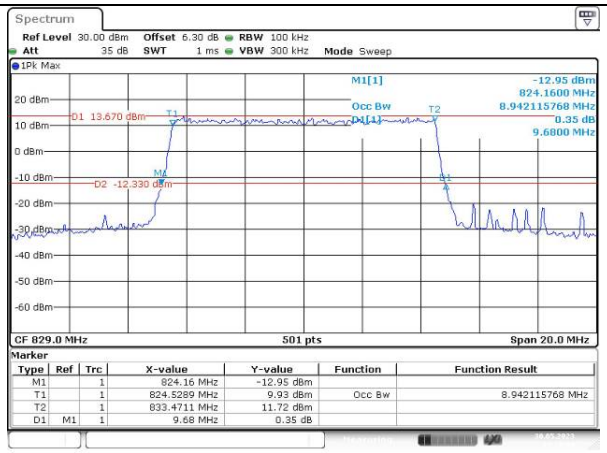
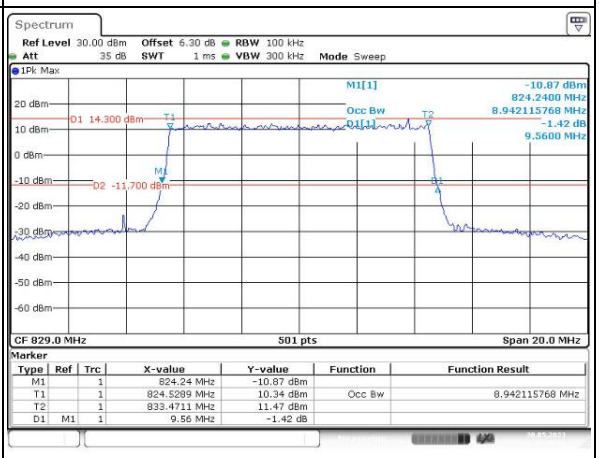
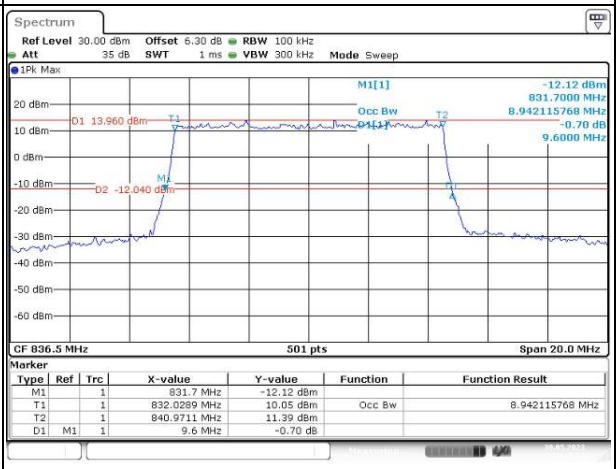
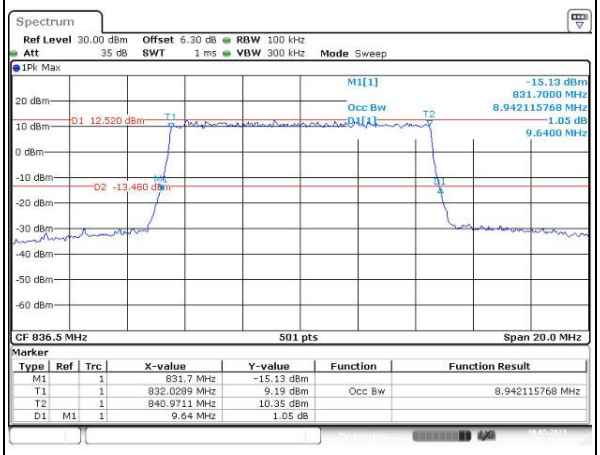
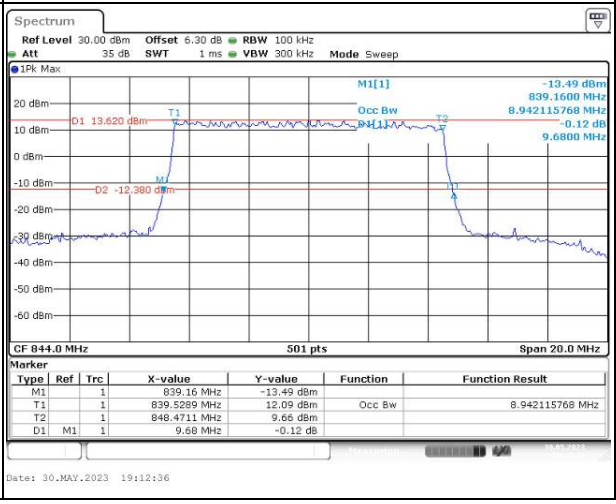
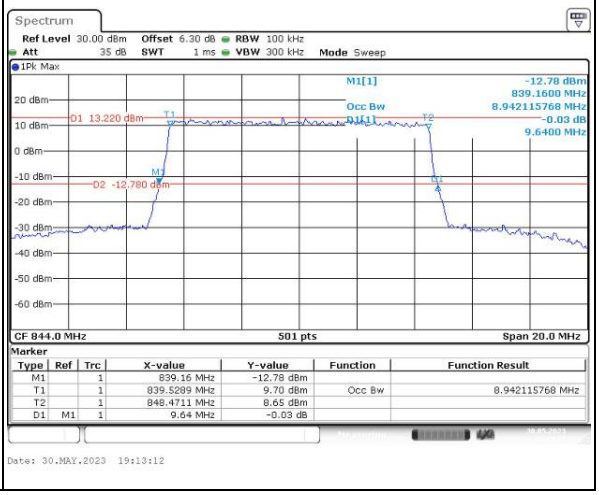
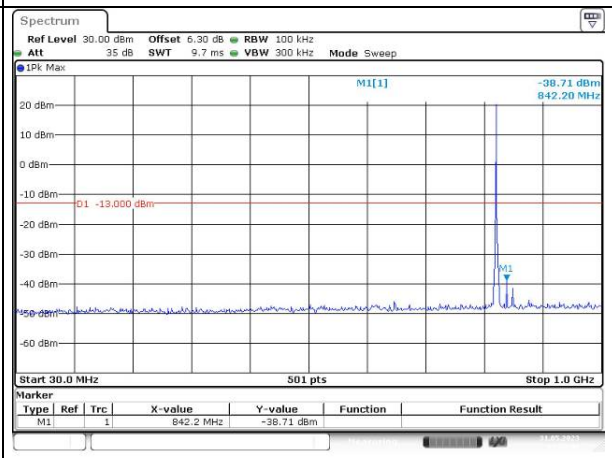
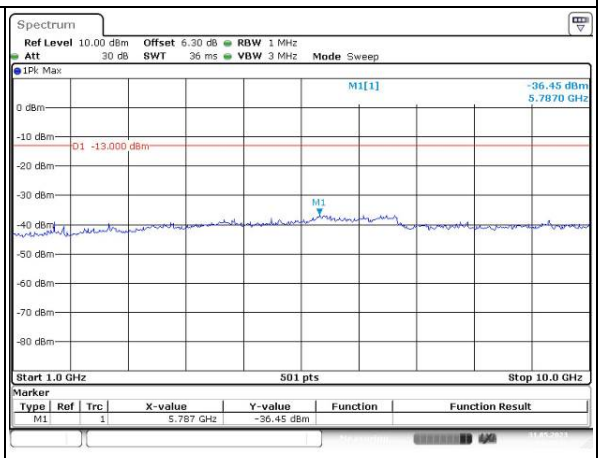
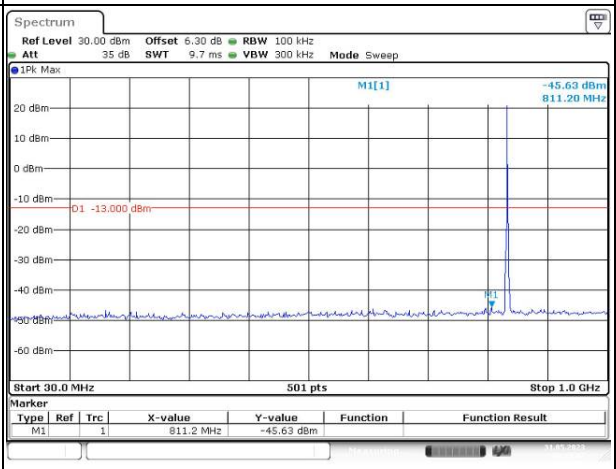
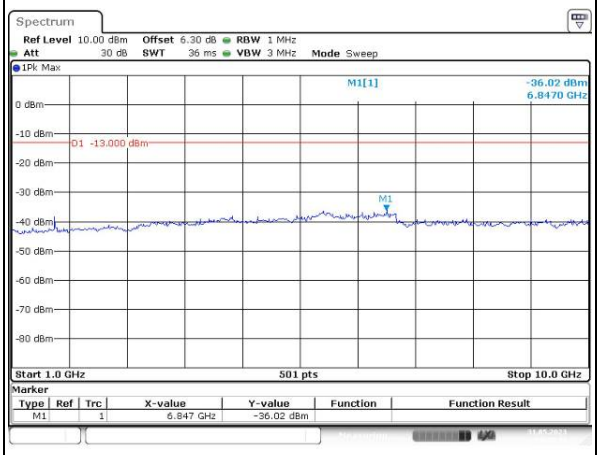
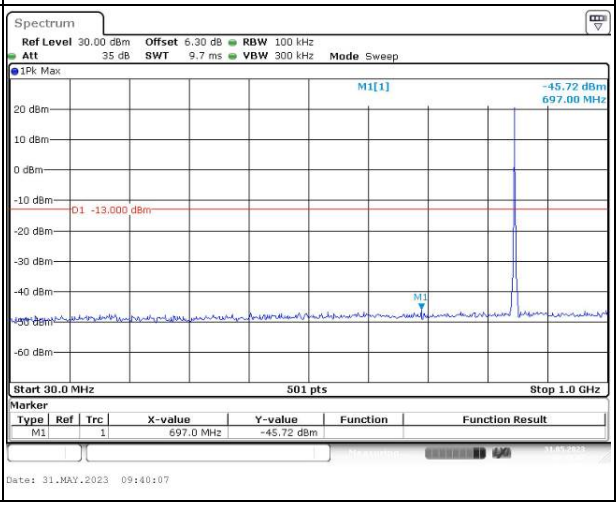
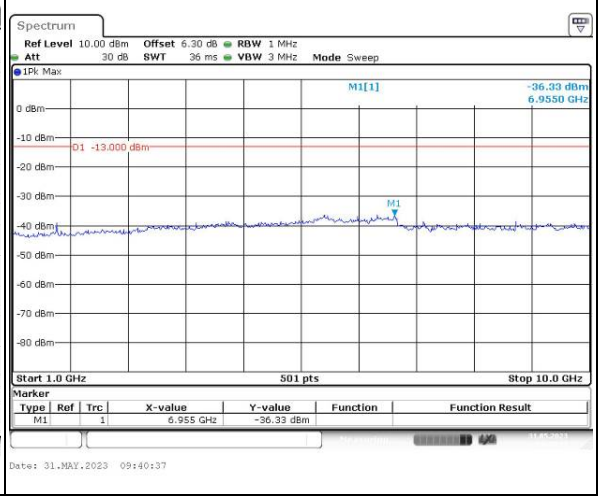
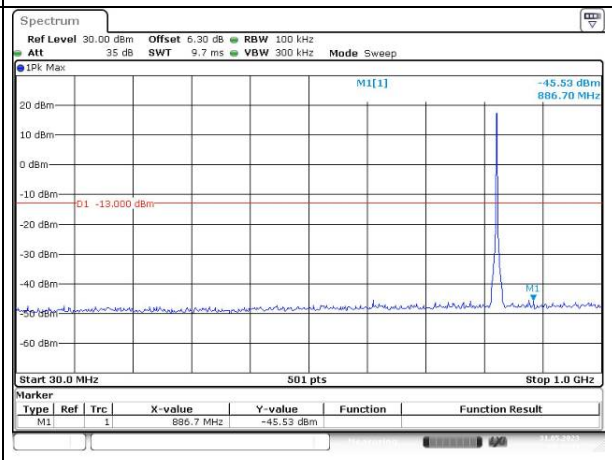
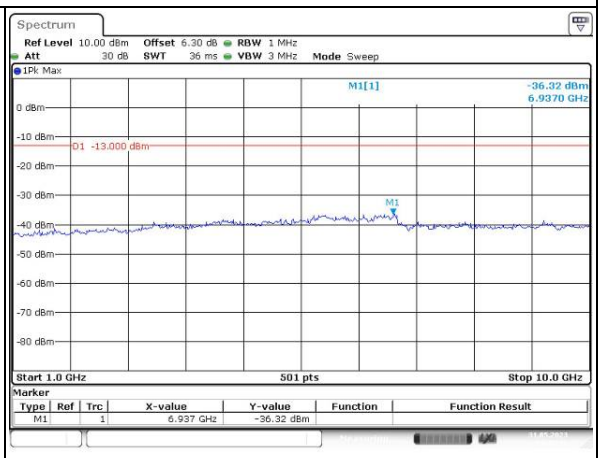
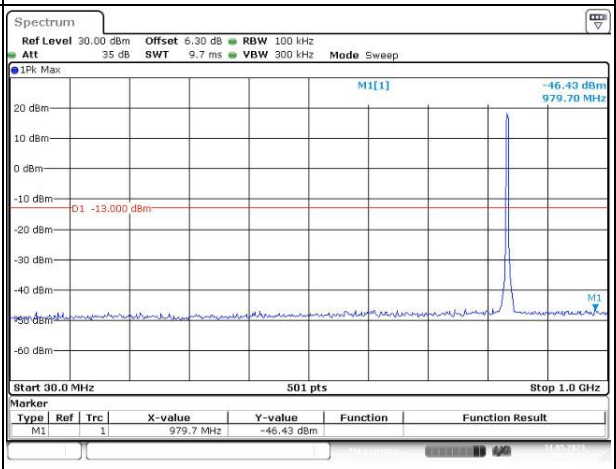
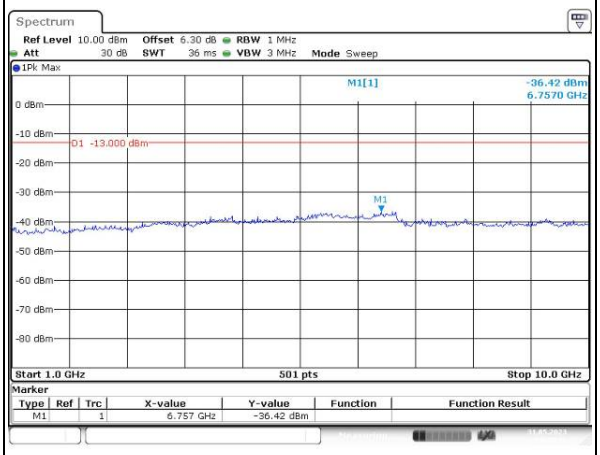
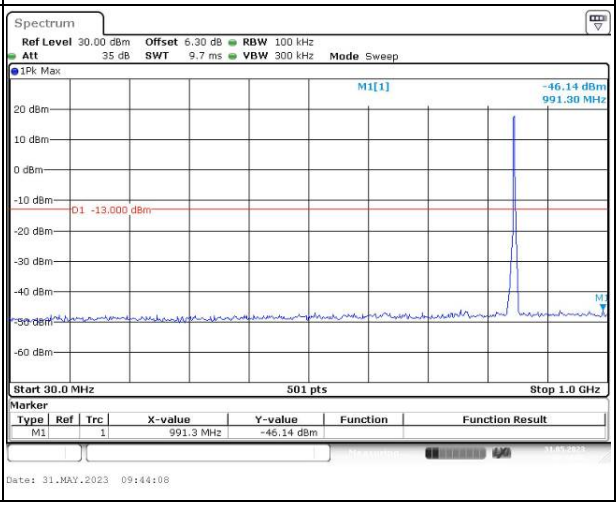
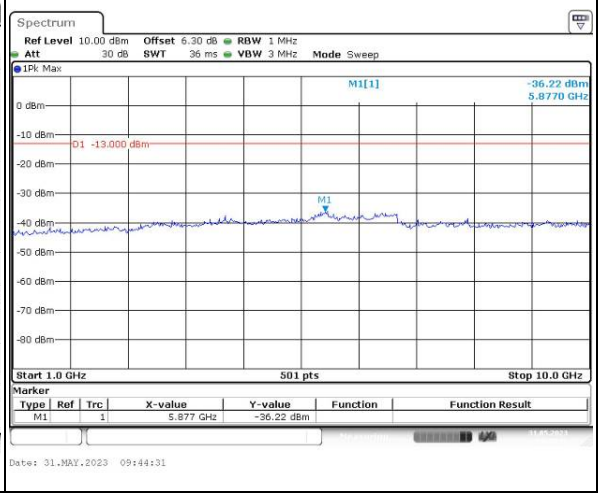
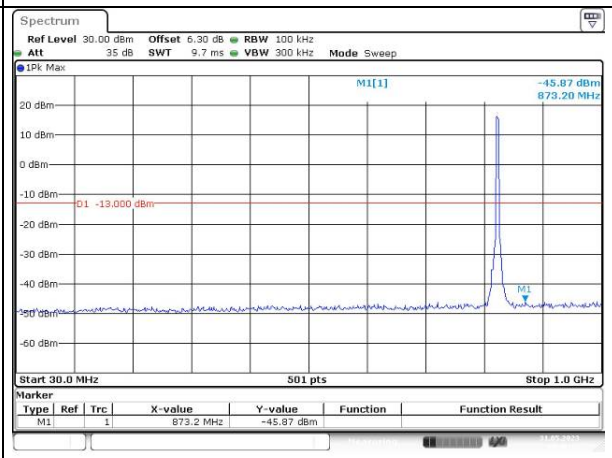
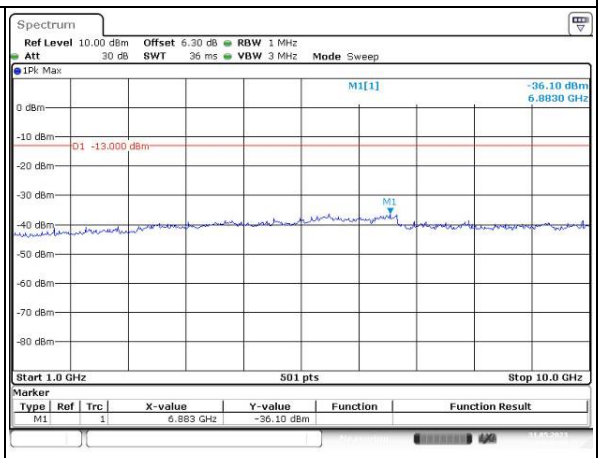
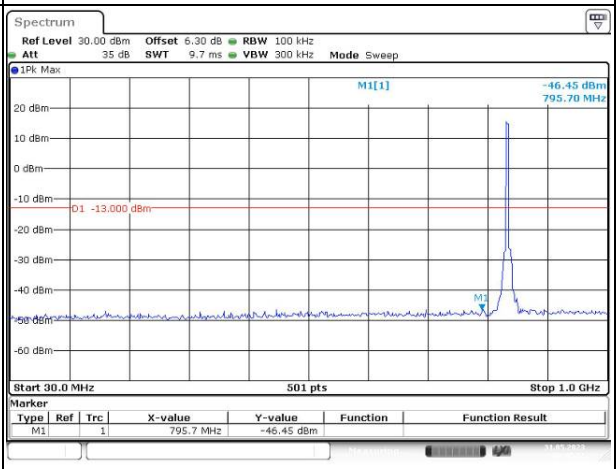
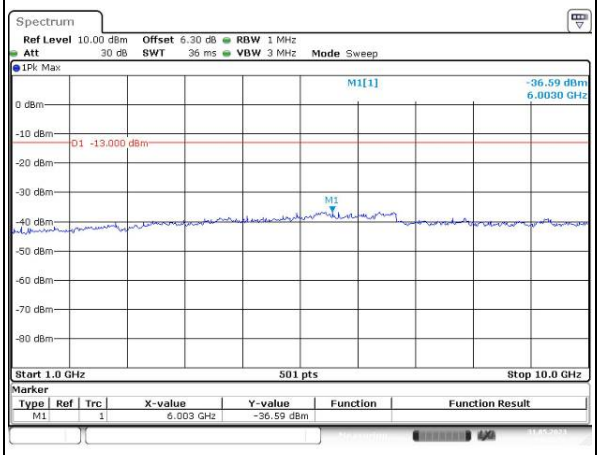
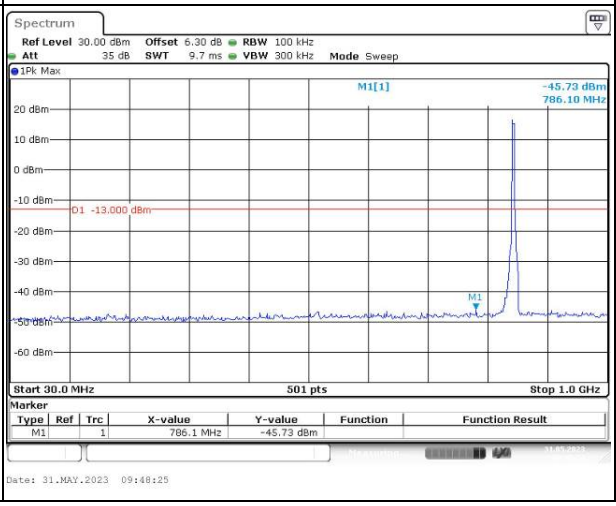
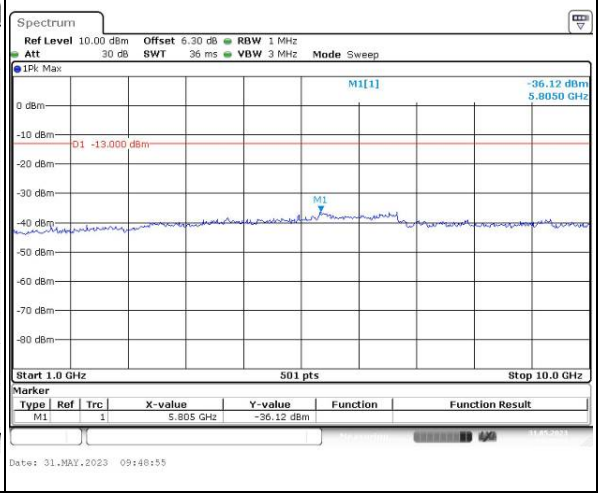
