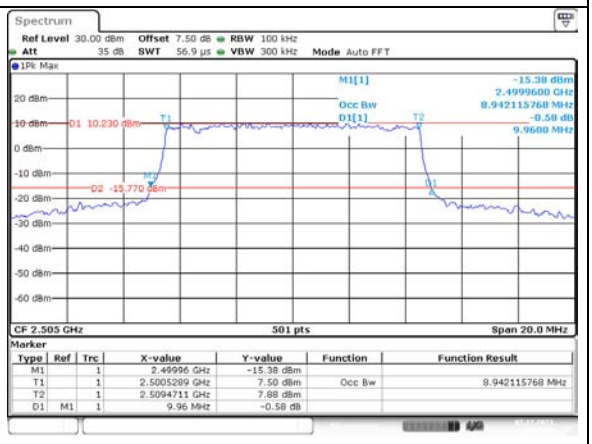
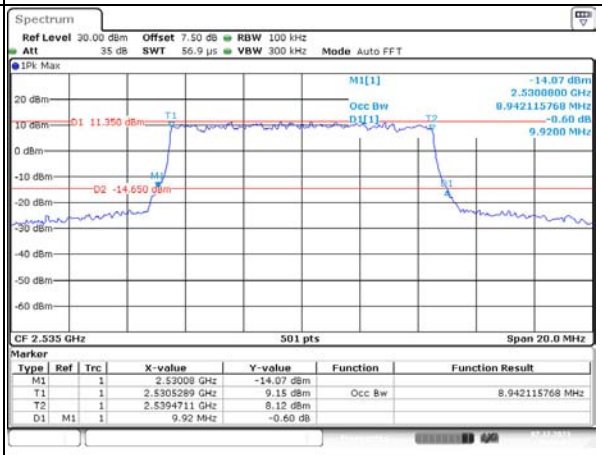
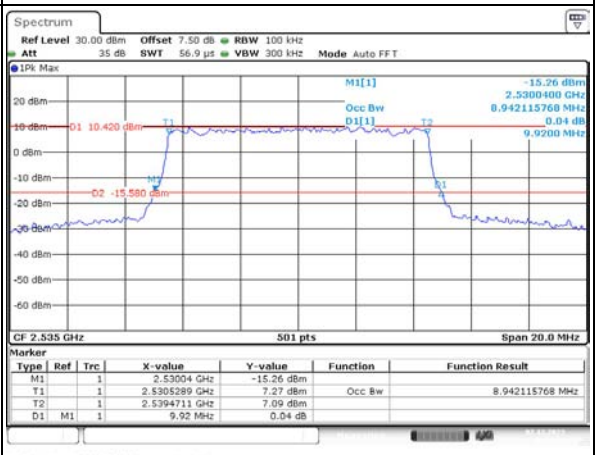
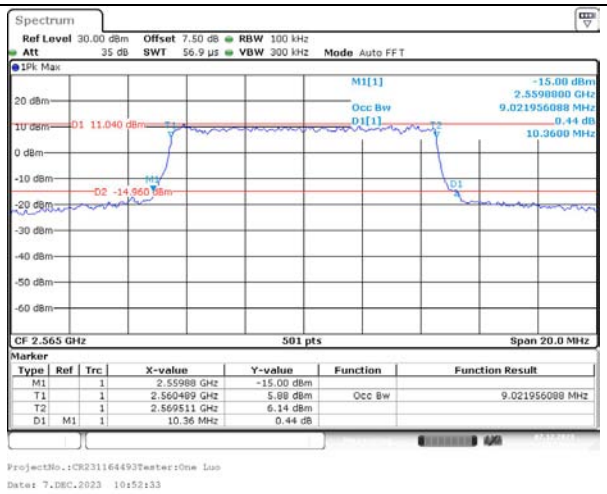
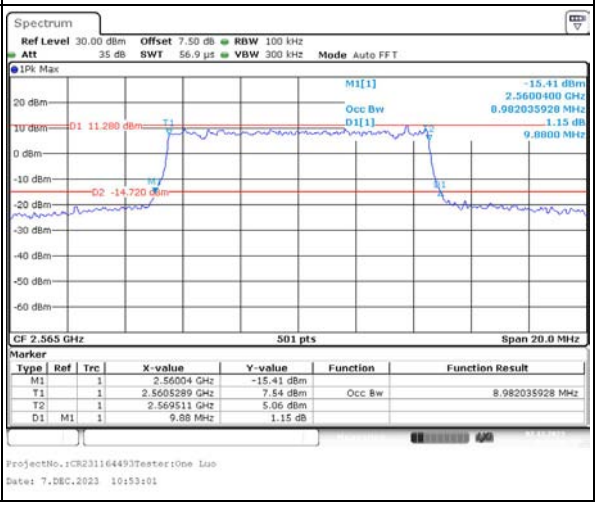
| **Out of band emission, Band Edge** | |
|---|---|
| **Result:** | **Pass, Please refer to the test plots of Out of band emission, Band Edge.** |

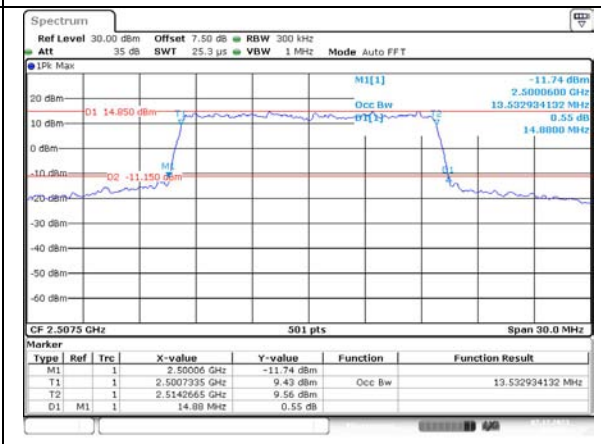
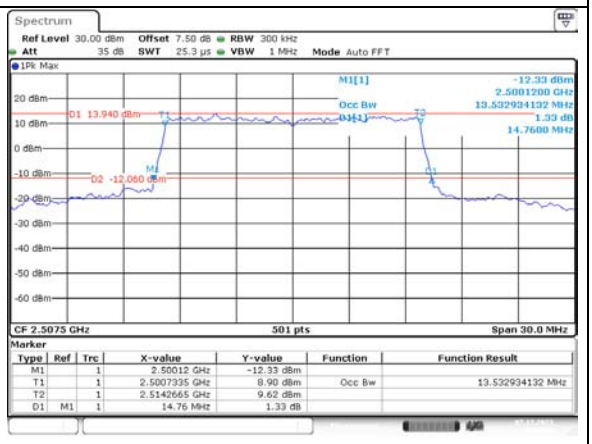
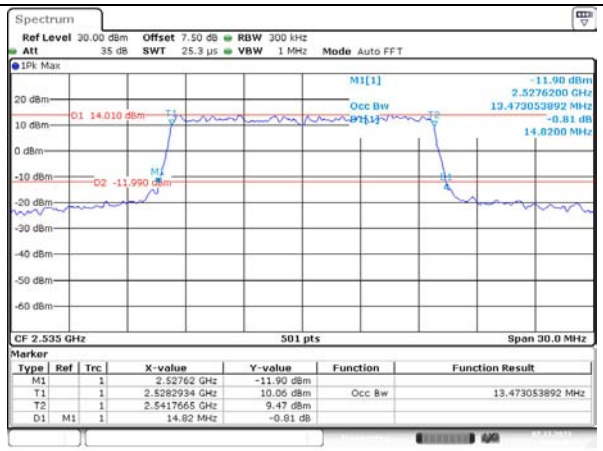
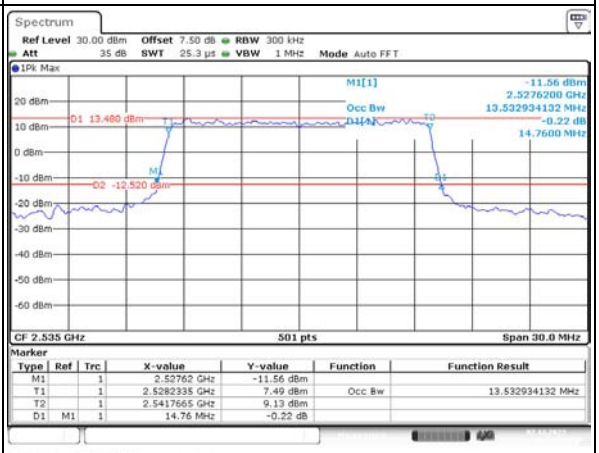
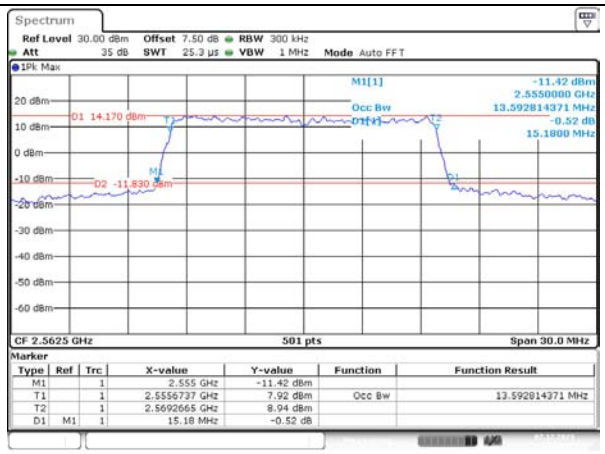
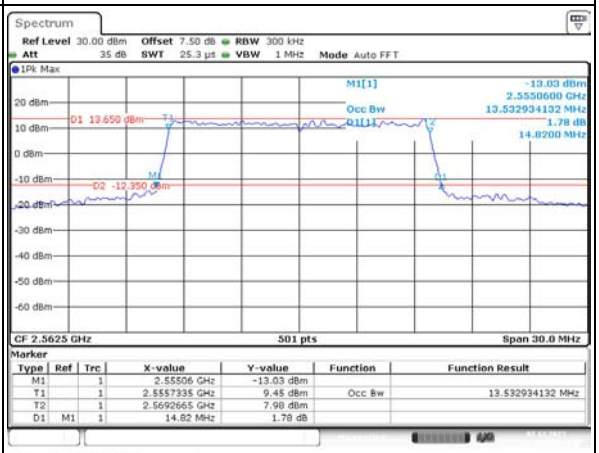
| **Frequency Stability** | | | | | | |
|---|---|---|---|---|---|---|
| Test Mode: | 20M QPSK | Test Channel: Lowest for Lower Edge,Highest for Upper Edge | | | | |
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.8 | 2501.055 | 2500.00 | 2568.920 | 2570 |
| | -20 | 3.8 | 2501.091 | 2500.00 | 2568.978 | 2570 |
| | -10 | 3.8 | 2501.033 | 2500.00 | 2568.977 | 2570 |
| | 0 | 3.8 | 2501.092 | 2500.00 | 2568.929 | 2570 |
| | 10 | 3.8 | 2501.050 | 2500.00 | 2568.994 | 2570 |
| | 20 | 3.8 | 2501.058 | 2500.00 | 2568.942 | 2570 |
| | 30 | 3.8 | 2501.012 | 2500.00 | 2568.964 | 2570 |
| | 40 | 3.8 | 2501.054 | 2500.00 | 2568.968 | 2570 |
| | 50 | 3.8 | 2501.088 | 2500.00 | 2568.993 | 2570 |
| Frequency Stability vs. Voltage | 20 | 3.2 | 2501.015 | 2500.00 | 2568.965 | 2570 |
| | 20 | 4.4 | 2501.082 | 2500.00 | 2568.938 | 2570 |
| | | | | | **Result:** | **Pass** |

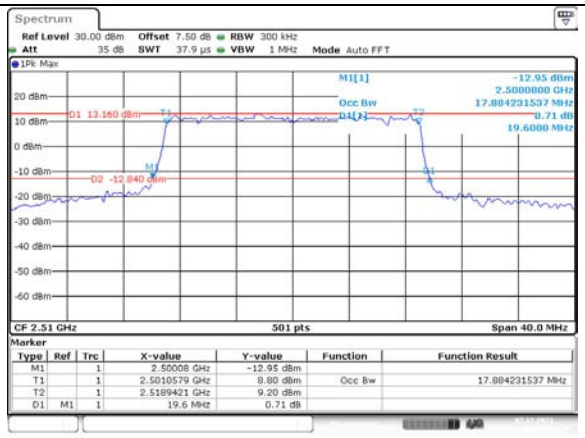
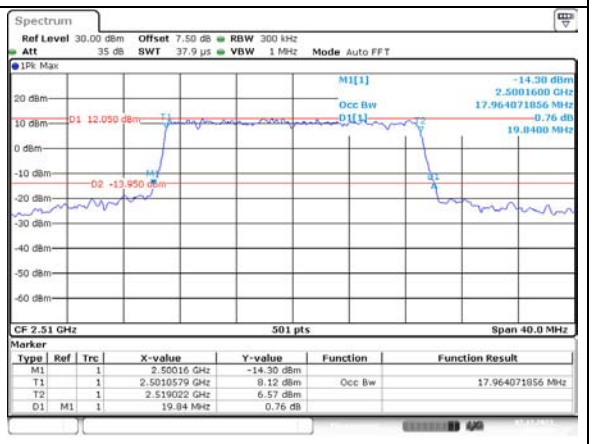
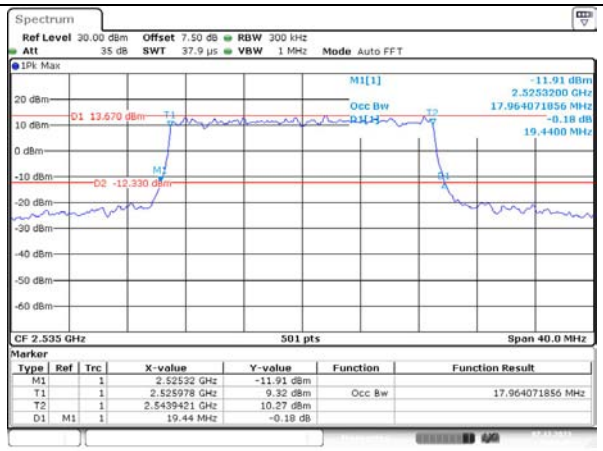
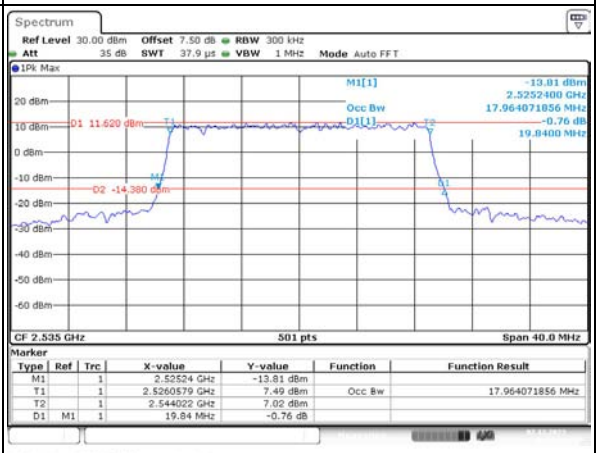
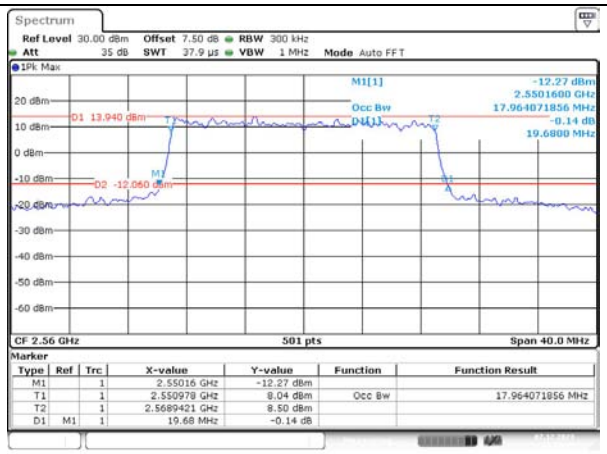
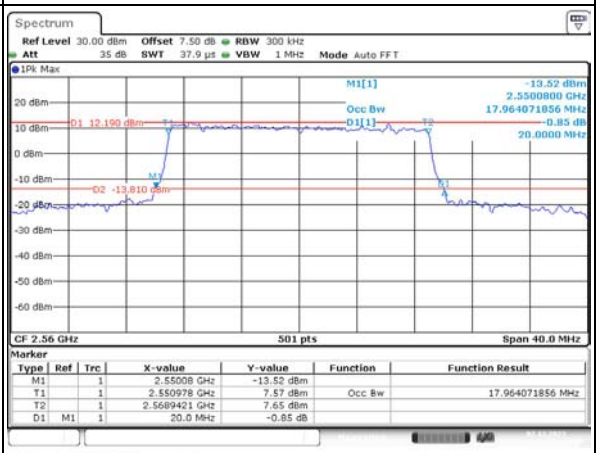
| Test Mode: | 20M 16QAM | Test Channel: Lowest for Lower Edge,Highest for Upper Edge | | | | |
|---|---|---|---|---|---|---|
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.8 | 2501.012 | 2500.00 | 2568.904 | 2570 |
| | -20 | 3.8 | 2501.059 | 2500.00 | 2568.931 | 2570 |
| | -10 | 3.8 | 2501.001 | 2500.00 | 2568.974 | 2570 |
| | 0 | 3.8 | 2501.015 | 2500.00 | 2568.931 | 2570 |
| | 10 | 3.8 | 2501.008 | 2500.00 | 2568.915 | 2570 |
| | 20 | 3.8 | 2501.058 | 2500.00 | 2568.942 | 2570 |
| | 30 | 3.8 | 2501.046 | 2500.00 | 2568.927 | 2570 |
| | 40 | 3.8 | 2501.030 | 2500.00 | 2568.915 | 2570 |
| | 50 | 3.8 | 2501.024 | 2500.00 | 2568.952 | 2570 |
| Frequency Stability vs. Voltage | 20 | 3.2 | 2501.097 | 2500.00 | 2568.985 | 2570 |
| | 20 | 4.4 | 2501.092 | 2500.00 | 2568.946 | 2570 |
| | | | | | **Result:** | **Pass** |