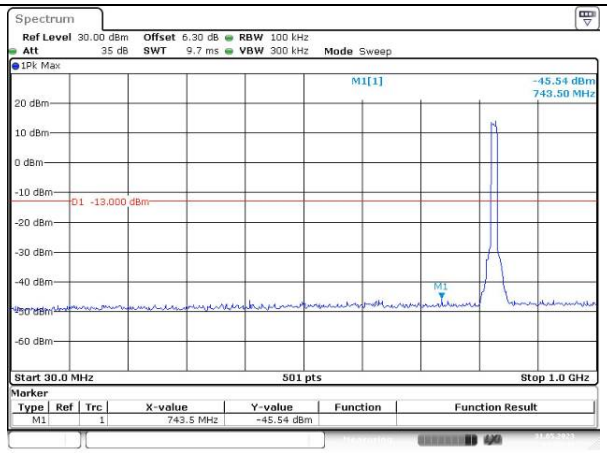
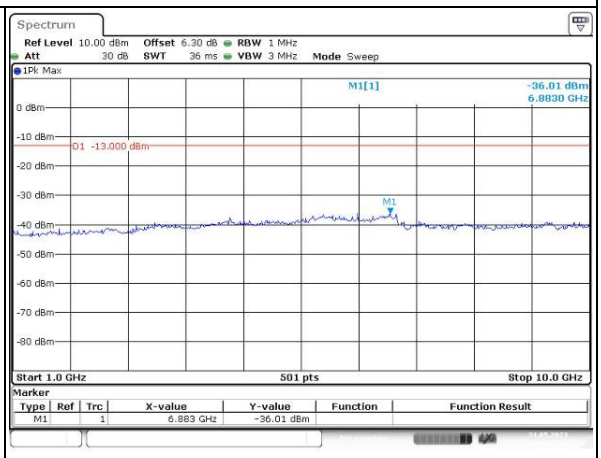
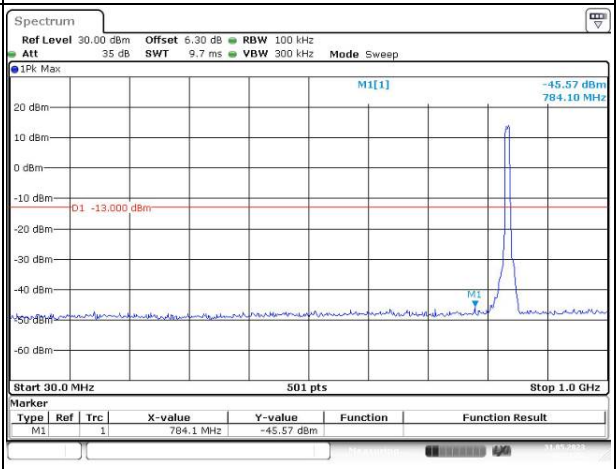
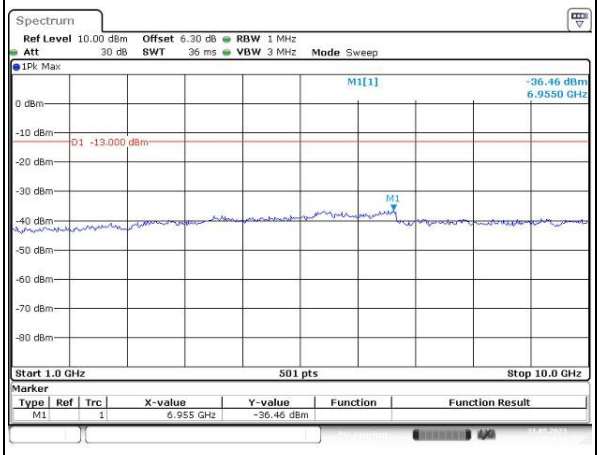
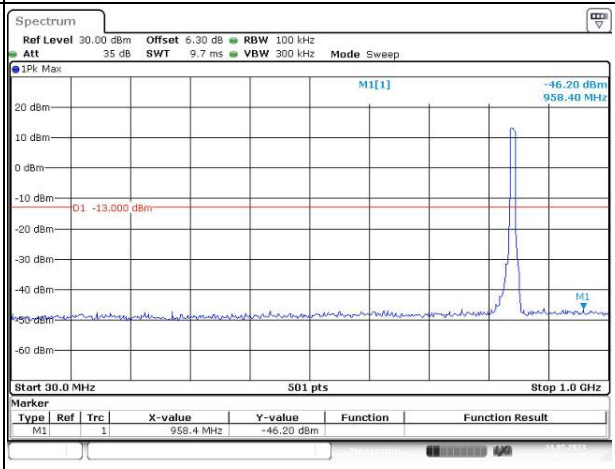
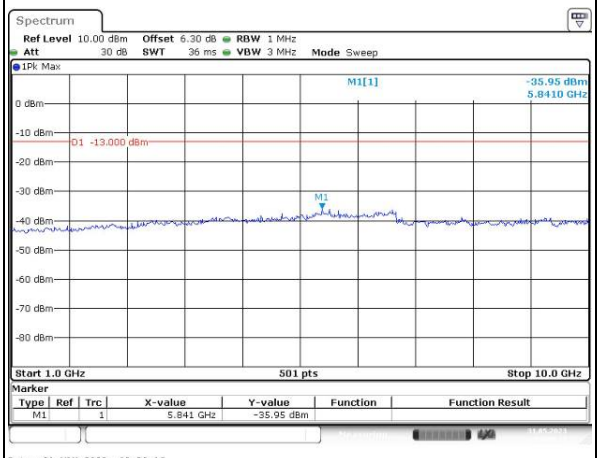
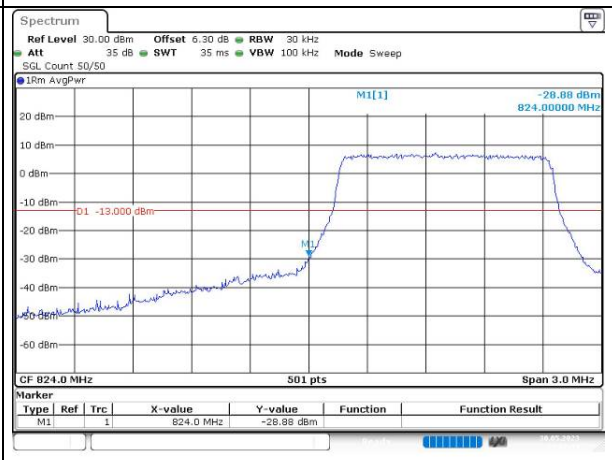
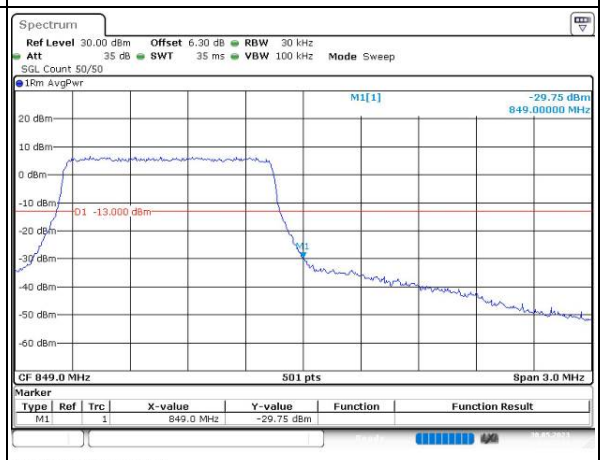
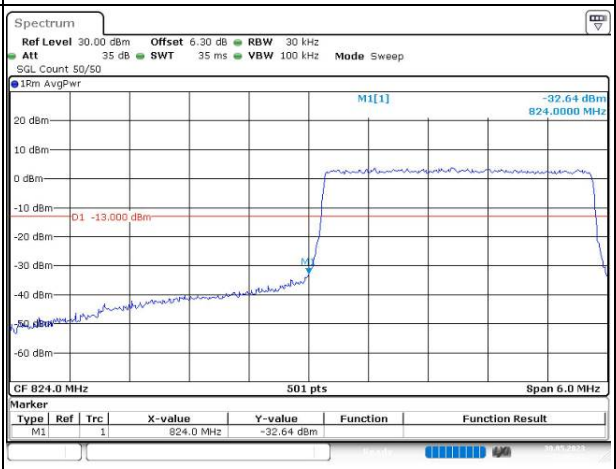
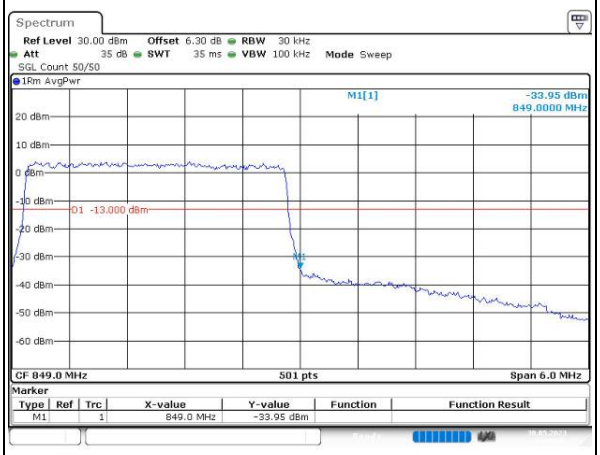
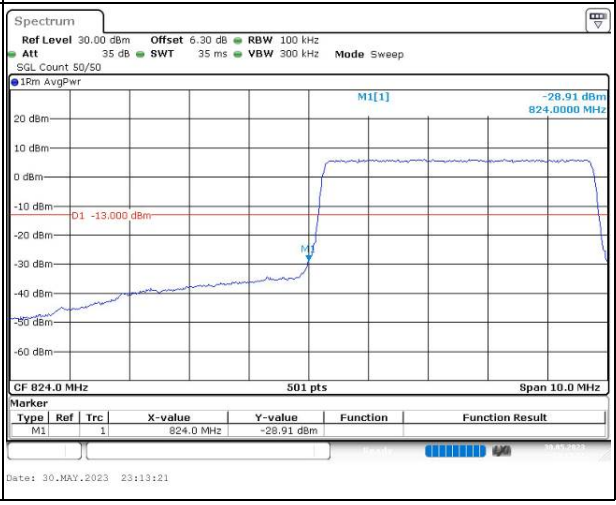
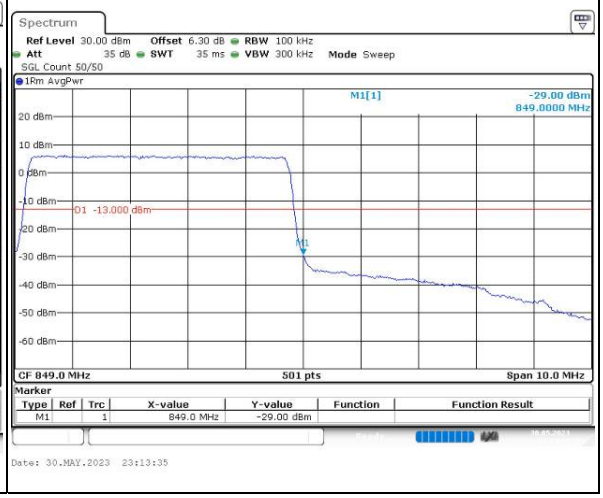
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 10MHz Bandwidth QPSK | 10MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

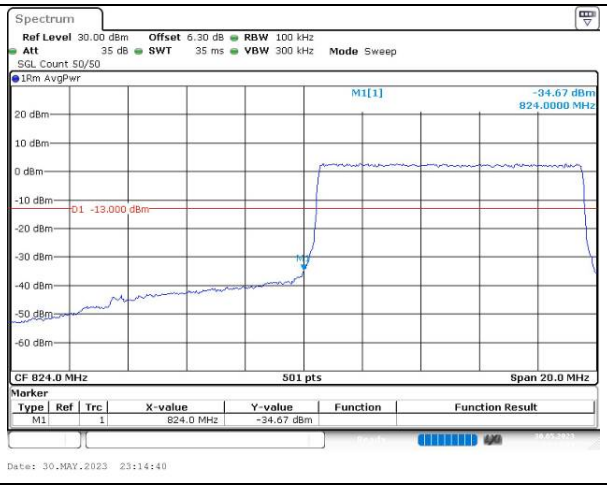
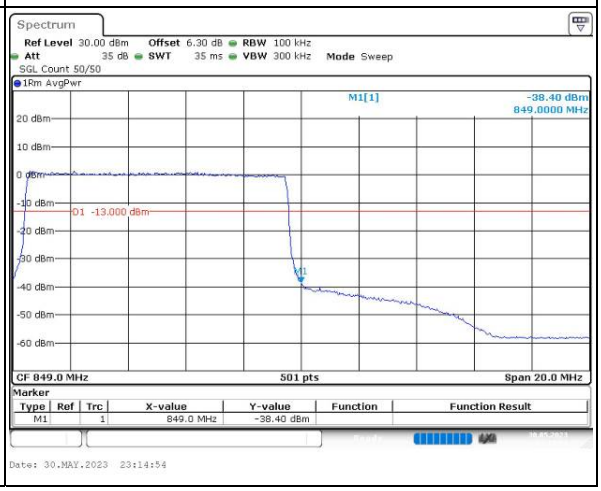
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **1.4MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

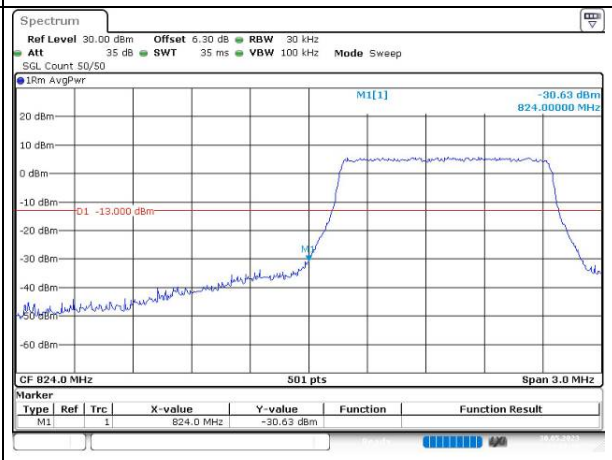
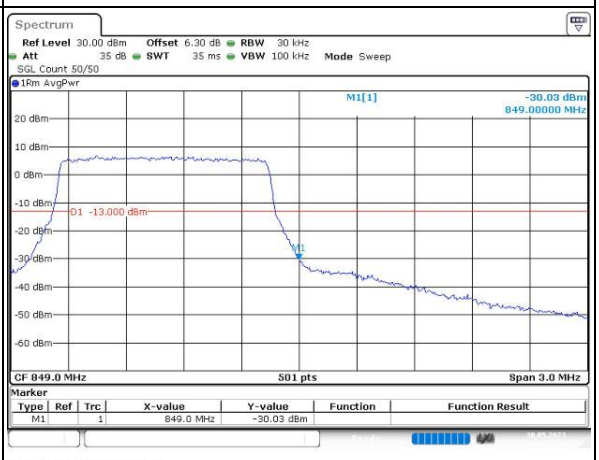
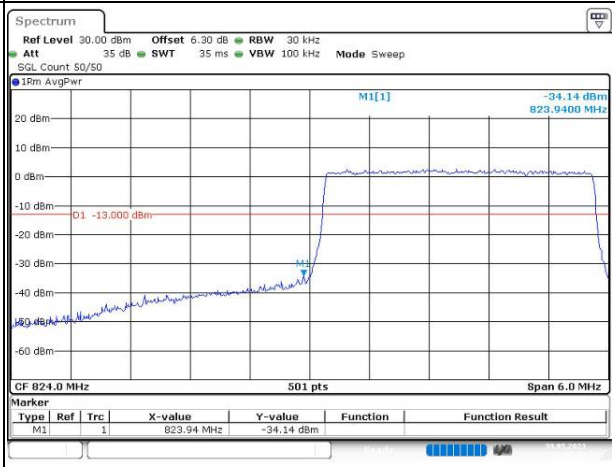
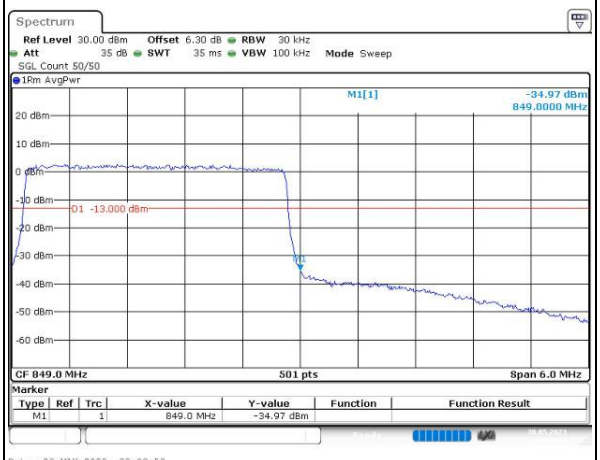