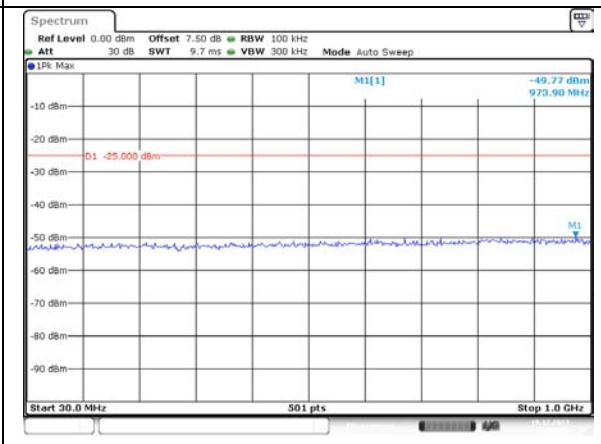
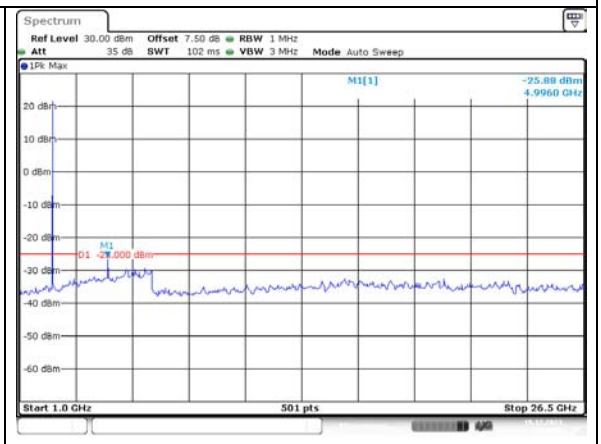
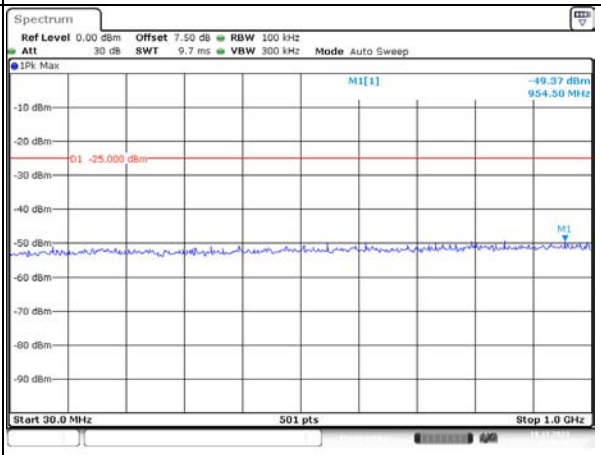
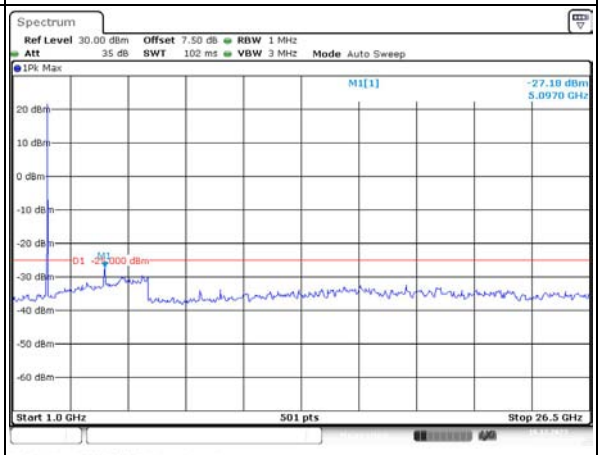
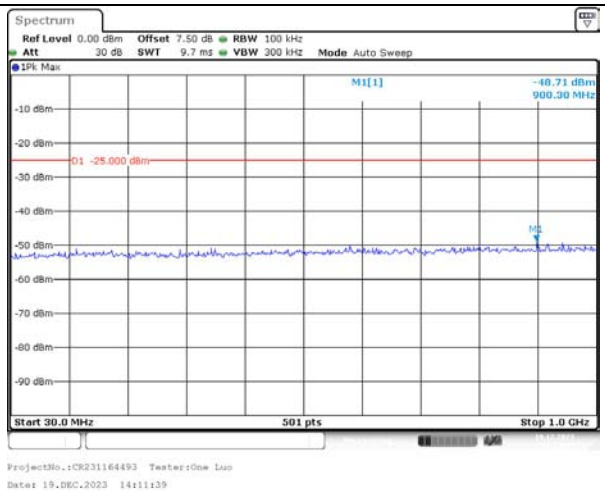
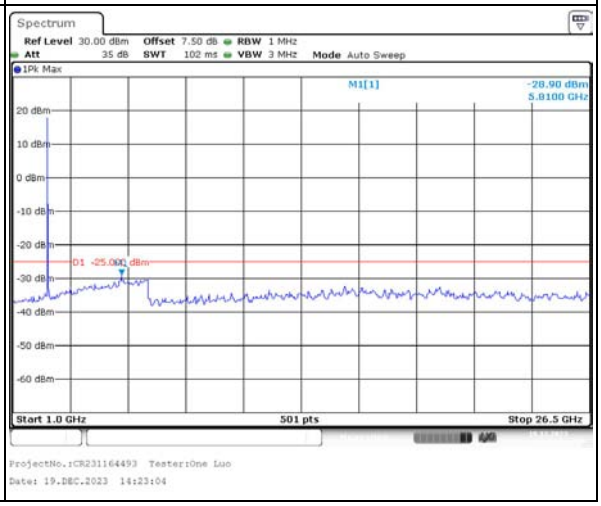
**Test Plots**(Note: The 7.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer)**:**

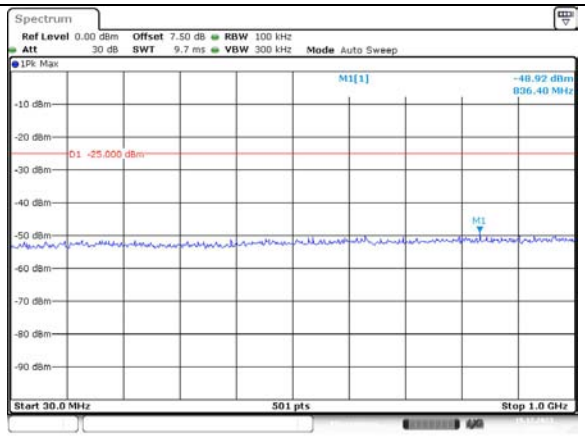
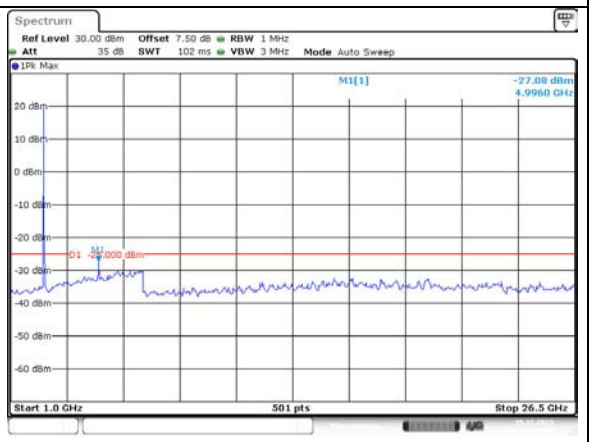
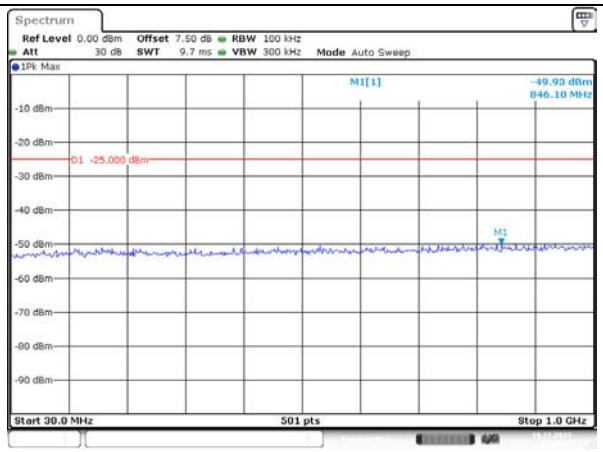
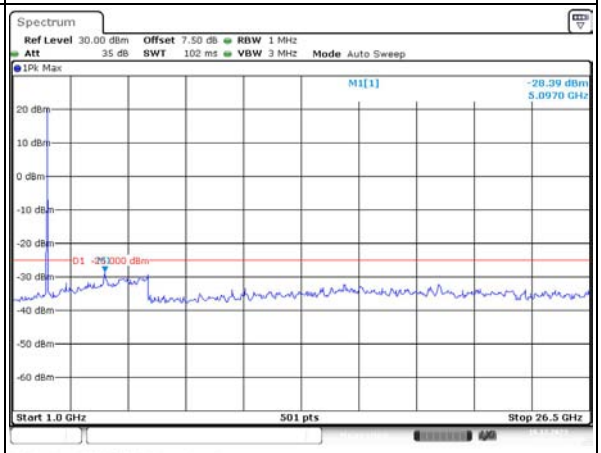
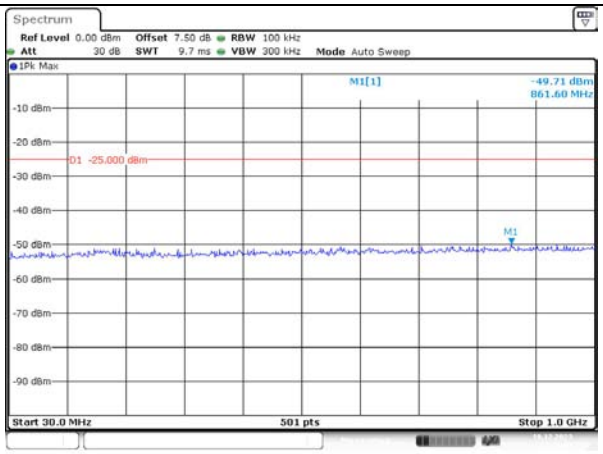
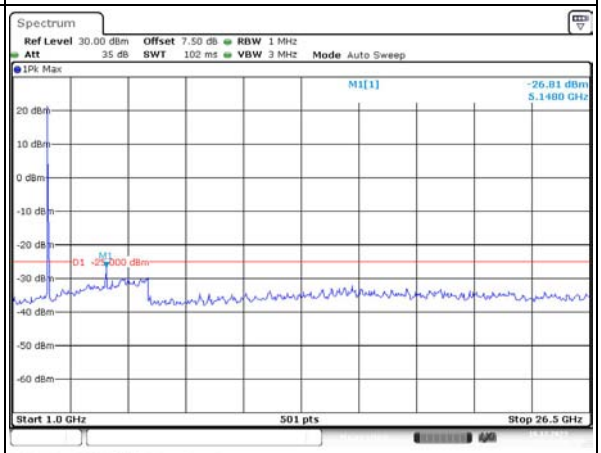
| **Occupied Bandwidth** | | |
|---|---|---|
| **Channel** | 5MHz Bandwidth QPSK | 5MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

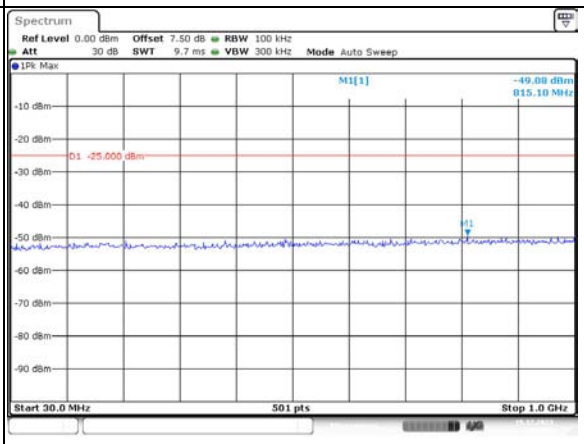
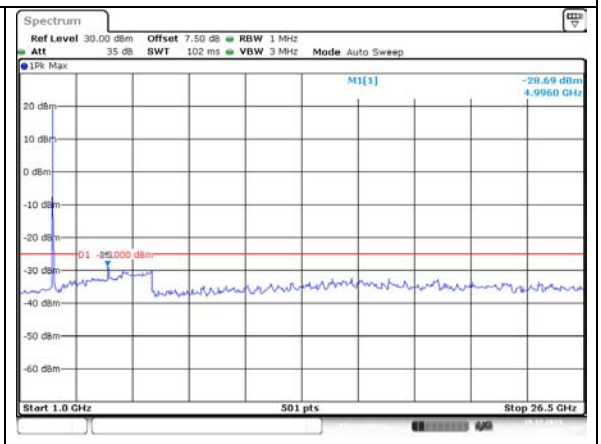
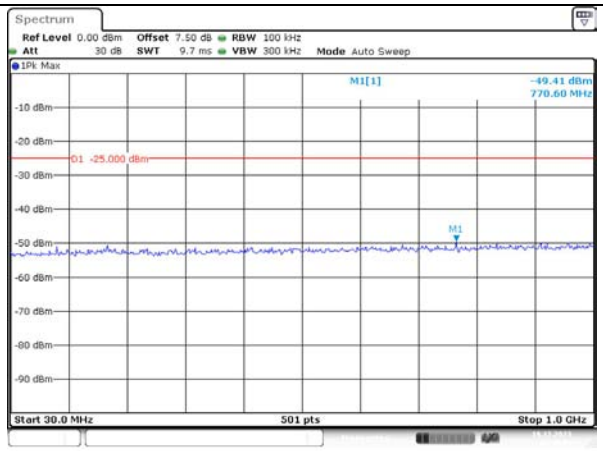
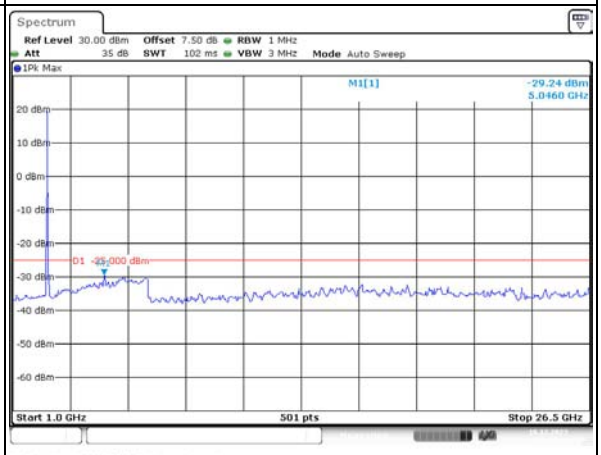
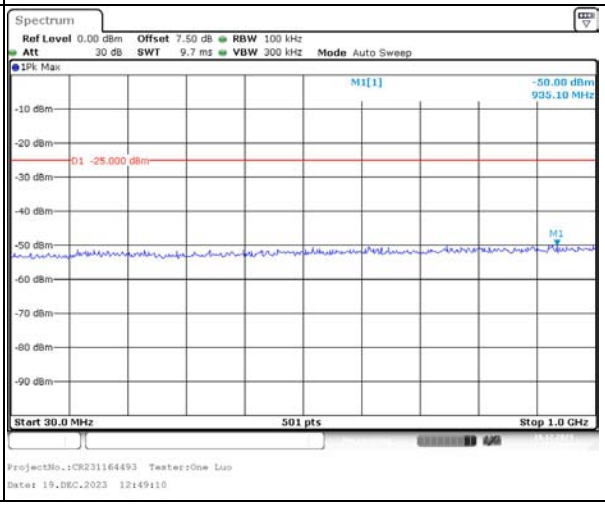
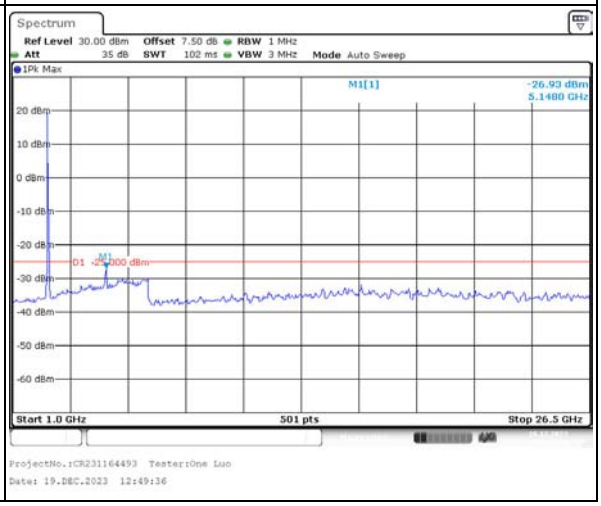
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 10MHz Bandwidth QPSK | 10MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

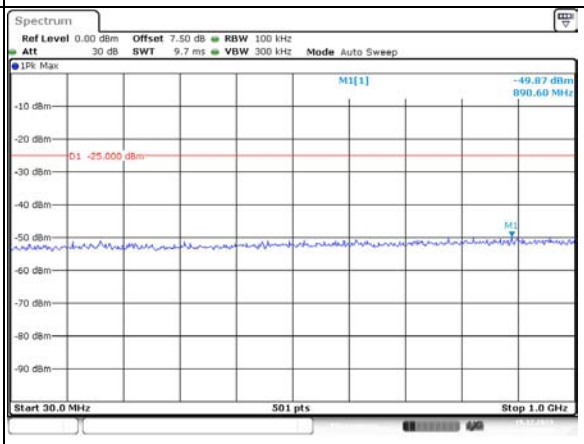
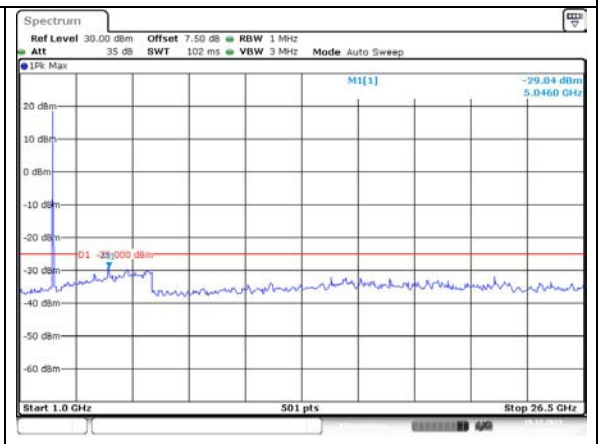
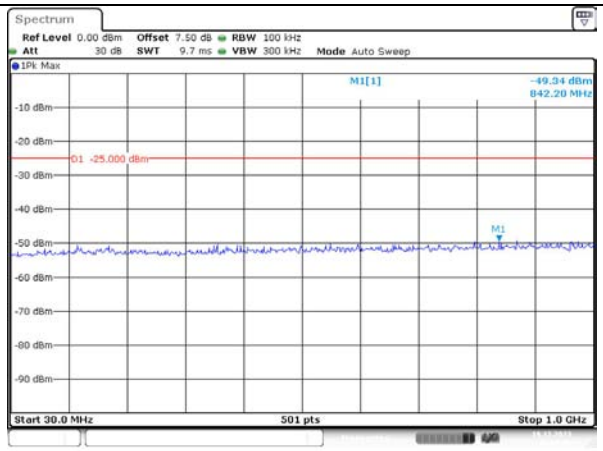
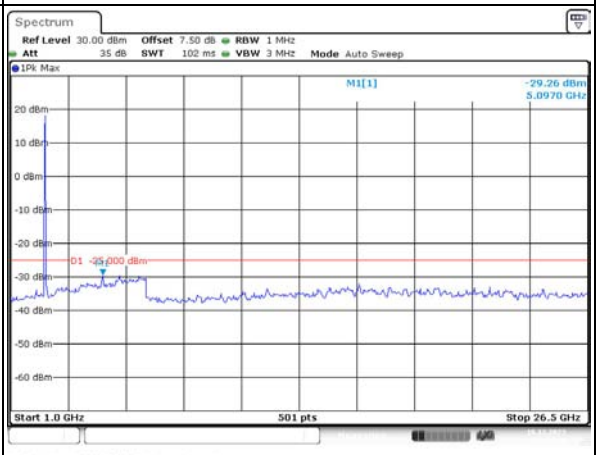
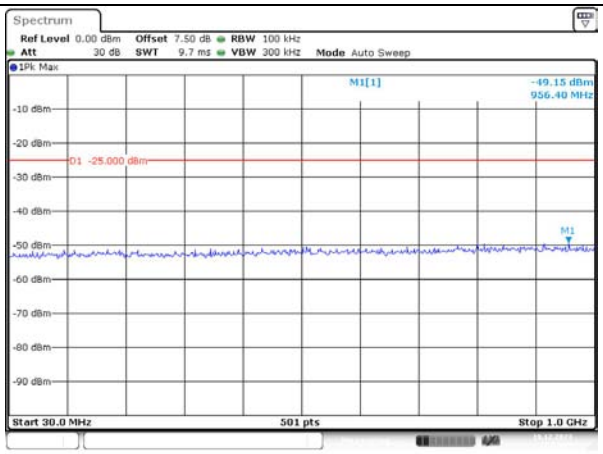
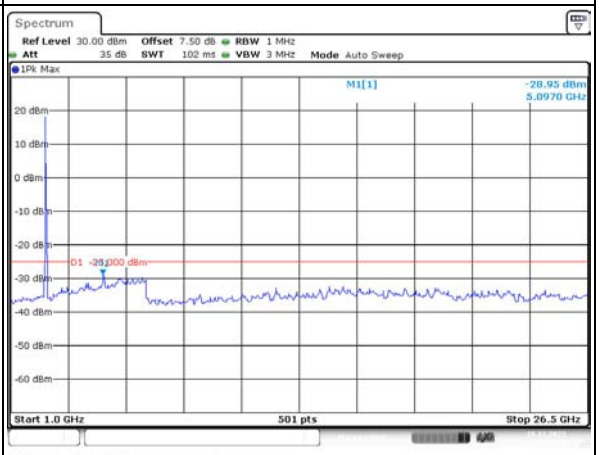
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 15MHz Bandwidth QPSK | 15MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

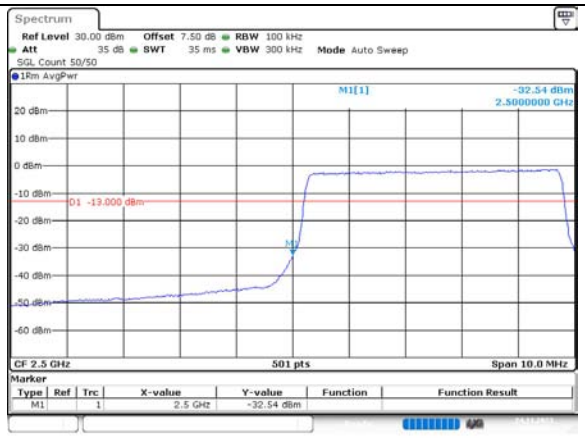
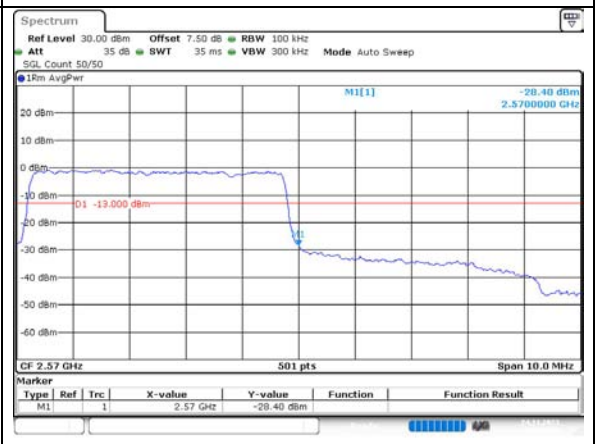
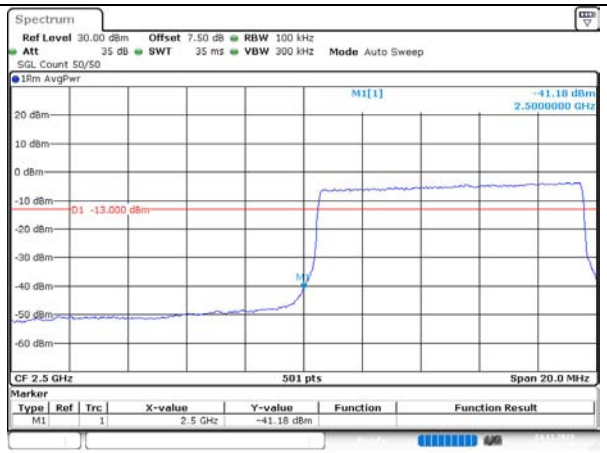
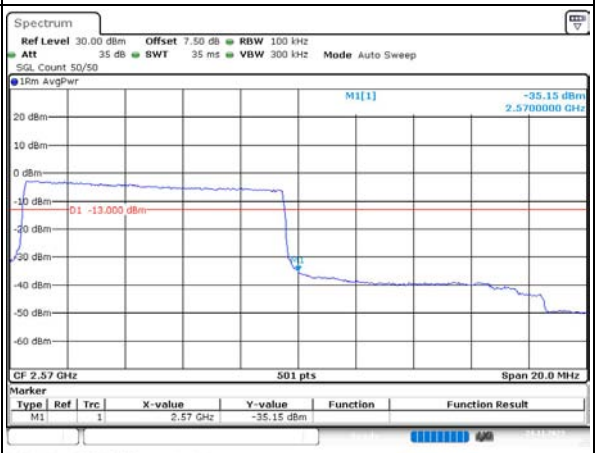
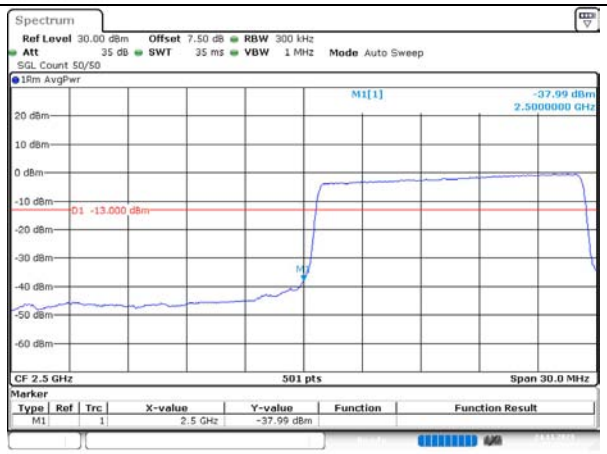
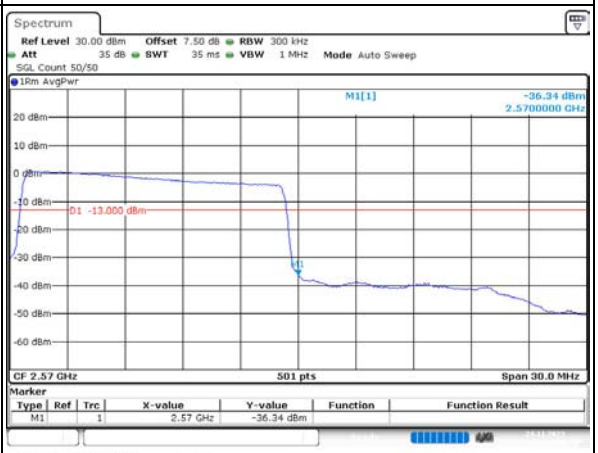
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 20MHz Bandwidth QPSK | 20MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

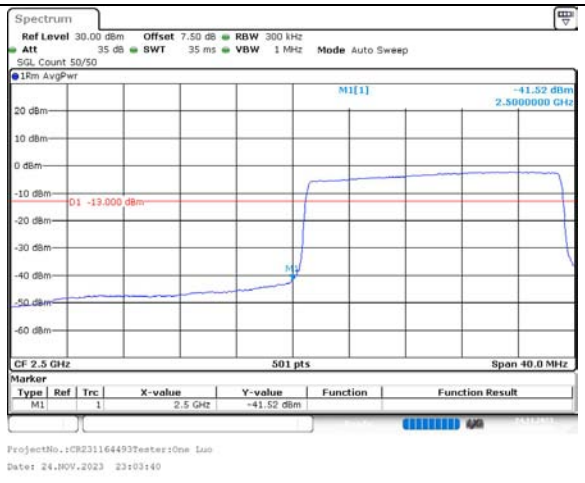
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **5MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

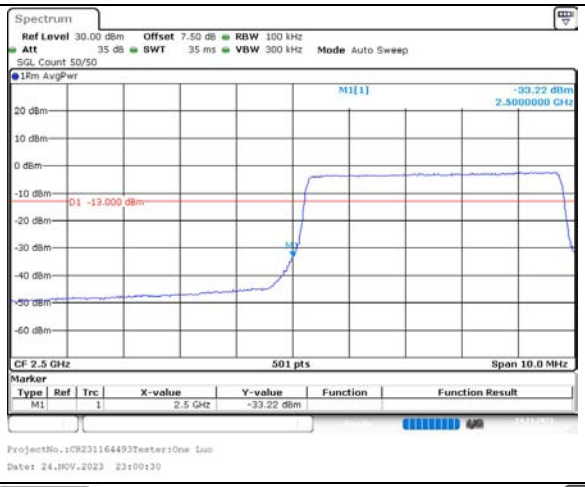
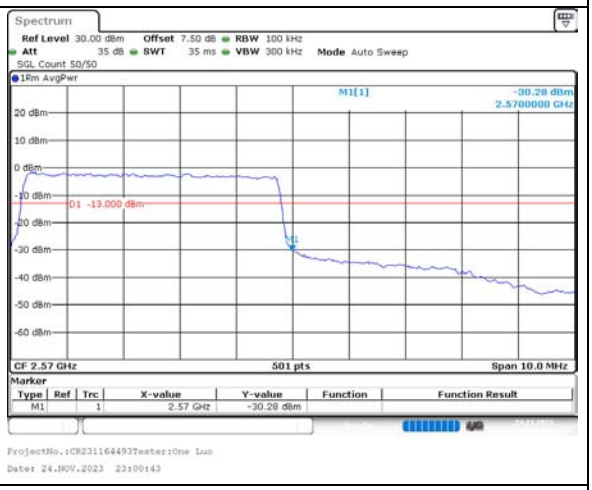
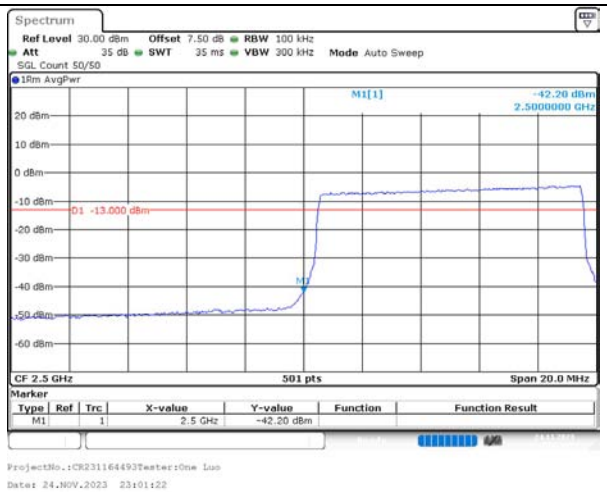
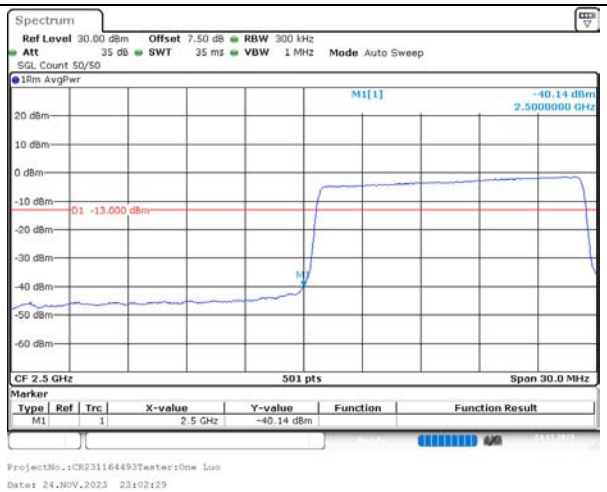
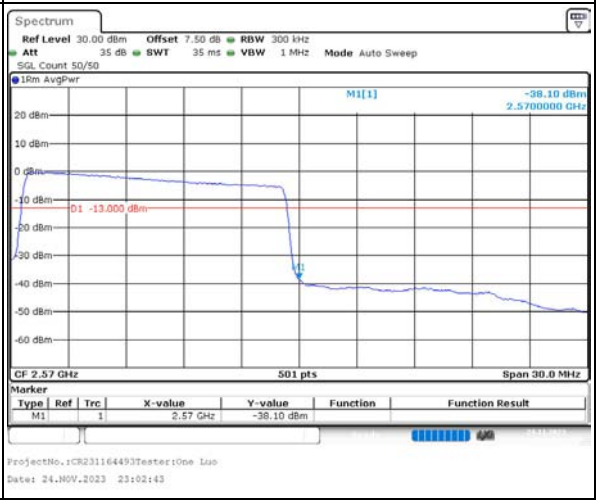
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **10MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

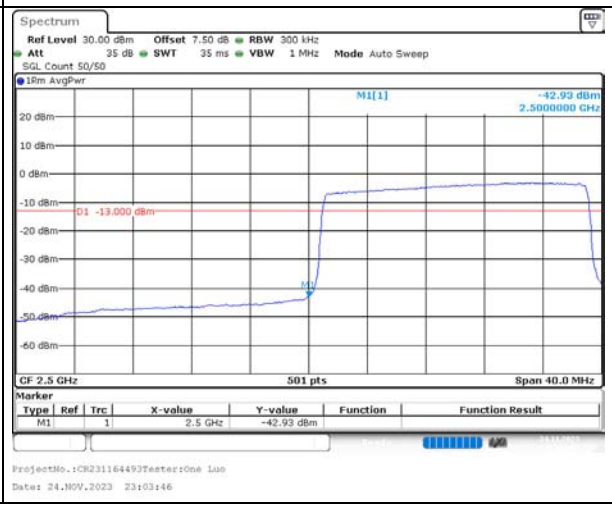
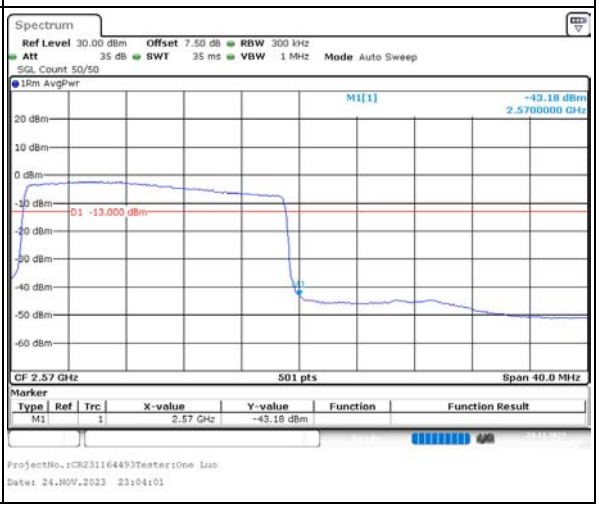
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **15MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

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

| Out of band emission, Band Edge | | |
|---|---|---|
| **Mode** | **Lowest** | **Highest** |
| QPSK 5MHz |  |  |
| QPSK 10MHz |  |  |
| QPSK 15MHz |  |  |

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

| Out of band emission, Band Edge | | |
|---|---|---|
| **Mode** | **Lowest** | **Highest** |
| 16QAM 5MHz |  |  |
| 16QAM 10MHz |  |  |
| 16QAM 15MHz |  |  |

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

## 4.10 Antenna Port Test Data and Results for LTE Band 12

| | | | |
|---|---|---|---|
| Serial Number: | 2D1L-2 | Test Date: | 2023/11/24~2023/12/20 |
| Test Site: | RF | Test Mode: | Transmitting |
| Tester: | One Luo | Test Result: | **Pass** |

| **Environmental Conditions:** | | | | | |
|---|---|---|---|---|---|
| Temperature: (℃) | 22.3~25.8 | Relative Humidity: (%) | 31~52 | ATM Pressure: (kPa) | 100.9~101.9 |