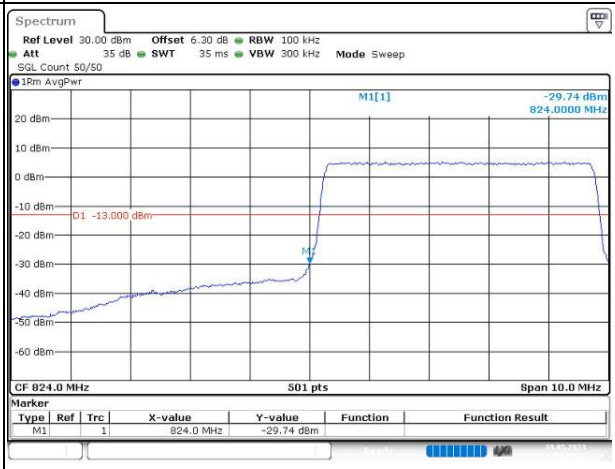
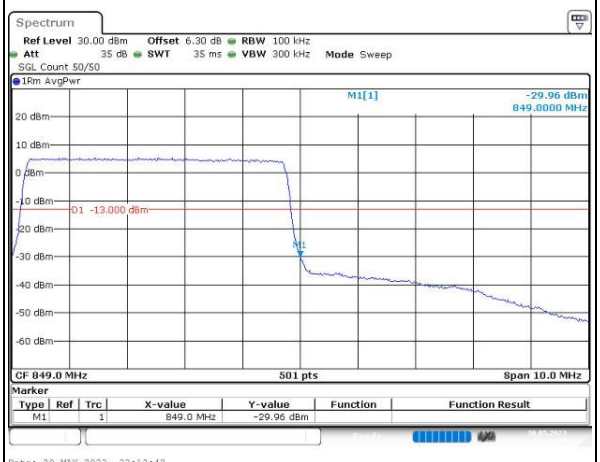
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **3MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

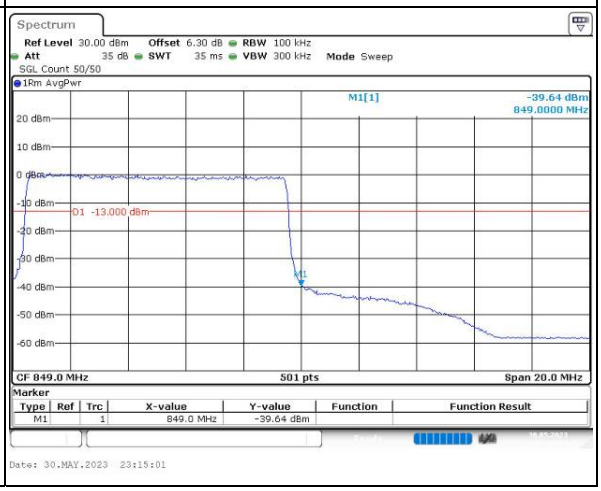
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **5MHz Bandwidth QPSK** | |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

| 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 |  |  |

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

| Serial Number: | 25K9-3 | Test Date: | 2023/05/30~2023/05/31 |
|---|---|---|---|
| Test Site: | RF | Test Mode: | Transmitting |
| Tester: | George Chen | Test Result: | **Pass** |

| **Environmental Conditions:** | | | | | |
|---|---|---|---|---|---|
| Temperature: | 26.7~27.2 | Relative Humidity: | 49~55 | ATM Pressure: | 99.6~100.0 |

**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 |
| Unknown | Coaxial tee connector | Unknown | 2204004 | Each time | N/A |