**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 | 2023/9/29 | 2024/9/28 |
| 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 | 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:**

| 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 | 24.04 | 23.52 | 23.43 | 16.75 | 34.77 |
| | RB1#3 | **24.16** | 23.63 | 23.6 | | |
| | RB1#5 | 24.02 | 23.44 | 23.43 | | |
| | RB3#0 | 24 | 23.56 | 23.51 | | |
| | RB3#3 | 23.61 | 23.54 | 23.51 | | |
| | RB6#0 | 22.84 | 22.58 | 22.51 | | |
| 1.4MHz 16QAM | RB1#0 | 22.49 | 22.57 | 22.38 | 15.4 | 34.77 |
| | RB1#3 | **22.81** | 22.72 | 22.62 | | |
| | RB1#5 | 22.55 | 22.58 | 22.47 | | |
| | RB3#0 | 22.77 | 22.5 | 22.55 | | |
| | RB3#3 | 22.76 | 22.55 | 22.55 | | |
| | RB6#0 | 21.66 | 21.55 | 21.44 | | |
| 3MHz QPSK | RB1#0 | **24.19** | 24.07 | 23.57 | 16.78 | 34.77 |
| | RB1#8 | 24.15 | 23.61 | 23.58 | | |
| | RB1#14 | 24.11 | 23.61 | 23.56 | | |
| | RB6#0 | 23.13 | 22.54 | 22.54 | | |
| | RB6#9 | 23.06 | 22.57 | 22.57 | | |
| | RB15#0 | 23.11 | 22.55 | 22.57 | | |
| 3MHz 16QAM | RB1#0 | 23.14 | **23.17** | 22.65 | 15.76 | 34.77 |
| | RB1#8 | 23.11 | 23.13 | 22.65 | | |
| | RB1#14 | 23.1 | 23.07 | 22.68 | | |
| | RB6#0 | 22.06 | 21.59 | 21.57 | | |
| | RB6#9 | 21.98 | 21.58 | 21.58 | | |
| | RB15#0 | 22.17 | 21.61 | 21.5 | | |
| 5MHz QPSK | RB1#0 | 24.09 | 23.61 | 23.49 | 16.78 | 34.77 |
| | RB1#13 | **24.19** | 23.65 | 23.65 | | |
| | RB1#24 | 24.06 | 23.50 | 23.48 | | |
| | RB15#0 | 23.32 | 22.48 | 22.75 | | |
| | RB15#10 | 23.10 | 22.66 | 22.60 | | |
| | RB25#0 | 23.17 | 22.56 | 22.65 | | |
| 5MHz 16QAM | RB1#0 | 23.05 | 22.43 | 22.69 | 15.83 | 34.77 |
| | RB1#13 | **23.24** | 22.52 | 22.89 | | |
| | RB1#24 | 22.95 | 22.37 | 22.76 | | |
| | RB15#0 | 22.13 | 21.53 | 21.70 | | |
| | RB15#10 | 21.83 | 21.69 | 21.56 | | |
| | RB25#0 | 22.01 | 21.59 | 21.67 | | |
| 10MHz QPSK | RB1#0 | 24.2 | 23.61 | 23.62 | 16.86 | 34.77 |
| | RB1#25 | **24.27** | 23.71 | 23.66 | | |
| | RB1#49 | 24.13 | 23.52 | 23.61 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | RB25#0 | 23.37 | 22.51 | 22.57 | | |
| | RB25#25 | 23.41 | 22.57 | 22.45 | | |
| | RB50#0 | 23.4 | 22.52 | 22.49 | | |
| 10MHz 16QAM | RB1#0 | 23.03 | 23.18 | 22.72 | 15.86 | 34.77 |
| | RB1#25 | 22.96 | **23.27** | 22.81 | | |
| | RB1#49 | 22.62 | 23.05 | 22.71 | | |
| | RB25#0 | 21.95 | 21.55 | 21.54 | | |
| | RB25#25 | 21.95 | 21.62 | 21.44 | | |
| | RB50#0 | 21.91 | 21.55 | 21.47 | | |

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 | 4.58 | 5.22 | 5.83 | 13 |
| | RB50#0 | 5.54 | 5.19 | 5.1 | 13 |
| 10MHz 16QAM | RB1#0 | 5.57 | 5.88 | 6.72 | 13 |
| | RB50#0 | 6.35 | 6.14 | 5.97 | 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 | 1.096 | 1.096 | 1.102 | 1.302 | 1.314 | 1.302 |
| 1.4MHz 16QAM | 1.096 | 1.09 | 1.096 | 1.32 | 1.284 | 1.296 |
| 3MHz QPSK | 2.683 | 2.683 | 2.683 | 2.88 | 2.868 | 2.88 |
| 3MHz 16QAM | 2.683 | 2.683 | 2.683 | 2.892 | 2.868 | 2.88 |
| 5MHz QPSK | 4.531 | 4.531 | 4.531 | 5.22 | 5.18 | 5.22 |
| 5MHz 16QAM | 4.531 | 4.531 | 4.551 | 5.16 | 5.2 | 5.26 |
| 10MHz QPSK | 9.022 | 8.942 | 8.942 | 10 | 9.8 | 9.92 |
| 10MHz 16QAM | 9.022 | 8.942 | 8.942 | 9.8 | 9.92 | 9.88 |

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

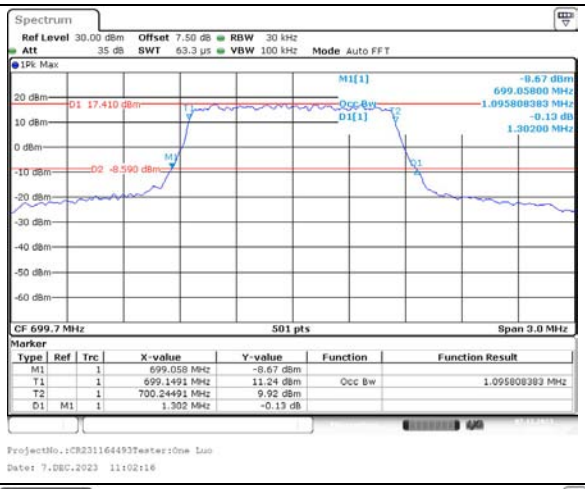
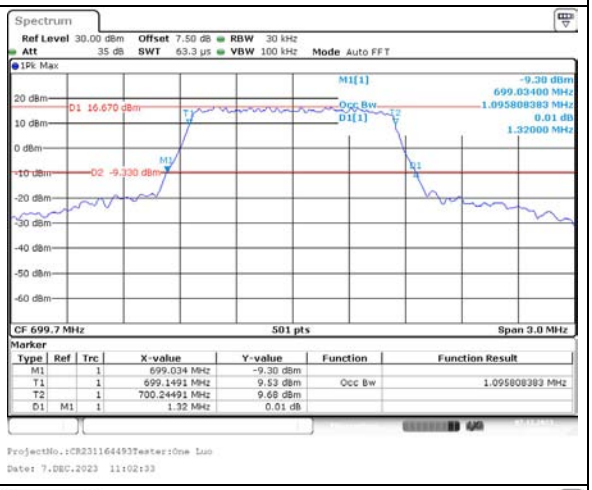
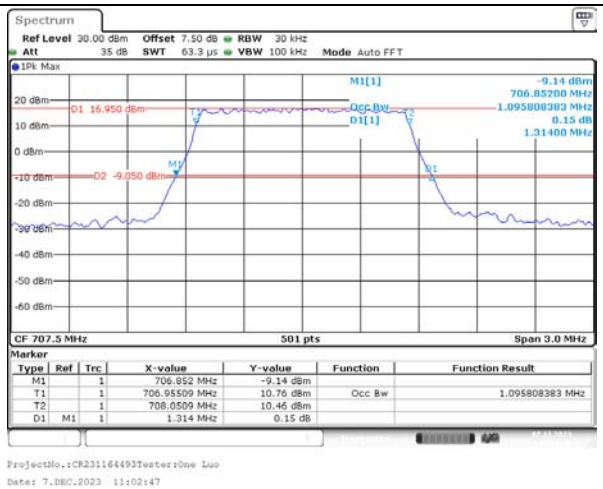
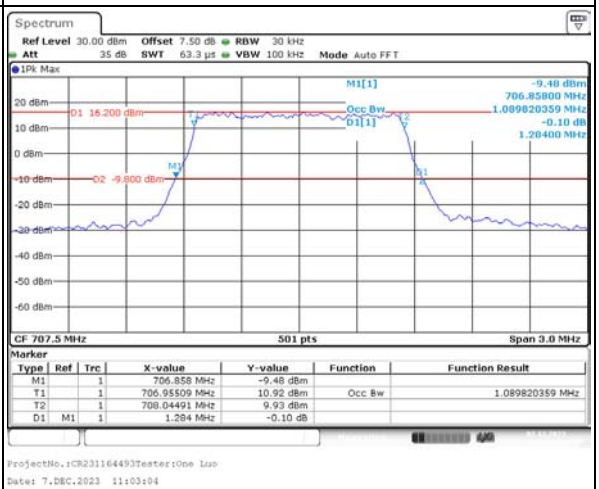
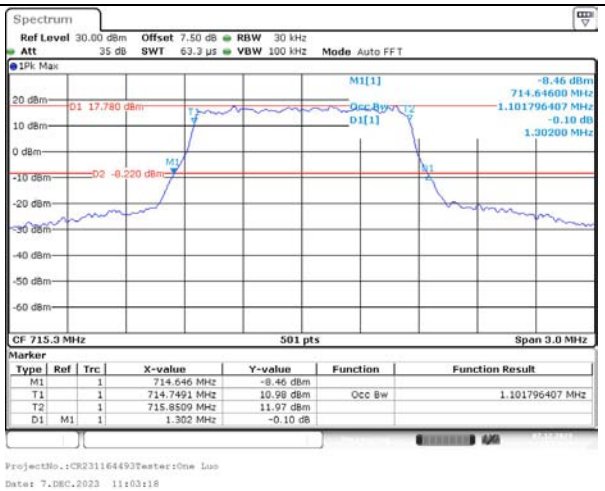
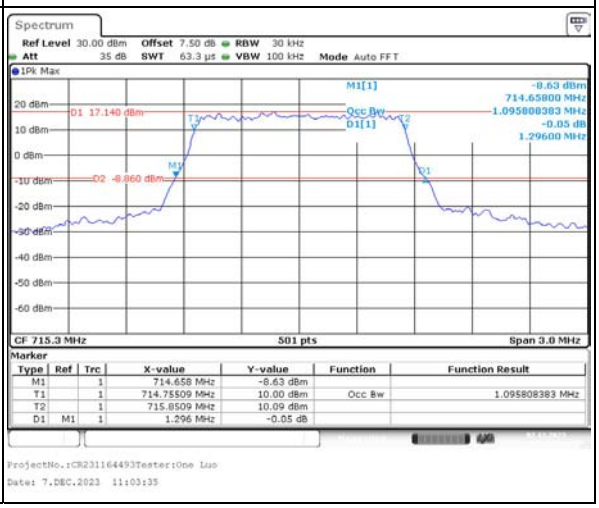
| **Spurious Emissions at Antenna Terminal** | |
|---|---|
| **Result:** | **Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.** |

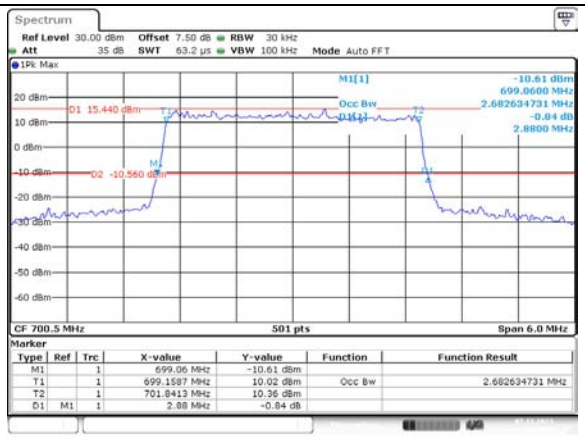
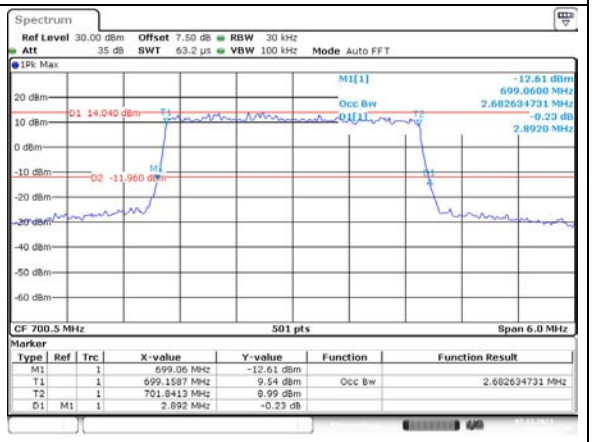
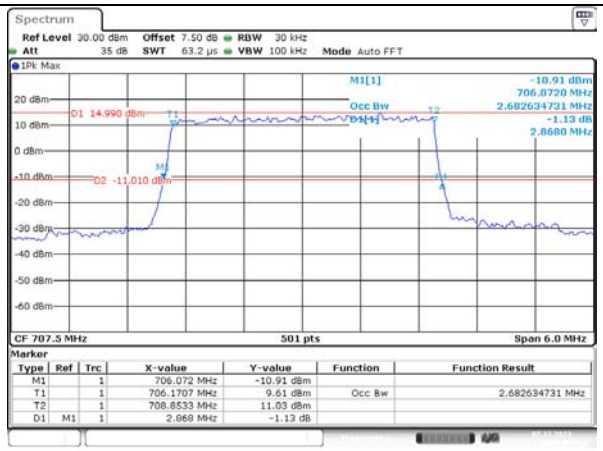
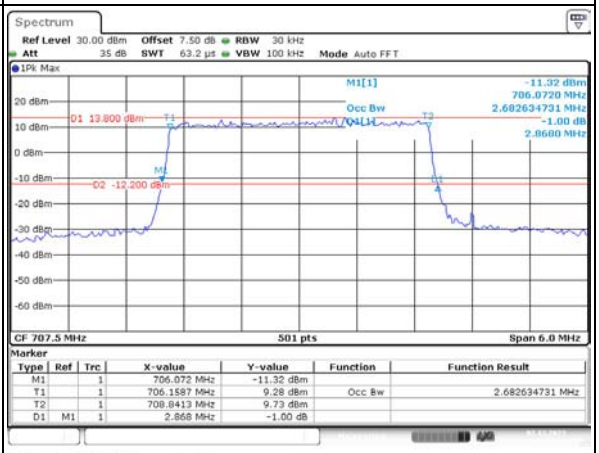
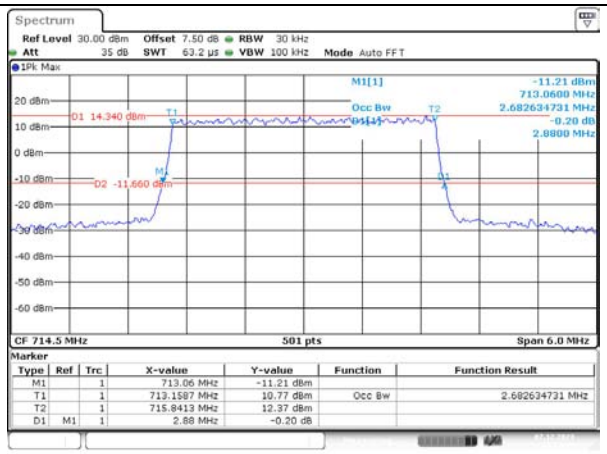
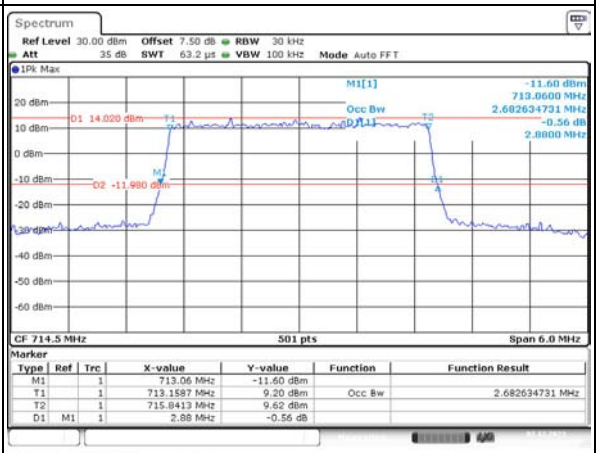
| **Out of band emission, Band Edge** | |
|---|---|
| **Result:** | **Pass, Please refer to the test plots of Out of band emission, Band Edge.** |

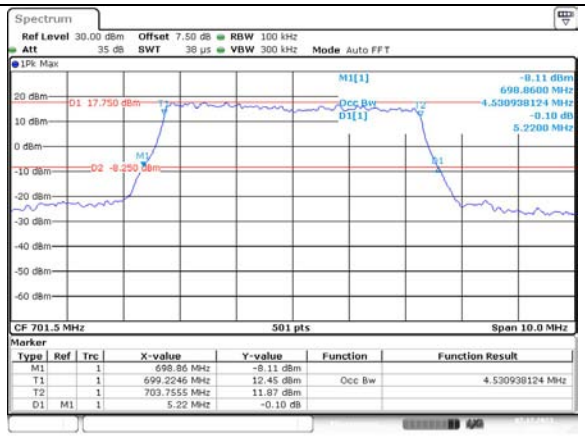
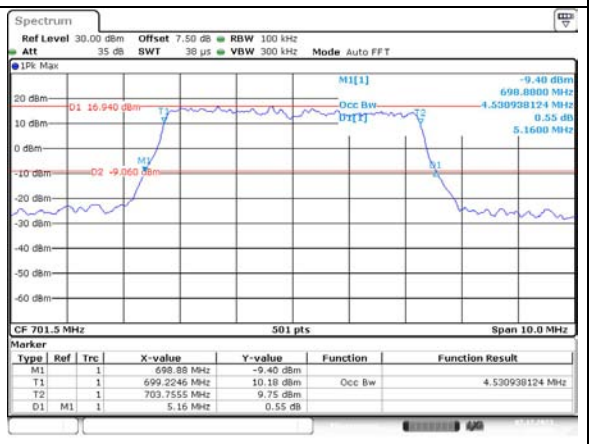
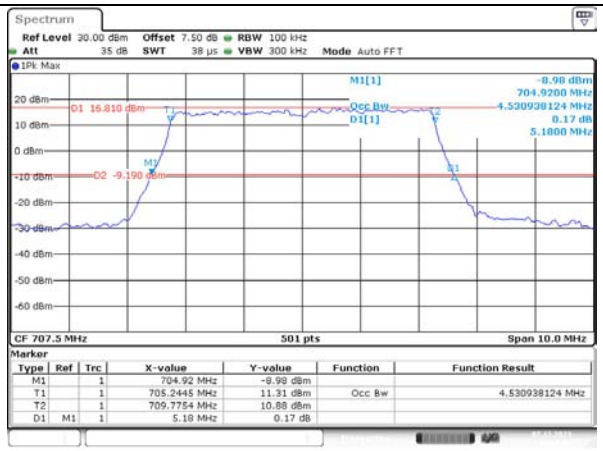
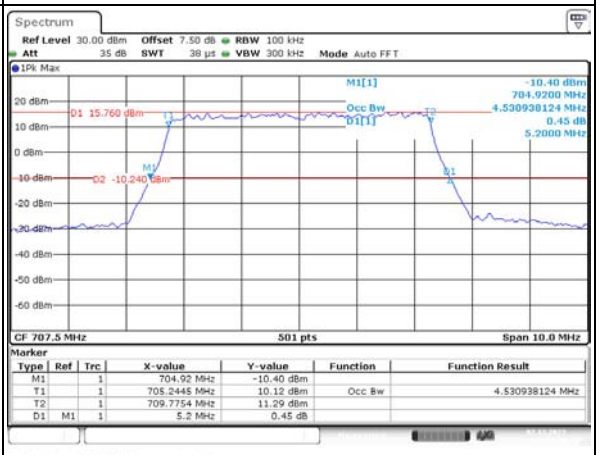
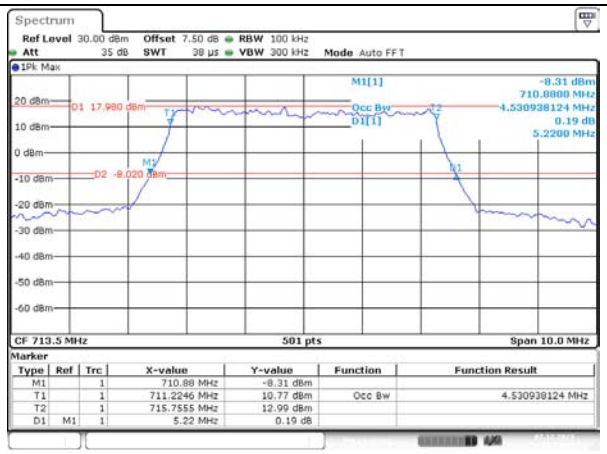
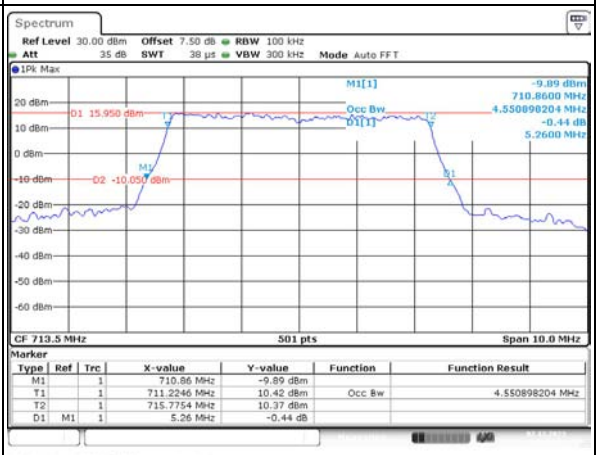
| **Frequency Stability** | | | | | | |
|---|---|---|---|---|---|---|
| Test Mode: | 10M QPSK | Test Channel: Lowest for Lower Edge,Highest for Upper Edge | | | | |
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.8 | 699.458 | 699.00 | 715.411 | 716.00 |
| | -20 | 3.8 | 699.416 | 699.00 | 715.421 | 716.00 |
| | -10 | 3.8 | 699.495 | 699.00 | 715.442 | 716.00 |
| | 0 | 3.8 | 699.489 | 699.00 | 715.489 | 716.00 |
| | 10 | 3.8 | 699.407 | 699.00 | 715.469 | 716.00 |
| | 20 | 3.8 | 699.485 | 699.00 | 715.471 | 716.00 |
| | 30 | 3.8 | 699.445 | 699.00 | 715.405 | 716.00 |
| | 40 | 3.8 | 699.473 | 699.00 | 715.491 | 716.00 |
| | 50 | 3.8 | 699.451 | 699.00 | 715.491 | 716.00 |
| Frequency Stability vs. Voltage | 20 | 3.2 | 699.449 | 699.00 | 715.455 | 716.00 |
| | 20 | 4.4 | 699.441 | 699.00 | 715.440 | 716.00 |
| | | | | | **Result:** | **Pass** |