| R&S | Wideband Radio Communication Tester | CMW500 | 149218 | 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 | 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 | 22.62 | 22.53 | 22.36 | 24.24 | 33 |
| | RB1#13 | 22.73 | 22.69 | 22.52 | | |
| | RB1#24 | 22.62 | 22.52 | 22.4 | | |
| | RB15#0 | 21.74 | 21.61 | 21.5 | | |
| | RB15#10 | 21.78 | 21.63 | 21.45 | | |
| | RB25#0 | 21.69 | 21.61 | 21.41 | | |
| 5MHz 16QAM | RB1#0 | 21.48 | 21.8 | 21.4 | 23.44 | 33 |
| | RB1#13 | 21.62 | 21.93 | 21.52 | | |
| | RB1#24 | 21.49 | 21.8 | 21.43 | | |
| | RB15#0 | 20.75 | 20.62 | 20.56 | | |
| | RB15#10 | 20.82 | 20.63 | 20.5 | | |
| | RB25#0 | 20.76 | 20.63 | 20.51 | | |
| 10MHz QPSK | RB1#0 | 22.71 | 22.59 | 22.54 | 24.35 | 33 |
| | RB1#25 | 22.84 | 22.79 | 22.65 | | |
| | RB1#49 | 22.69 | 22.59 | 22.47 | | |
| | RB25#0 | 21.7 | 21.62 | 21.53 | | |
| | RB25#25 | 21.83 | 21.69 | 21.46 | | |
| | RB50#0 | 21.74 | 21.68 | 21.49 | | |
| 10MHz 16QAM | RB1#0 | 21.84 | 21.57 | 21.94 | 23.56 | 33 |