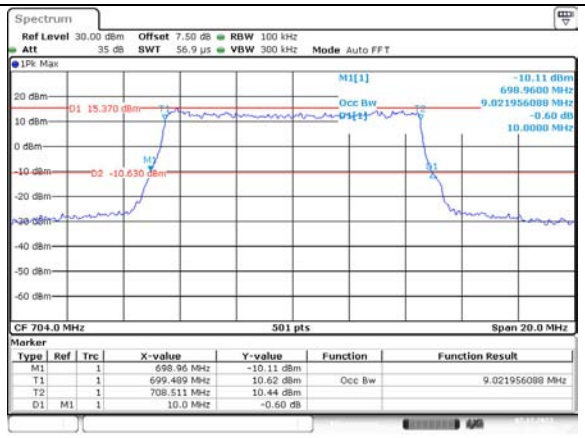
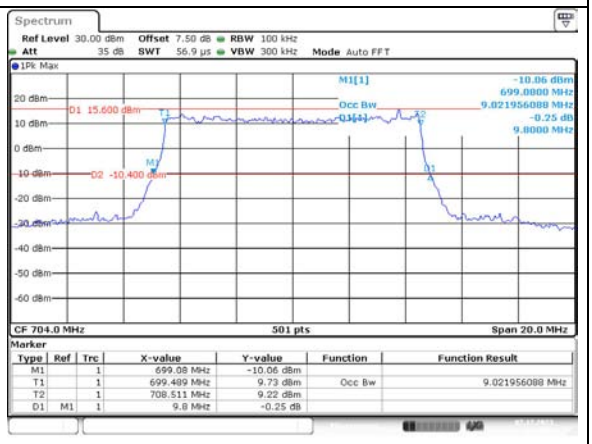
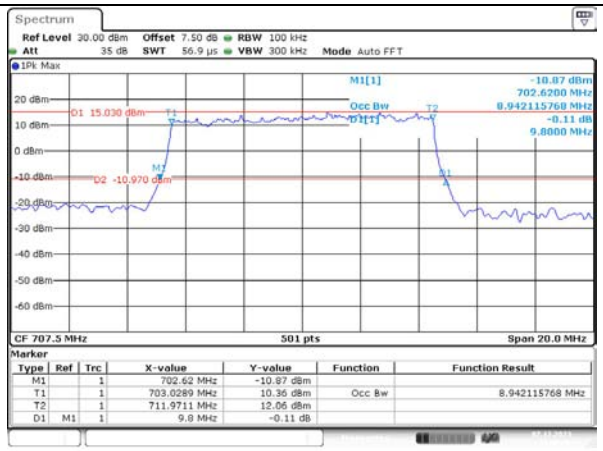
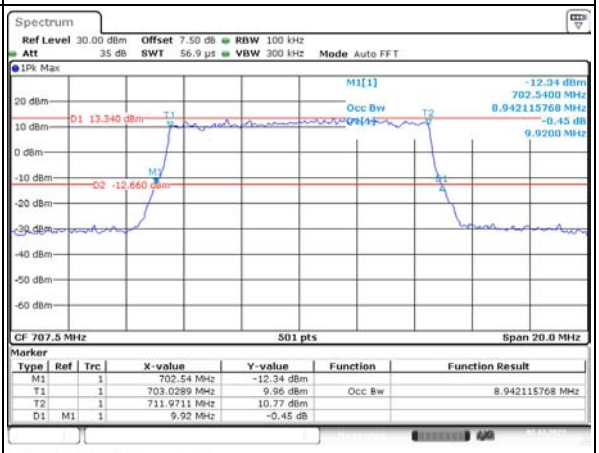
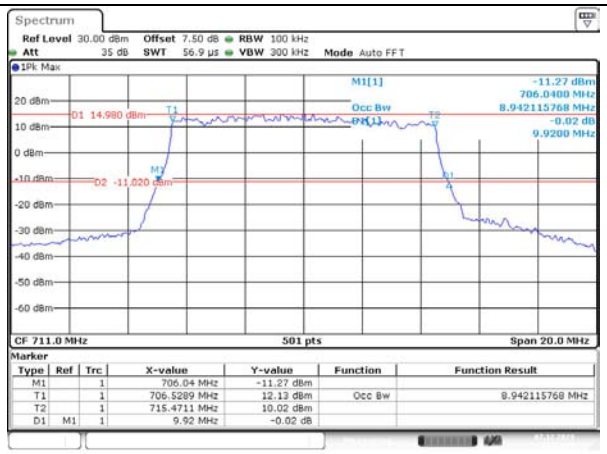
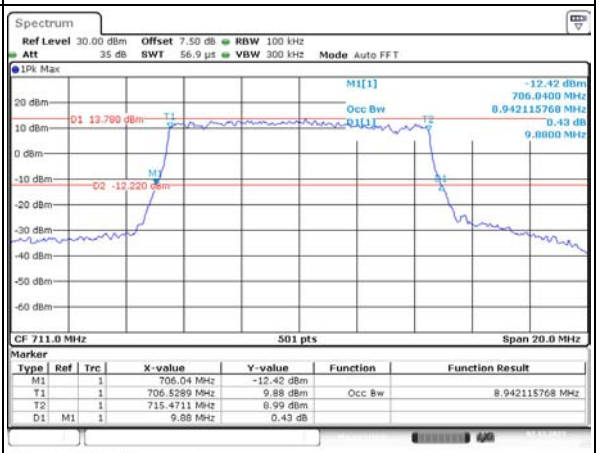
| Test Mode: | 10M 16QAM | Test Channel: Lowest for Lower Edge,Highest for Upper Edge | | | | |
|---|---|---|---|---|---|---|
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.8 | 699.458 | 699.00 | 715.474 | 716.00 |
| | -20 | 3.8 | 699.447 | 699.00 | 715.460 | 716.00 |
| | -10 | 3.8 | 699.411 | 699.00 | 715.480 | 716.00 |
| | 0 | 3.8 | 699.402 | 699.00 | 715.405 | 716.00 |
| | 10 | 3.8 | 699.458 | 699.00 | 715.474 | 716.00 |
| | 20 | 3.8 | 699.489 | 699.00 | 715.471 | 716.00 |
| | 30 | 3.8 | 699.463 | 699.00 | 715.421 | 716.00 |
| | 40 | 3.8 | 699.423 | 699.00 | 715.466 | 716.00 |
| | 50 | 3.8 | 699.453 | 699.00 | 715.472 | 716.00 |
| Frequency Stability vs. Voltage | 20 | 3.2 | 699.406 | 699.00 | 715.420 | 716.00 |
| | 20 | 4.4 | 699.456 | 699.00 | 715.433 | 716.00 |
| | | | | | **Result:** | **Pass** |

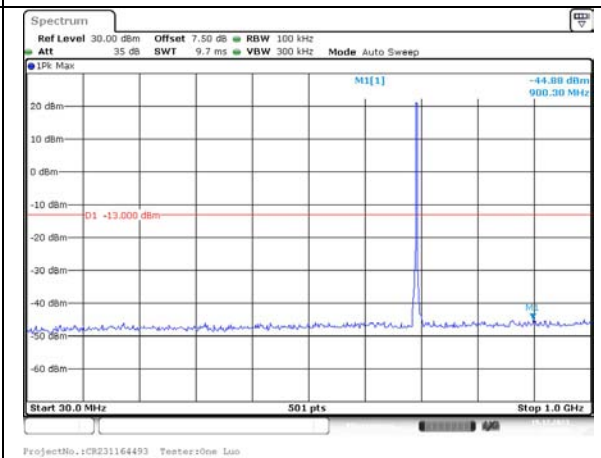
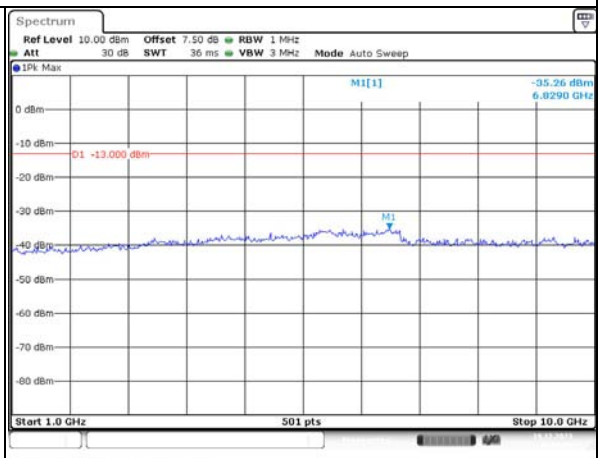
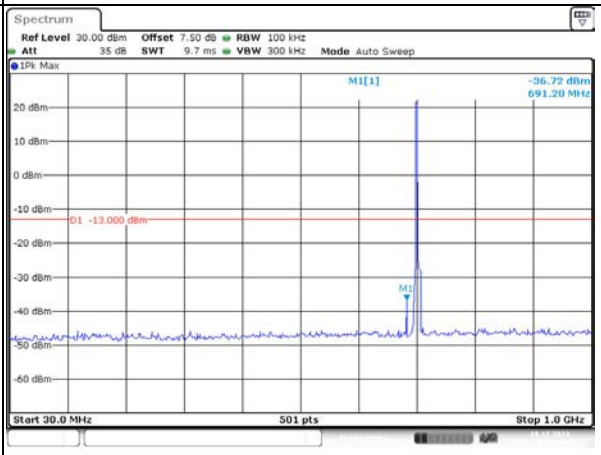
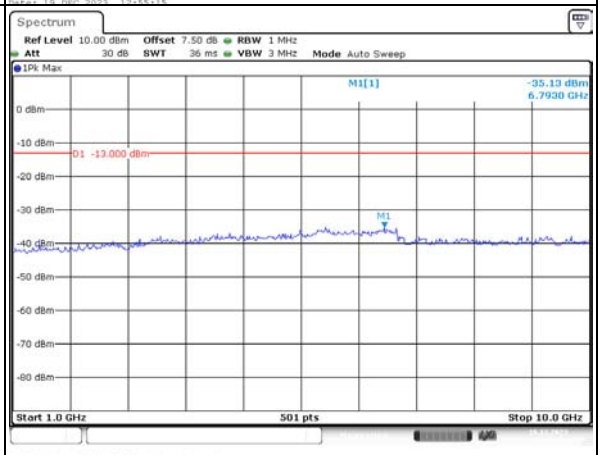
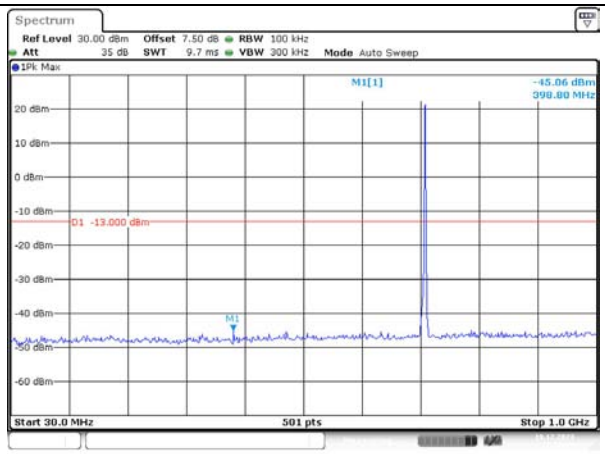
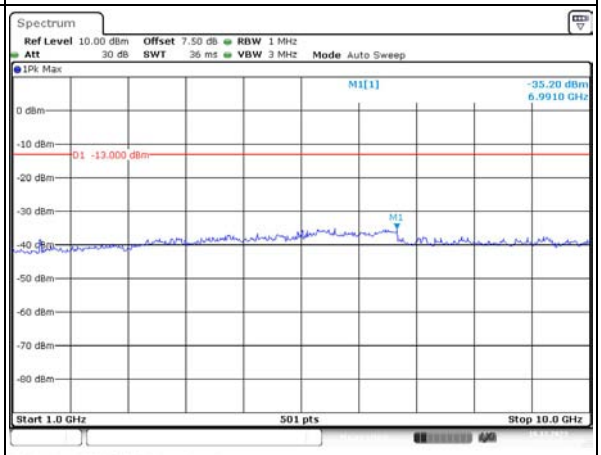
**Test Plots(***Note: The 7.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer.***)**

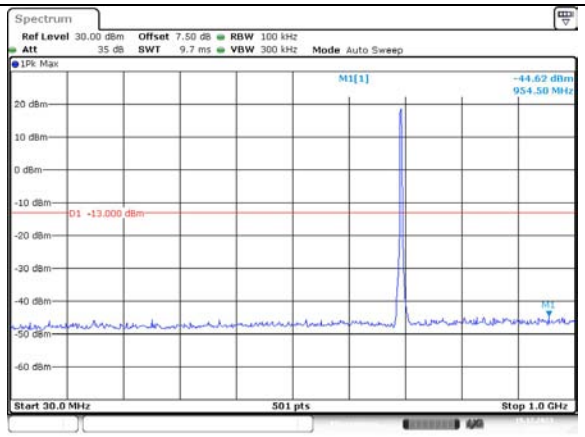
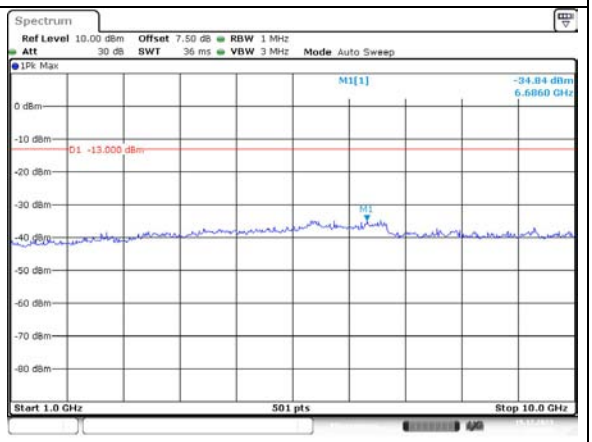
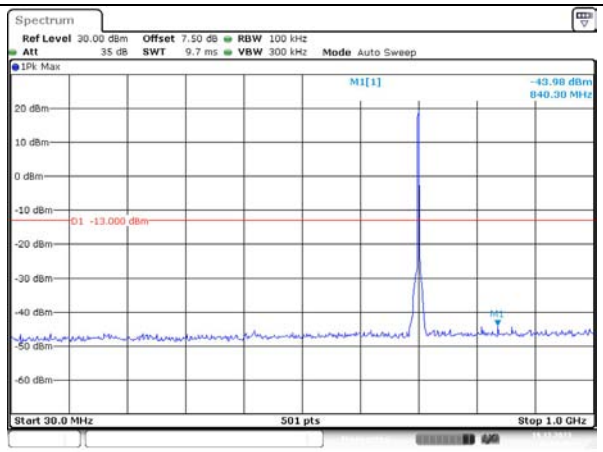
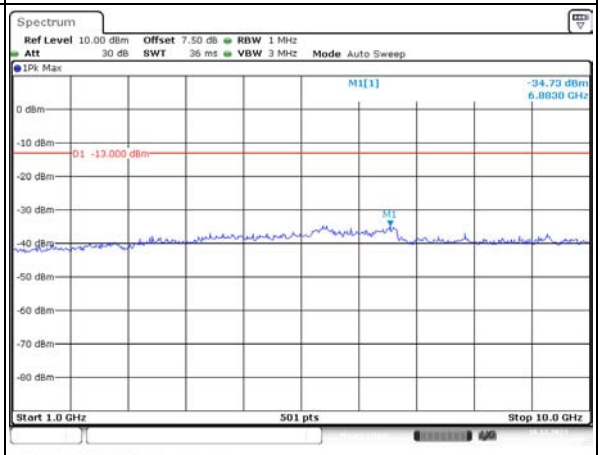
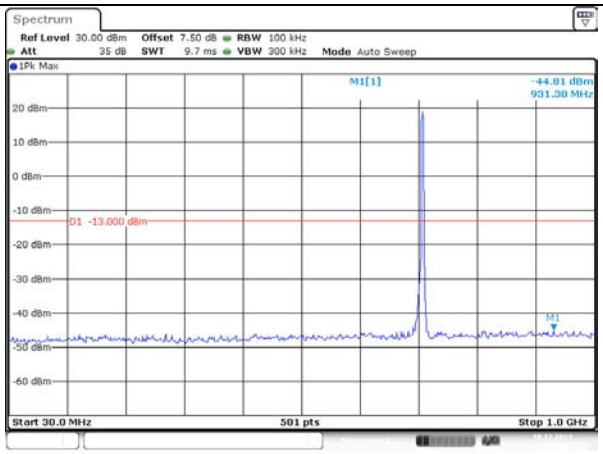
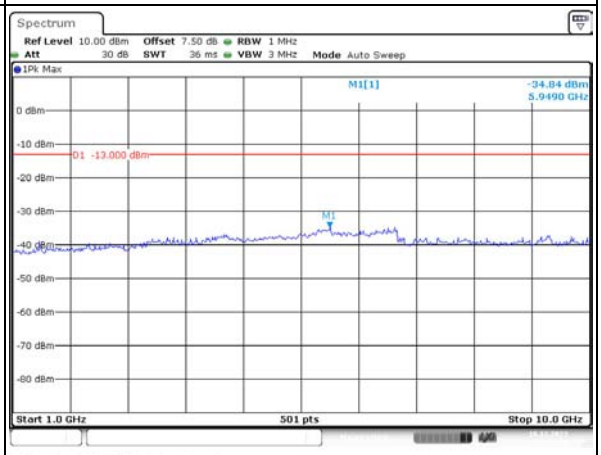
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 1.4MHz Bandwidth QPSK | 1.4MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