| | RB1#25 | 21.99 | 21.71 | 22.05 | | |
| | RB1#49 | 21.79 | 21.56 | 21.97 | | |
| | RB25#0 | 20.71 | 20.76 | 20.63 | | |
| | RB25#25 | 20.79 | 20.8 | 20.55 | | |
| | RB50#0 | 20.75 | 20.7 | 20.53 | | |
| 15MHz QPSK | RB1#0 | 22.57 | 22.51 | 22.4 | 24.19 | 33 |
| | RB1#38 | 22.68 | 22.62 | 22.5 | | |
| | RB1#74 | 22.52 | 22.42 | 22.35 | | |
| | RB36#0 | 21.79 | 21.7 | 21.64 | | |
| | RB36#39 | 21.84 | 21.72 | 21.55 | | |
| | RB75#0 | 21.78 | 21.71 | 21.56 | | |
| 15MHz 16QAM | RB1#0 | 21.73 | 21.79 | 21.85 | 23.49 | 33 |
| | RB1#38 | 21.79 | 21.98 | 21.89 | | |
| | RB1#74 | 21.65 | 21.82 | 21.82 | | |
| | RB36#0 | 20.7 | 20.59 | 20.59 | | |
| | RB36#39 | 20.81 | 20.63 | 20.51 | | |
| | RB75#0 | 20.74 | 20.67 | 20.6 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 20MHz QPSK | RB1#0 | 22.4 | 22.37 | 22.21 | 24.32 | 33 |
| | RB1#50 | 22.81 | 22.78 | 22.63 | | |
| | RB1#99 | 22.36 | 22.34 | 22.18 | | |
| | RB50#0 | 21.57 | 21.59 | 21.51 | | |
| | RB50#50 | 21.69 | 21.67 | 21.38 | | |
| | RB100#0 | 21.64 | 21.63 | 21.47 | | |
| 20MHz 16QAM | RB1#0 | 21.68 | 21.52 | 21.7 | 23.56 | 33 |
| | RB1#50 | 22.05 | 21.94 | 22.02 | | |
| | RB1#99 | 21.63 | 21.49 | 21.63 | | |
| | RB50#0 | 20.54 | 20.58 | 20.52 | | |
| | RB50#50 | 20.66 | 20.66 | 20.43 | | |
| | RB100#0 | 20.64 | 20.63 | 20.49 | | |
| 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 | 4.2 | 4.46 | 3.77 | 13 |
| | RB100#0 | 4.72 | 5.01 | 4.72 | 13 |
| 20MHz 16QAM | RB1#0 | 5.04 | 5.45 | 4.64 | 13 |
| | RB100#0 | 5.68 | 5.97 | 5.68 | 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 | 4.491 | 4.531 | 4.511 | 4.92 | 4.94 | 4.94 |
| 5MHz 16QAM | 4.511 | 4.491 | 4.511 | 4.96 | 4.94 | 4.96 |
| 10MHz QPSK | 8.982 | 8.942 | 8.942 | 9.64 | 9.64 | 9.6 |
| 10MHz 16QAM | 8.942 | 8.942 | 8.942 | 9.64 | 9.68 | 9.8 |
| 15MHz QPSK | 13.473 | 13.473 | 13.533 | 14.7 | 14.88 | 14.82 |
| 15MHz 16QAM | 13.473 | 13.533 | 13.533 | 14.7 | 14.76 | 14.7 |
| 20MHz QPSK | 17.964 | 17.964 | 17.964 | 19.28 | 19.28 | 19.44 |