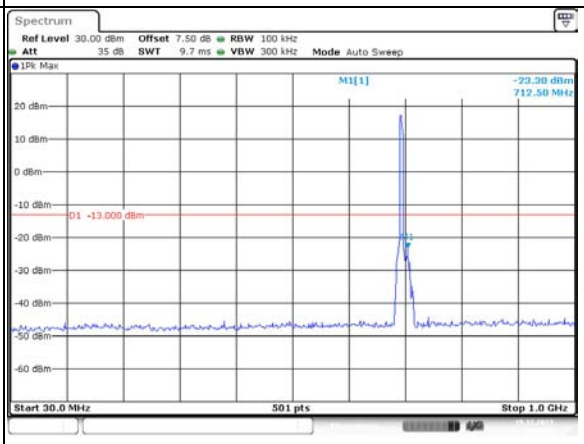
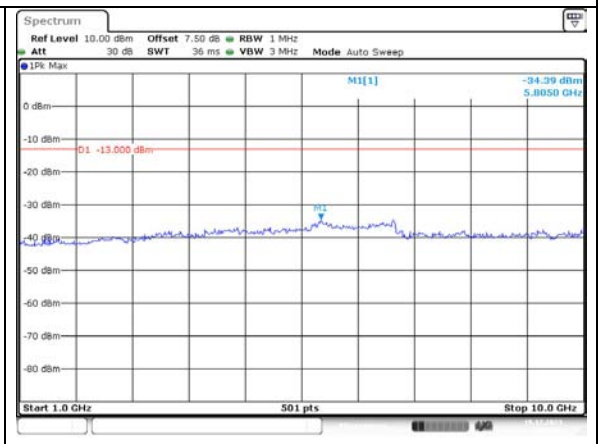
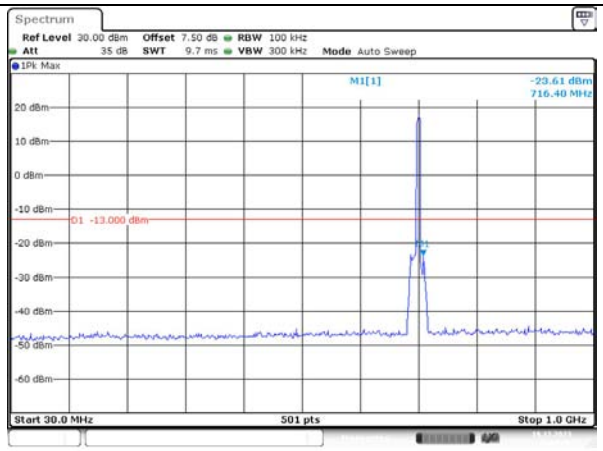
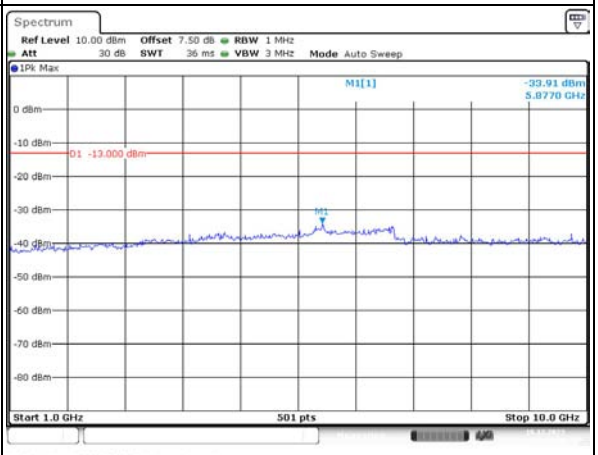
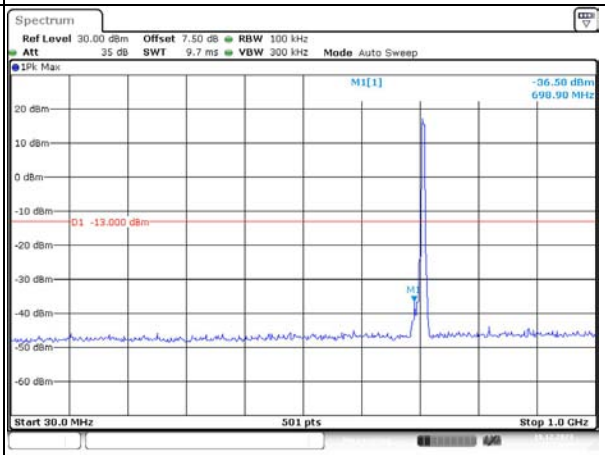
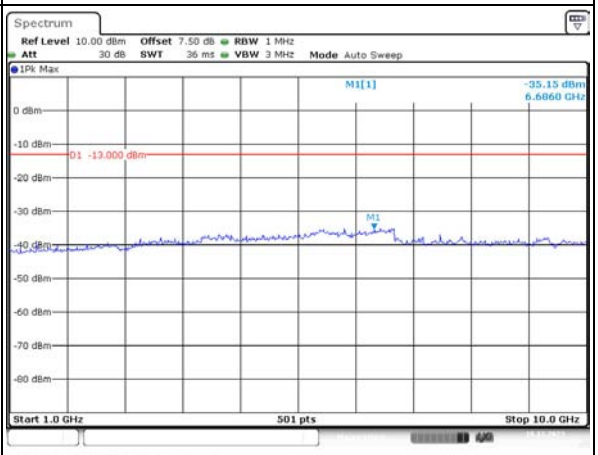
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 3MHz Bandwidth QPSK | 3MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

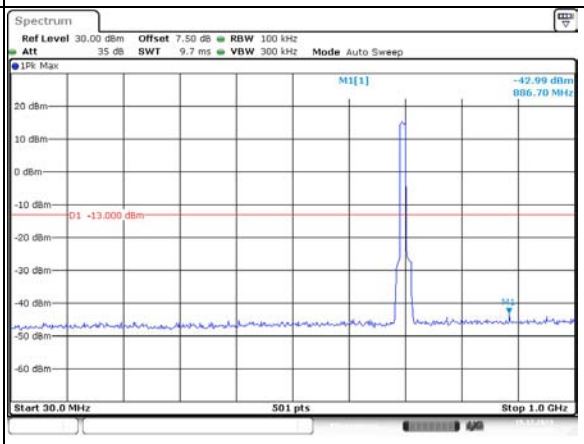
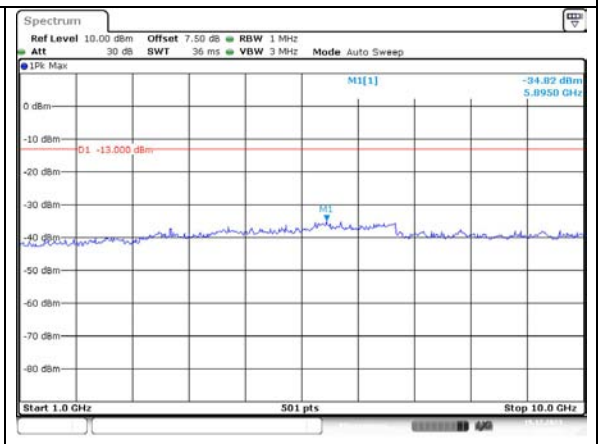
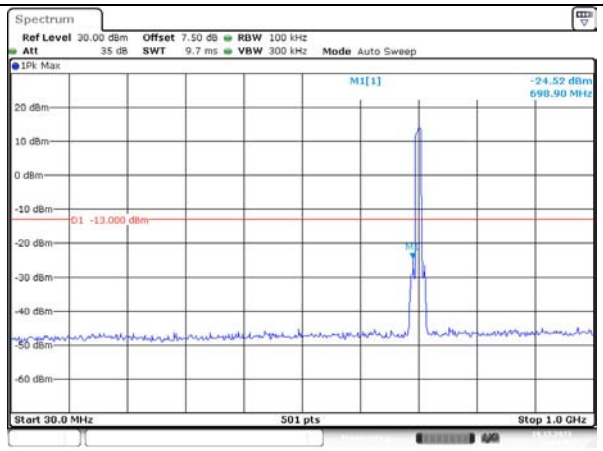
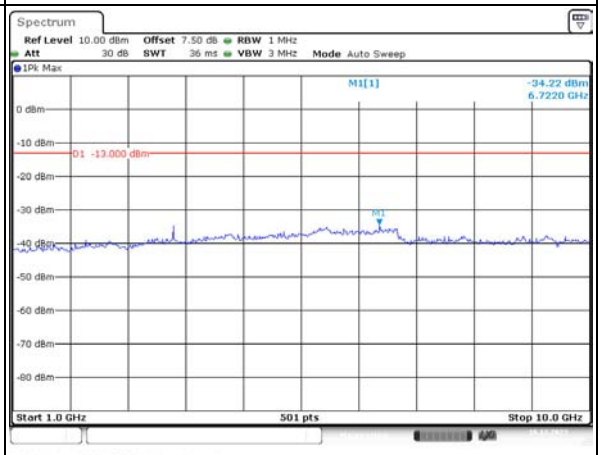
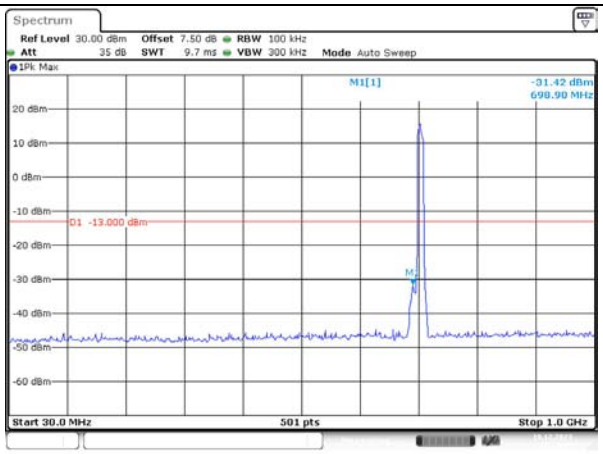
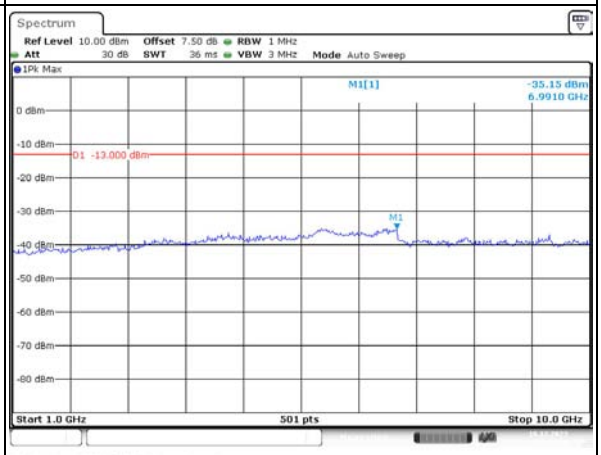
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 5MHz Bandwidth QPSK | 5MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

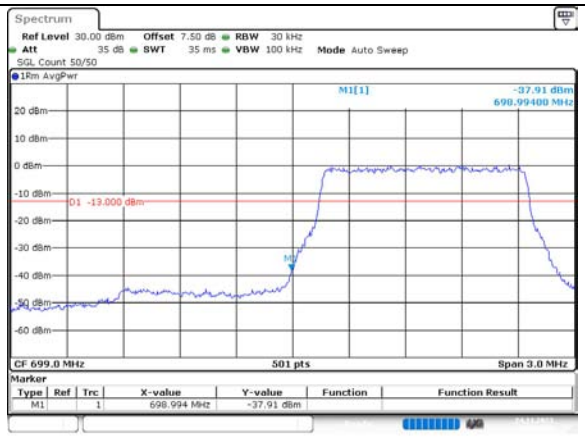
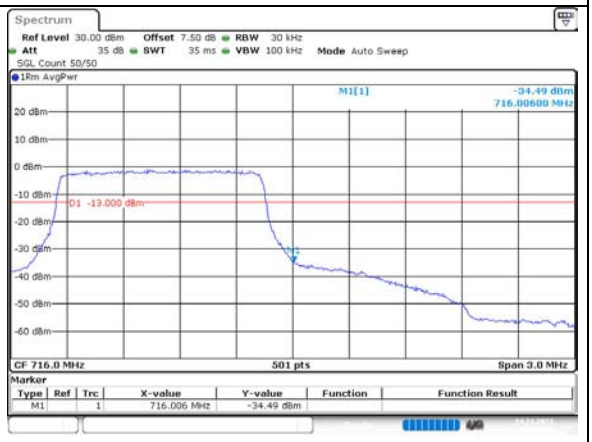
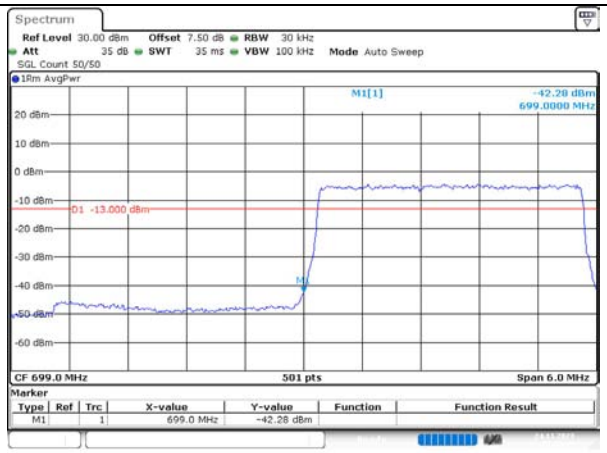
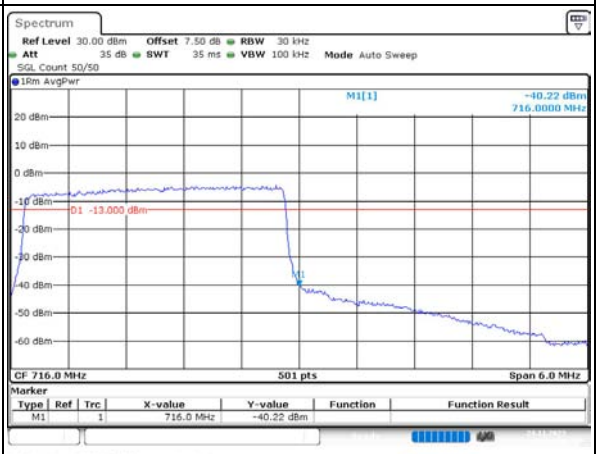
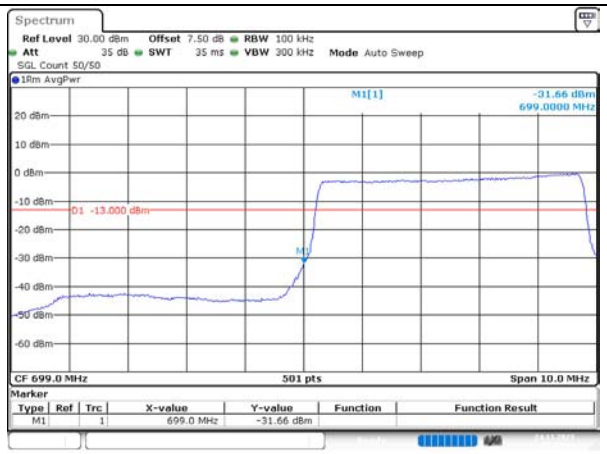
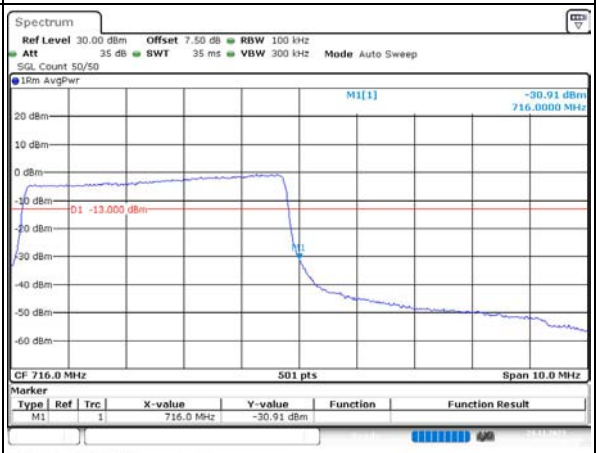
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 10MHz Bandwidth QPSK | 10MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

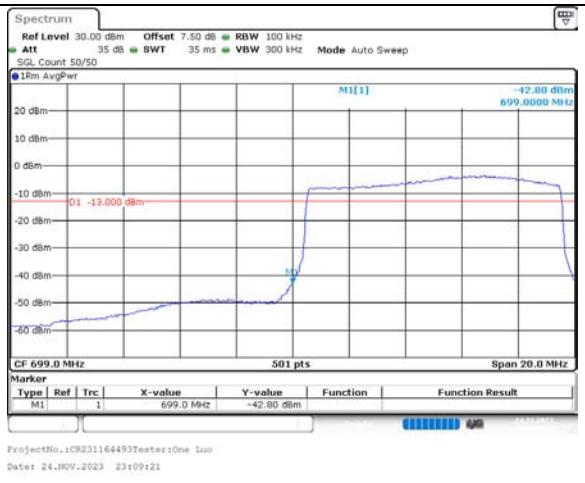
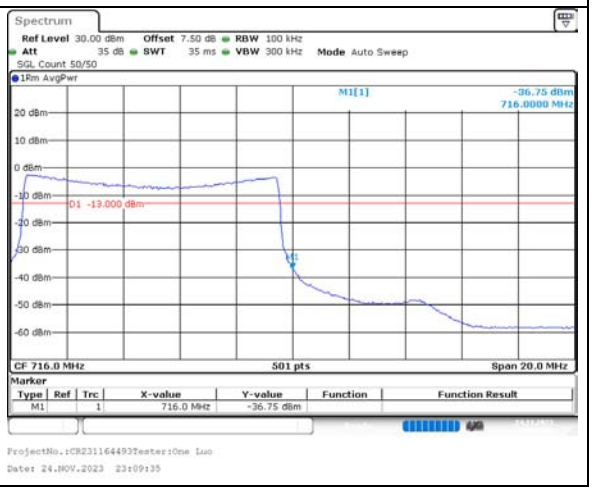
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **1.4MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