| 20MHz 16QAM | 18.044 | 17.964 | 17.964 | 19.36 | 19.44 | 19.36 |
| 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.** |

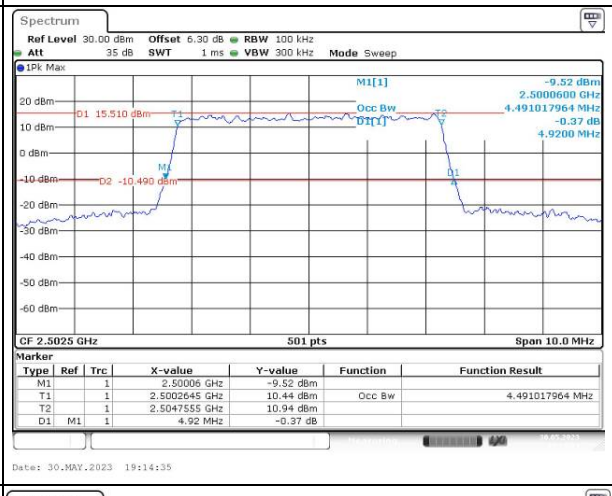
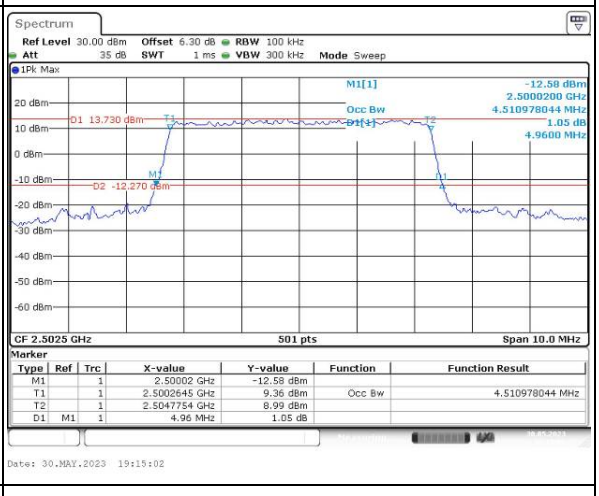
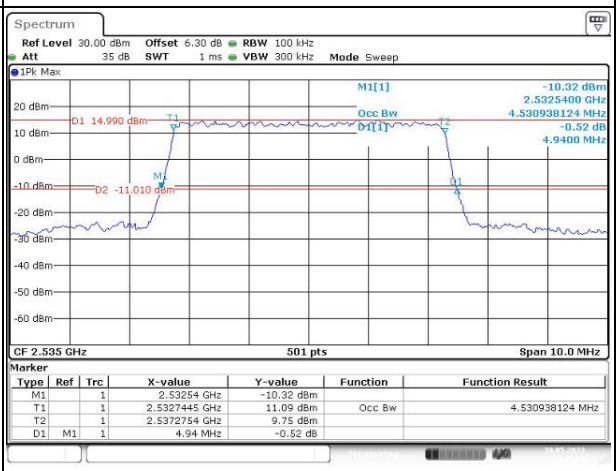
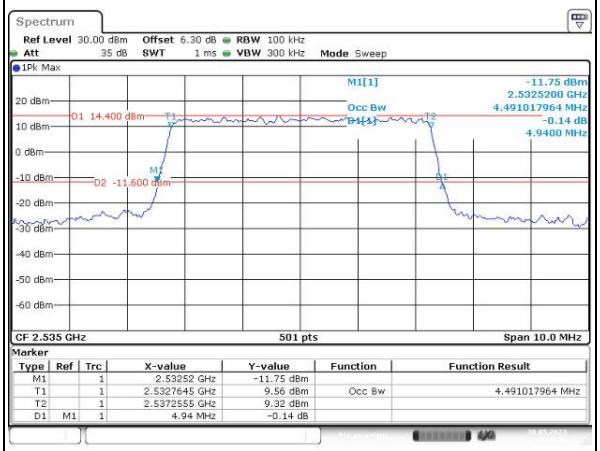
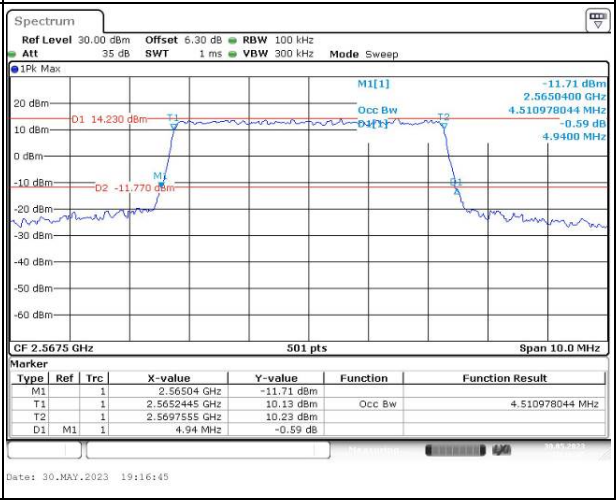
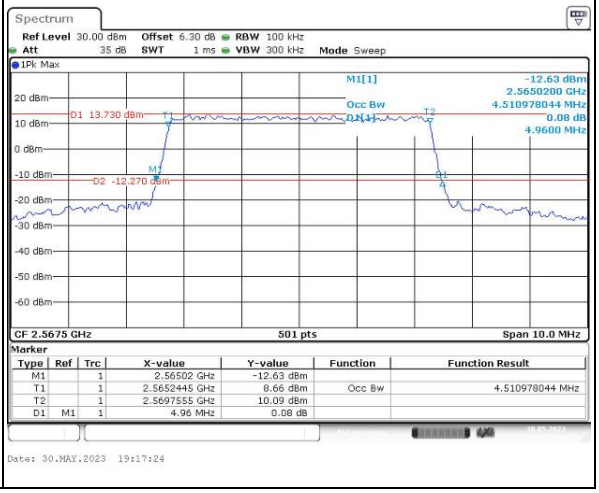
| Out of band emission, Band Edge | |
|---|---|
| **Result:** | **Pass, Please refer to the test plots of Out of band emission, Band Edge.** |

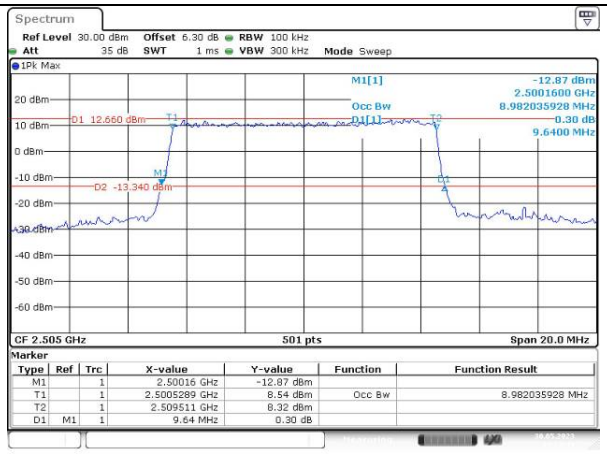
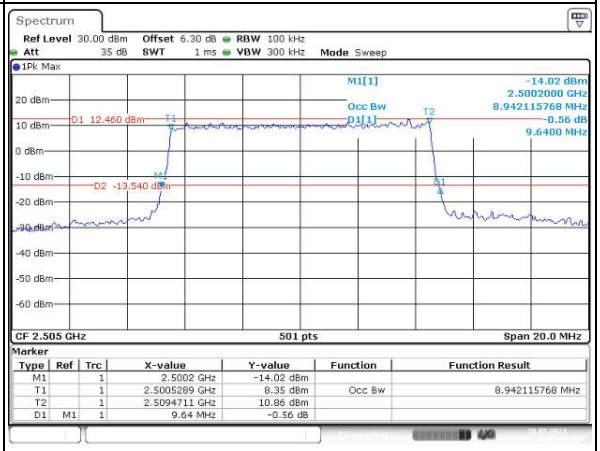
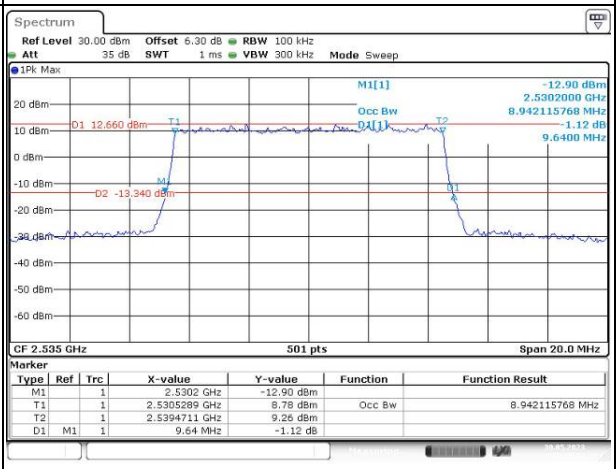
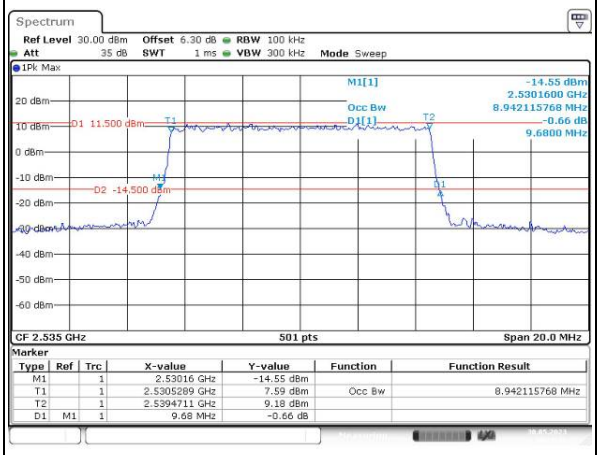
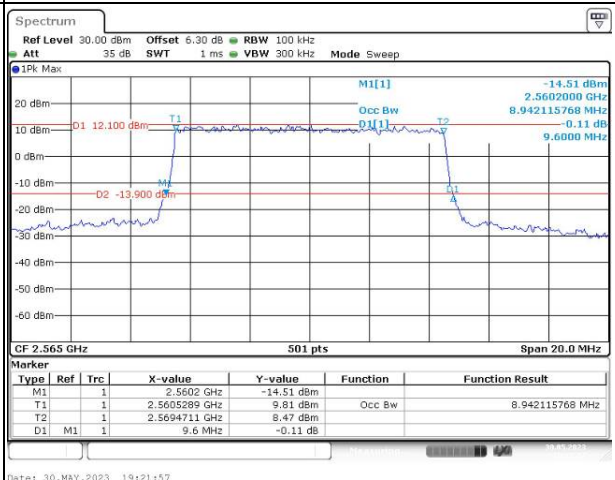
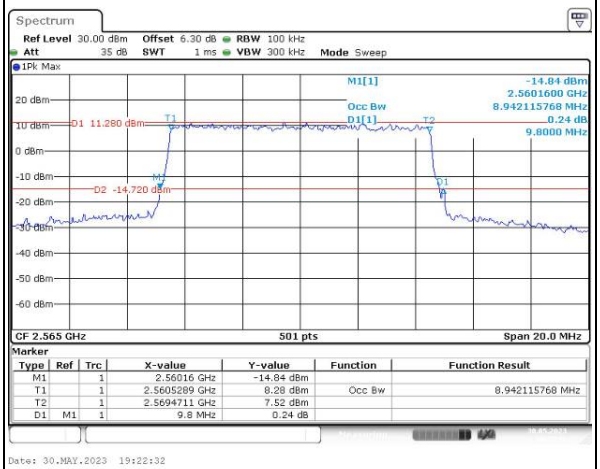
**Frequency Stability**

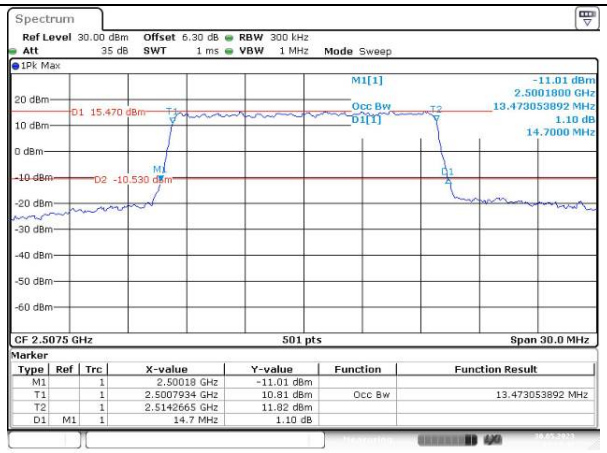
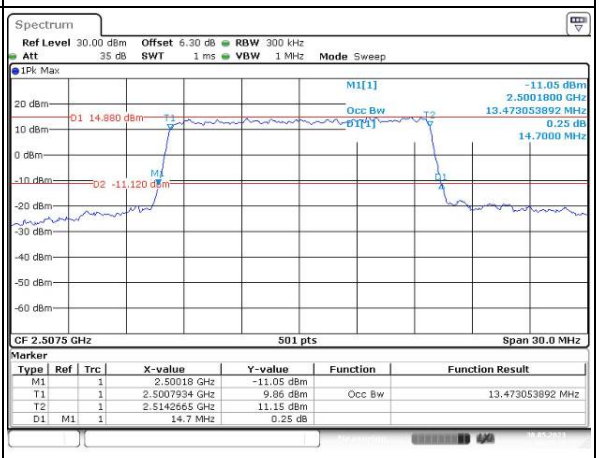
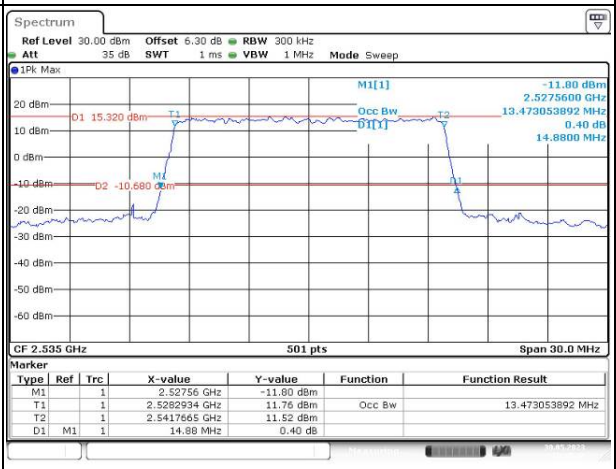
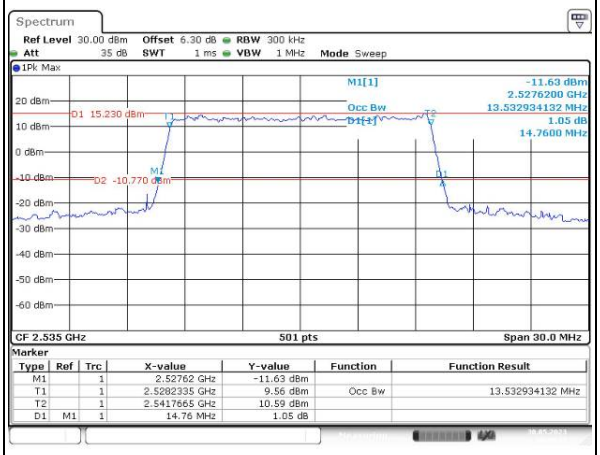
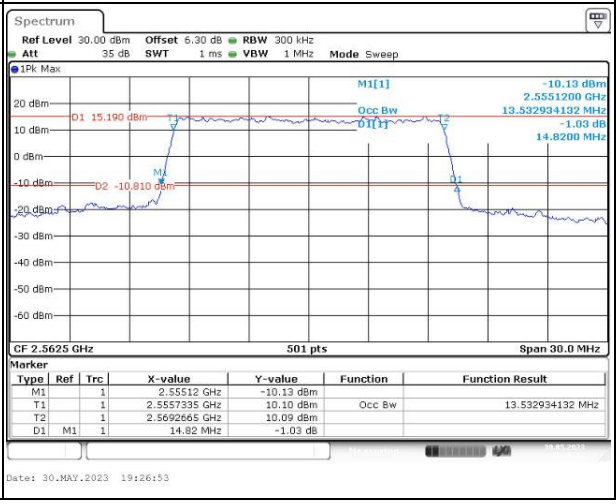