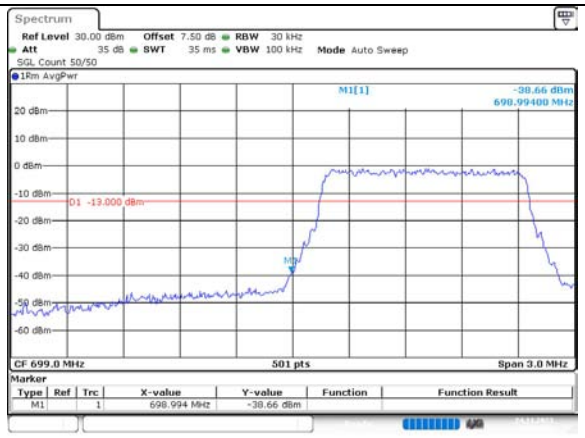
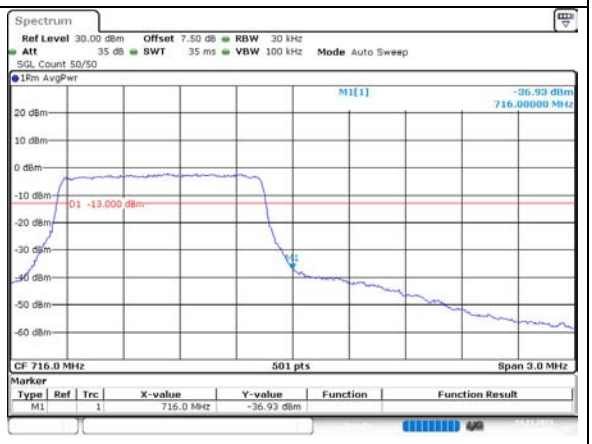
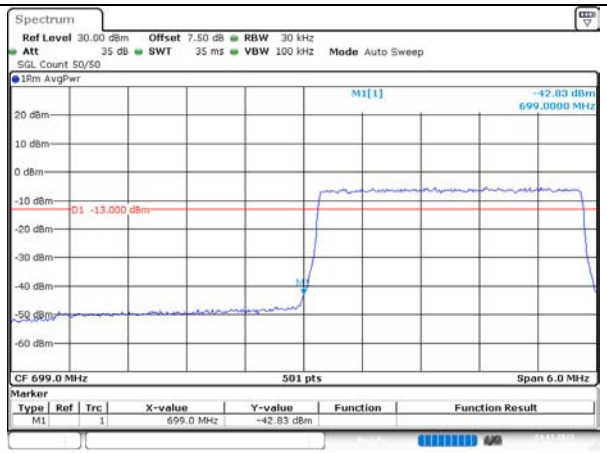
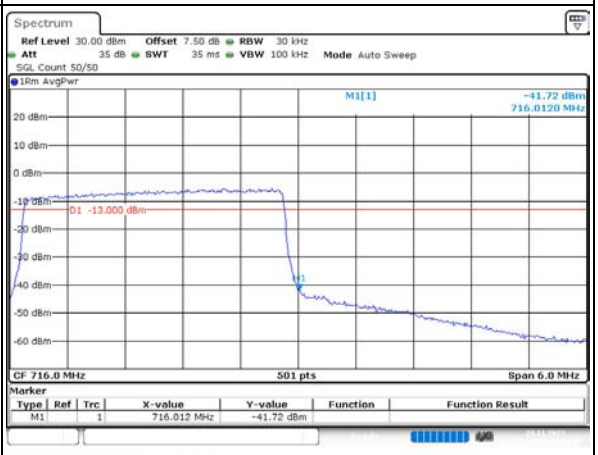
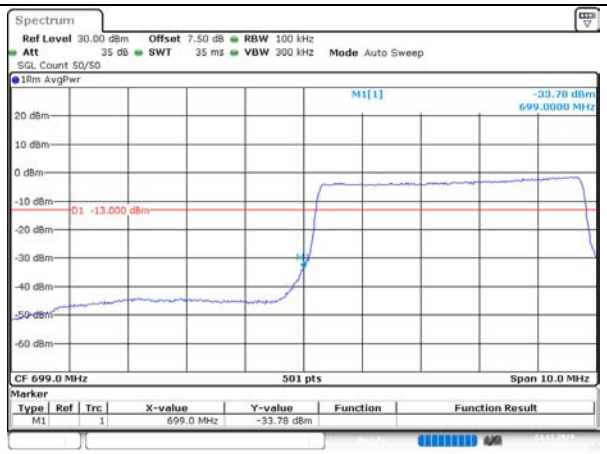
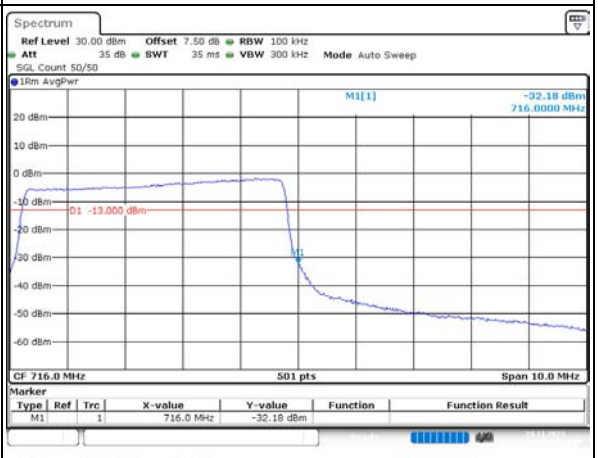
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **3MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

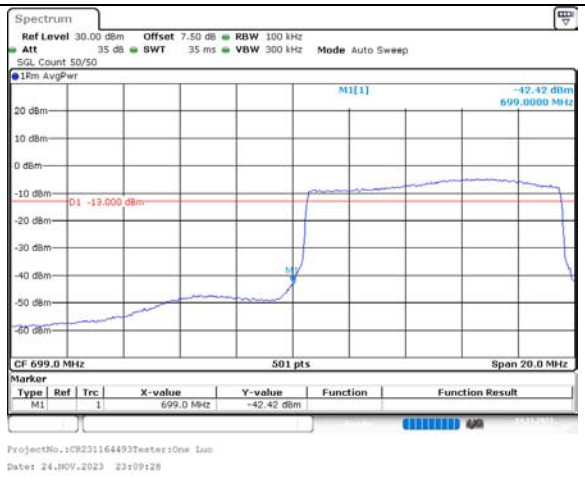
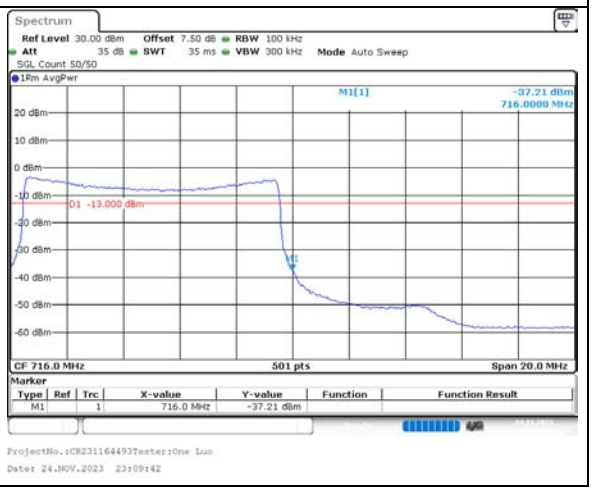
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **5MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

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

| 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 |  |  |

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

| | | | |
|---|---|---|---|
| Serial Number: | 2D1L-2 | Test Date: | 2023/11/24~2023/12/20 |
| Test Site: | RF | Test Mode: | Transmitting |
| Tester: | One Luo | Test Result: | **Pass** |

| **Environmental Conditions:** | | | | | |
|---|---|---|---|---|---|
| Temperature: (℃) | 22.3~25.8 | Relative Humidity: (%) | 31~52 | ATM Pressure: (kPa) | 100.9~101.9 |

**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 | 2023/9/29 | 2024/9/28 |
| 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:**

**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 | 23.59 | 23.51 | 23.48 | 16.04 | 34.77 |
| | RB1#13 | **23.69** | 23.65 | 23.63 | | |
| | RB1#24 | 23.52 | 23.44 | 23.52 | | |
| | RB15#0 | 22.51 | 22.58 | 22.77 | | |
| | RB15#10 | 22.72 | 22.43 | 22.65 | | |
| | RB25#0 | 22.62 | 22.45 | 22.63 | | |
| 5MHz 16QAM | RB1#0 | 22.87 | 22.61 | 22.33 | 15.27 | 34.77 |
| | RB1#13 | **22.92** | 22.65 | 22.5 | | |
| | RB1#24 | 22.76 | 22.47 | 22.38 | | |
| | RB15#0 | 21.48 | 21.59 | 21.8 | | |
| | RB15#10 | 21.69 | 21.49 | 21.66 | | |
| | RB25#0 | 21.64 | 21.49 | 21.7 | | |
| 10MHz QPSK | RB1#0 | 24.14 | 23.64 | 23.65 | 16.58 | 34.77 |
| | RB1#25 | **24.23** | 23.74 | 23.72 | | |
| | RB1#49 | 24.05 | 23.62 | 23.64 | | |
| | RB25#0 | 22.89 | 22.43 | 22.53 | | |
| | RB25#25 | 22.7 | 22.37 | 22.43 | | |
| | RB50#0 | 22.75 | 22.4 | 22.48 | | |
| 10MHz 16QAM | RB1#0 | 23.2 | 22.76 | 22.62 | 15.63 | 34.77 |
| | RB1#25 | **23.28** | 22.75 | 22.7 | | |
| | RB1#49 | 23.1 | 22.72 | 22.58 | | |
| | RB25#0 | 21.48 | 21.46 | 21.62 | | |
| | RB25#25 | 21.39 | 21.33 | 21.52 | | |
| | RB50#0 | 21.41 | 21.39 | 21.51 | | |

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 | 5.65 | 5.62 | 5.8 | 13 |
| | RB50#0 | 5.07 | 5.01 | 5.13 | 13 |
| 10MHz 16QAM | RB1#0 | 6.64 | 6.23 | 6.7 | 13 |
| | RB50#0 | 6 | 6 | 5.97 | 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 |
| 5MHz QPSK | 4.531 | 4.511 | 4.551 | 5.18 | 5.16 | 5.24 |
| 5MHz 16QAM | 4.531 | 4.551 | 4.531 | 5.22 | 5.22 | 5.22 |
| 10MHz QPSK | 8.942 | 8.942 | 8.942 | 9.92 | 9.72 | 9.88 |
| 10MHz 16QAM | 8.942 | 8.942 | 8.982 | 9.8 | 9.8 | 9.84 |
| Note: The test plots please refer to the Plots of Occupied Bandwidth | | | | | | |

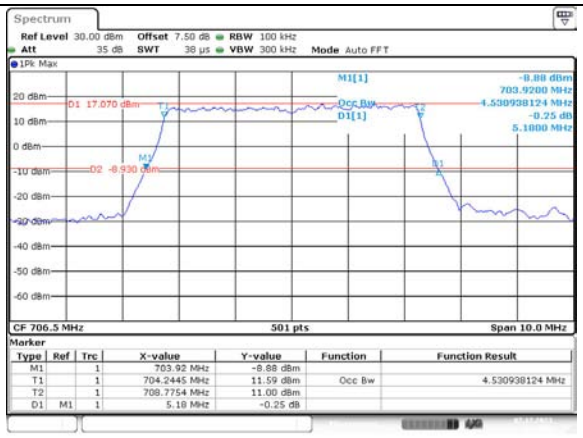
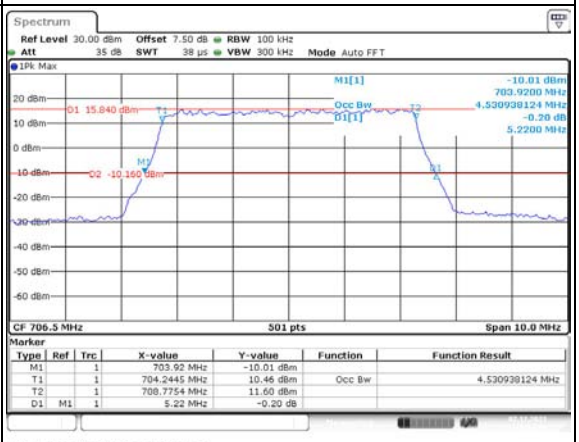
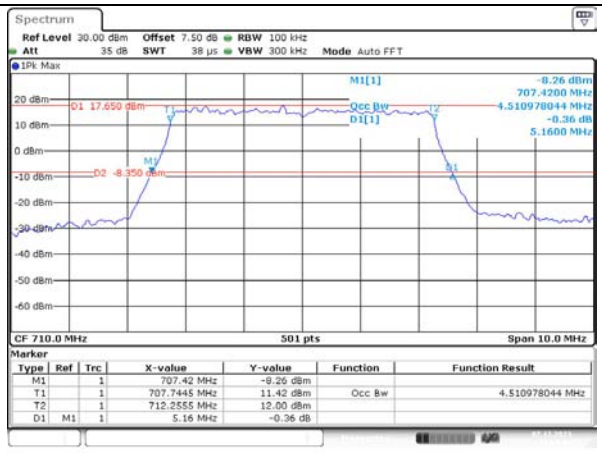
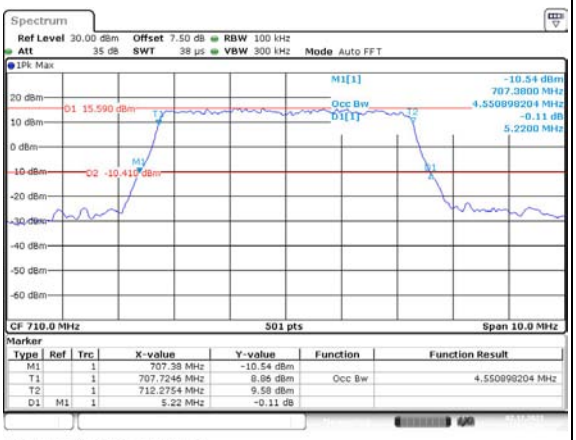
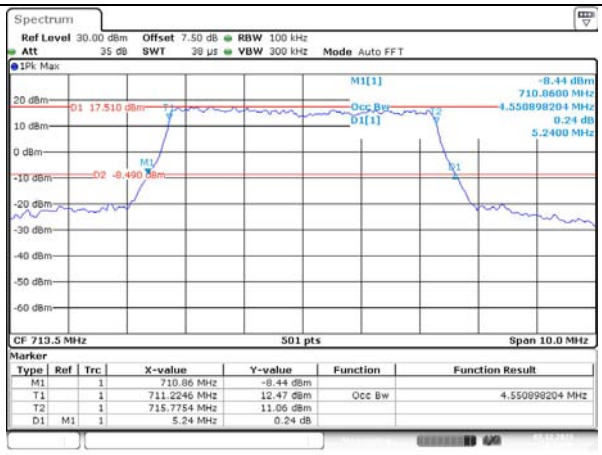
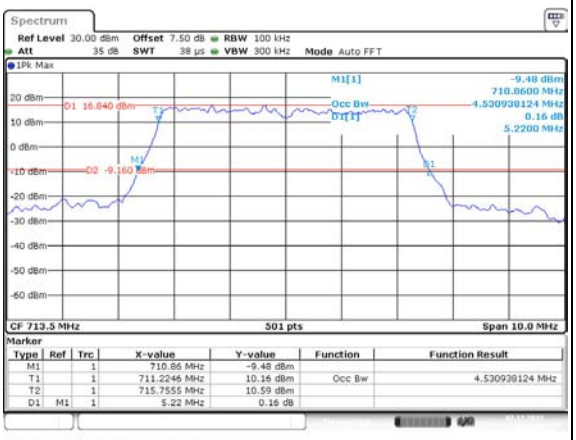
| **Spurious Emissions at Antenna Terminal** | |
|---|---|
| **Result:** | **Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.** |

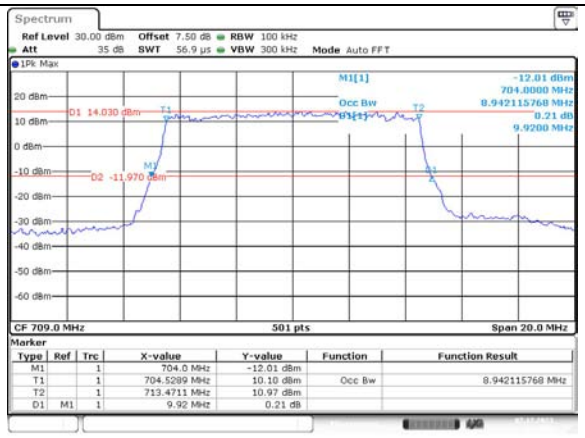
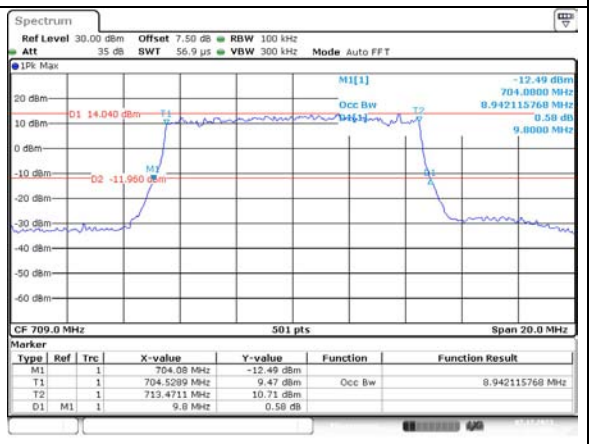
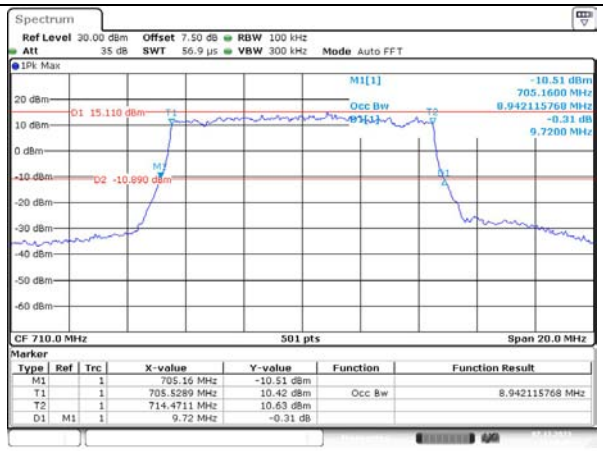
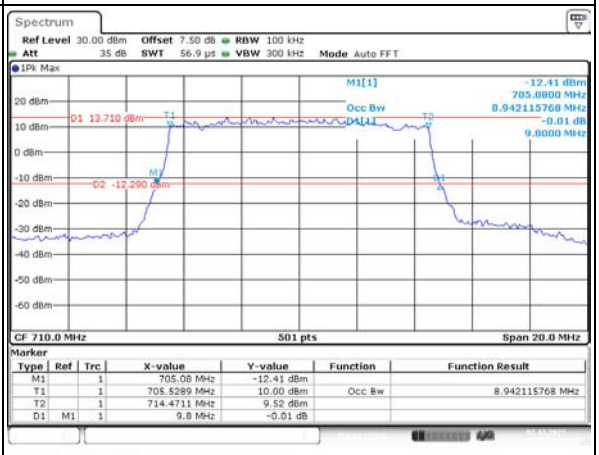
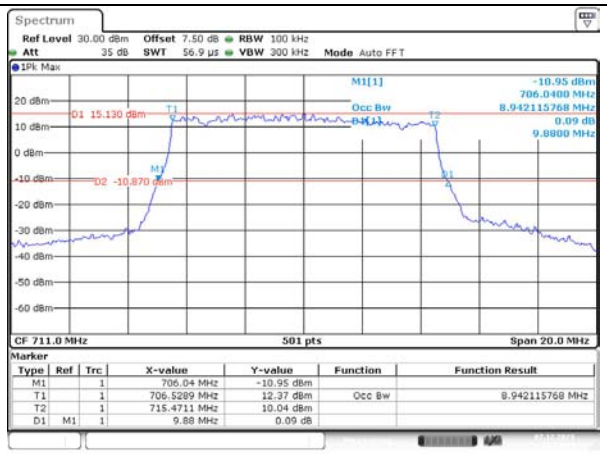
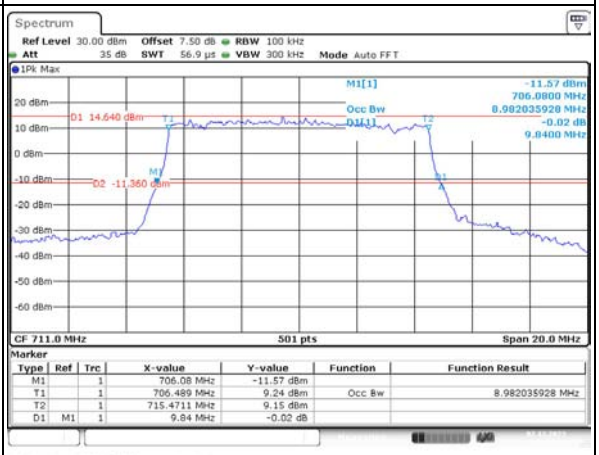
| **Out of band emission, Band Edge** | |
|---|---|
| **Result:** | **Pass, Please refer to the test plots of Out of band emission, Band Edge.** |

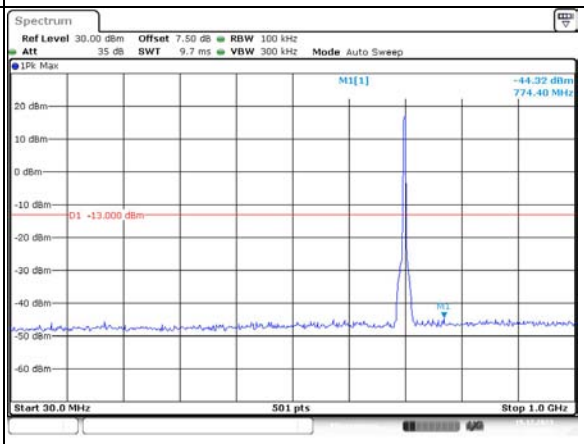
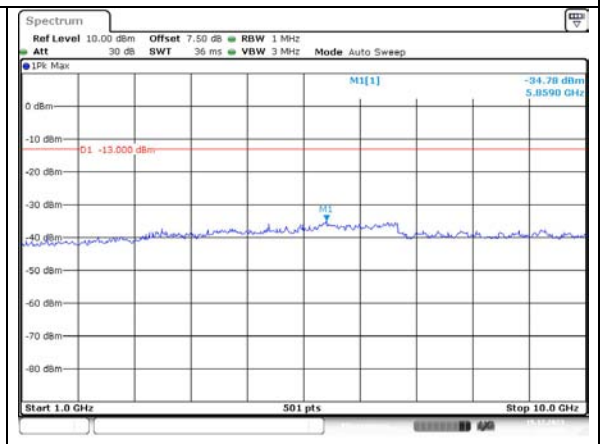
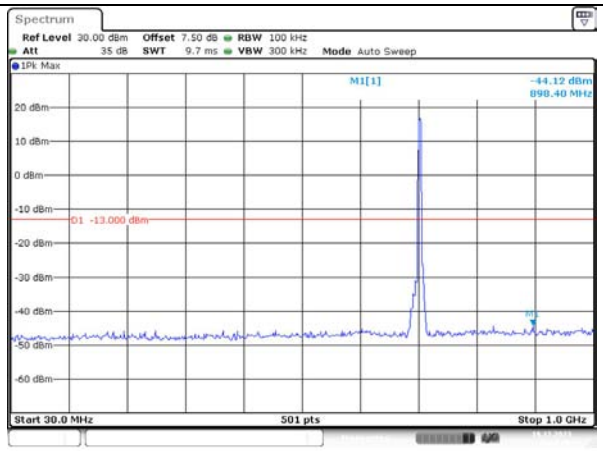
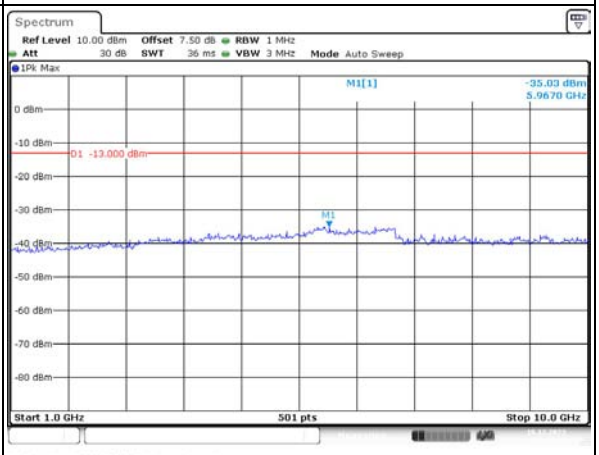
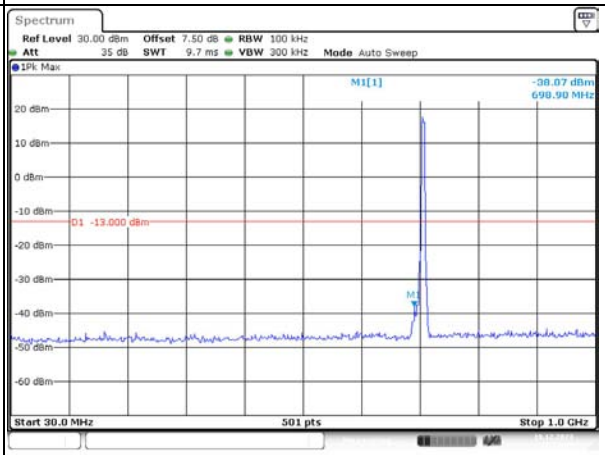
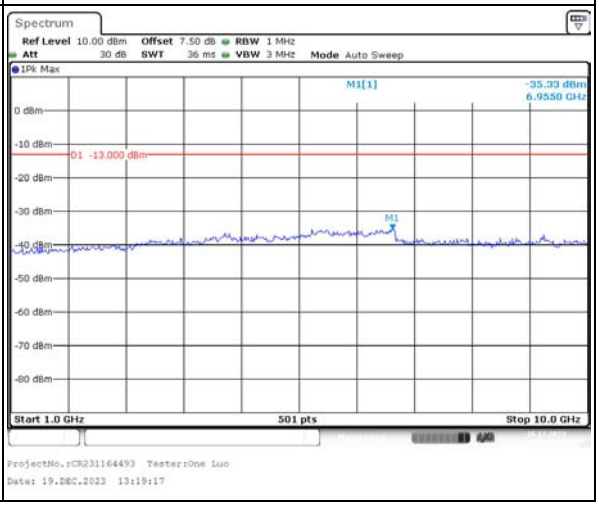
| **Frequency Stability** | | | | | | |
|---|---|---|---|---|---|---|
| Test Mode: | 10M QPSK | Test Channel: Lowest for Lower Edge,Highest for Upper Edge | | | | |
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.8 | 704.534 | 704.00 | 715.441 | 716.00 |
| | -20 | 3.8 | 704.501 | 704.00 | 715.497 | 716.00 |
| | -10 | 3.8 | 704.591 | 704.00 | 715.473 | 716.00 |
| | 0 | 3.8 | 704.532 | 704.00 | 715.410 | 716.00 |
| | 10 | 3.8 | 704.584 | 704.00 | 715.400 | 716.00 |
| | 20 | 3.8 | 704.529 | 704.00 | 715.471 | 716.00 |
| | 30 | 3.8 | 704.593 | 704.00 | 715.427 | 716.00 |
| | 40 | 3.8 | 704.551 | 704.00 | 715.454 | 716.00 |
| | 50 | 3.8 | 704.503 | 704.00 | 715.493 | 716.00 |
| Frequency Stability vs. Voltage | 20 | 3.2 | 704.558 | 704.00 | 715.443 | 716.00 |
| | 20 | 4.4 | 704.560 | 704.00 | 715.436 | 716.00 |
| | | | | | **Result:** | **Pass** |

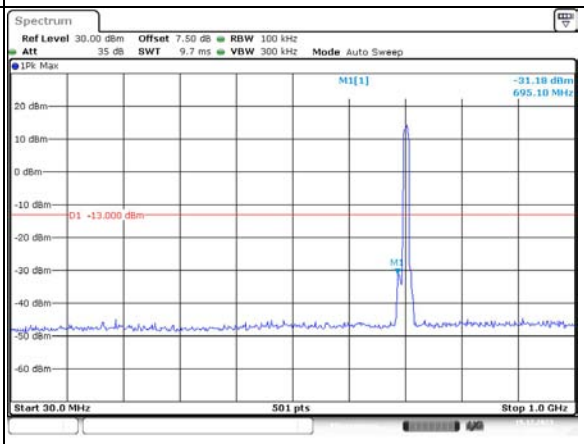
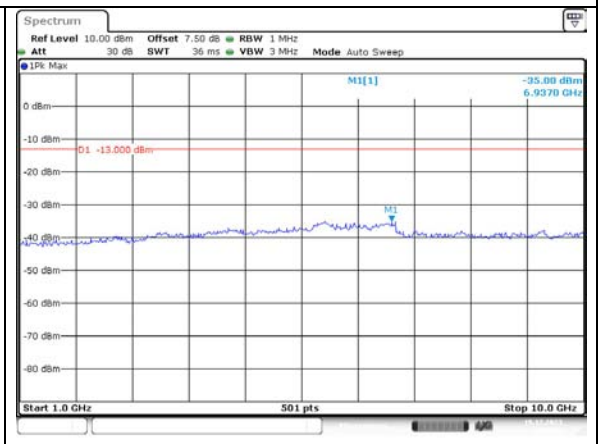
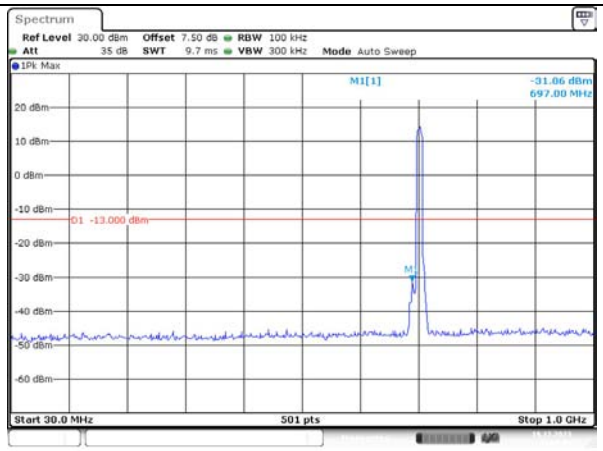
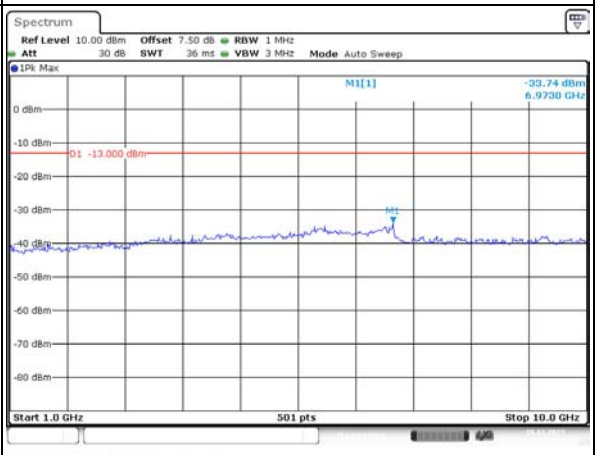
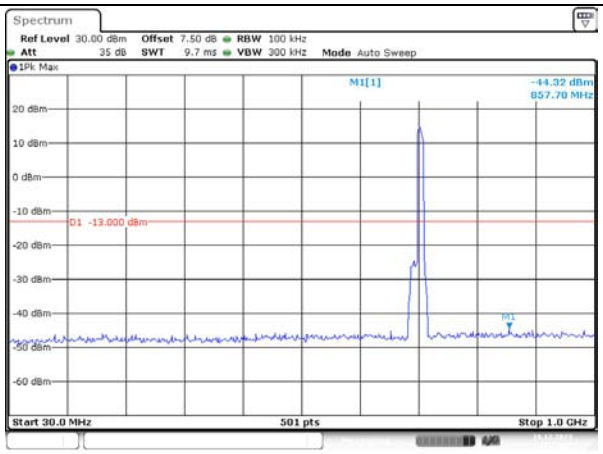
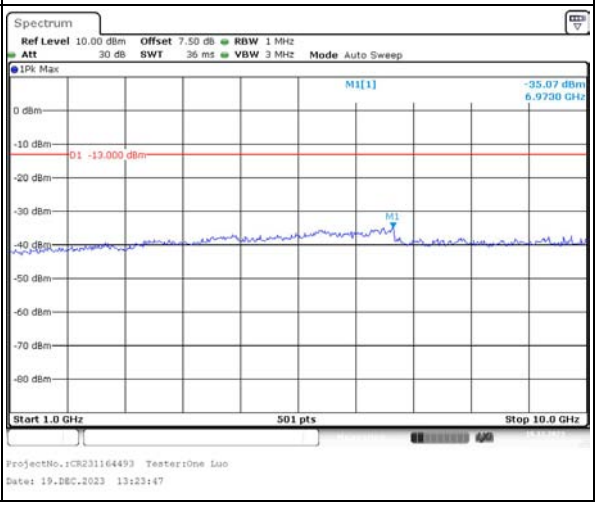
| Test Mode: | 10M 16QAM | Test Channel: Lowest for Lower Edge,Highest for Upper Edge | | | | |
|---|---|---|---|---|---|---|
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.8 | 704.548 | 704.00 | 715.455 | 716.00 |
| | -20 | 3.8 | 704.507 | 704.00 | 715.438 | 716.00 |
| | -10 | 3.8 | 704.503 | 704.00 | 715.411 | 716.00 |
| | 0 | 3.8 | 704.541 | 704.00 | 715.432 | 716.00 |
| | 10 | 3.8 | 704.541 | 704.00 | 715.440 | 716.00 |
| | 20 | 3.8 | 704.529 | 704.00 | 715.471 | 716.00 |
| | 30 | 3.8 | 704.522 | 704.00 | 715.421 | 716.00 |
| | 40 | 3.8 | 704.515 | 704.00 | 715.437 | 716.00 |
| | 50 | 3.8 | 704.520 | 704.00 | 715.470 | 716.00 |
| Frequency Stability vs. Voltage | 20 | 3.2 | 704.580 | 704.00 | 715.442 | 716.00 |
| | 20 | 4.4 | 704.518 | 704.00 | 715.415 | 716.00 |
| | | | | | **Result:** | **Pass** |

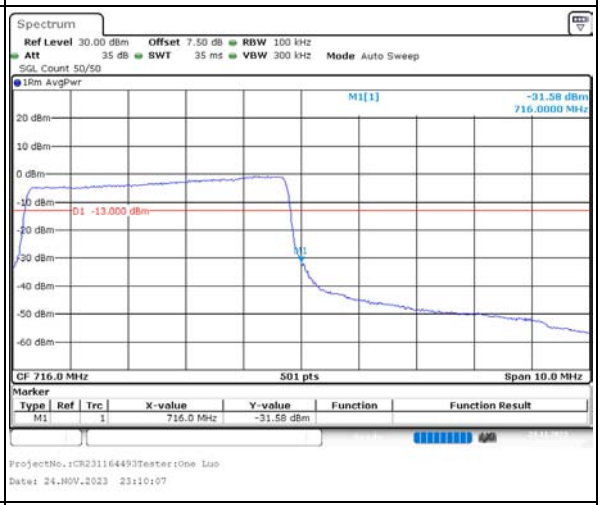
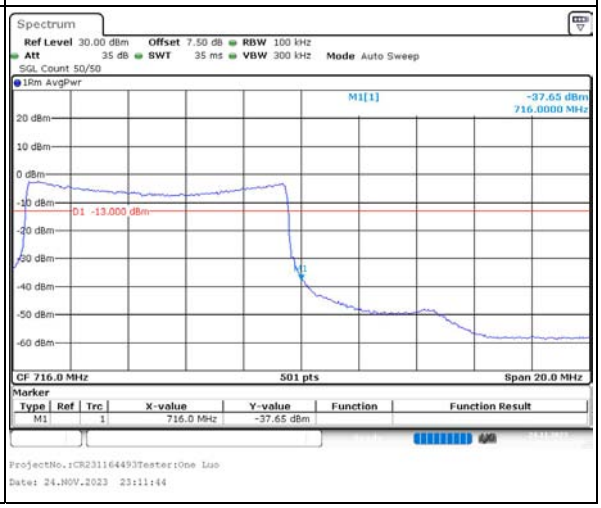
**Test Plots:***(Note: The 7.5dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer.)*

| **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 |  |  |