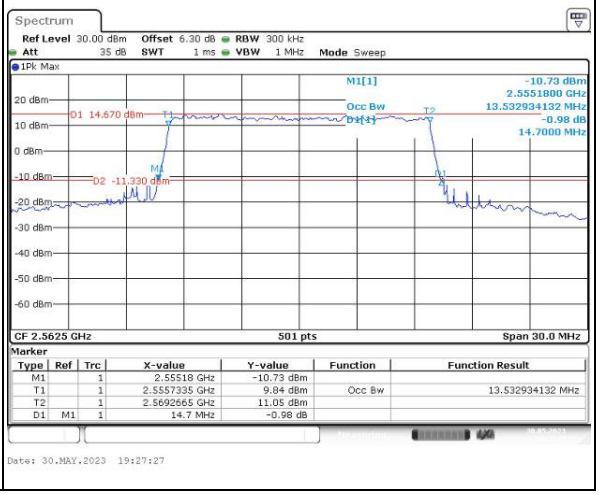
| Test Mode: | 20M QPSK | Test Channel: Lowest for Lower Edge,Highest for Upper Edge | | | | |
|---|---|---|---|---|---|---|
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.87 | 2501.078 | 2500.00 | 2569.098 | 2570 |
| | -20 | 3.87 | 2501.046 | 2500.00 | 2569.088 | 2570 |
| | -10 | 3.87 | 2501.060 | 2500.00 | 2569.040 | 2570 |
| | 0 | 3.87 | 2501.057 | 2500.00 | 2569.095 | 2570 |
| | 10 | 3.87 | 2501.043 | 2500.00 | 2569.042 | 2570 |
| | 20 | 3.87 | 2501.058 | 2500.00 | 2569.022 | 2570 |
| | 30 | 3.87 | 2501.011 | 2500.00 | 2569.013 | 2570 |
| | 40 | 3.87 | 2501.068 | 2500.00 | 2569.063 | 2570 |
| | 50 | 3.87 | 2501.080 | 2500.00 | 2569.005 | 2570 |
| Frequency Stability vs. Voltage | 20 | 3.47 | 2501.057 | 2500.00 | 2569.033 | 2570 |
| | 20 | 4.45 | 2501.006 | 2500.00 | 2569.092 | 2570 |
| | | | | | **Result:** | **Pass** |

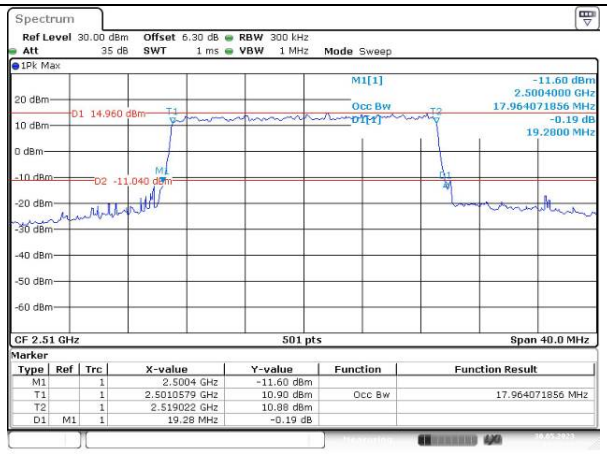
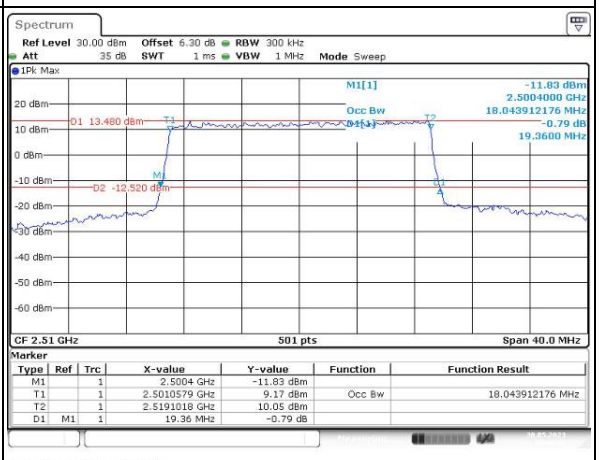
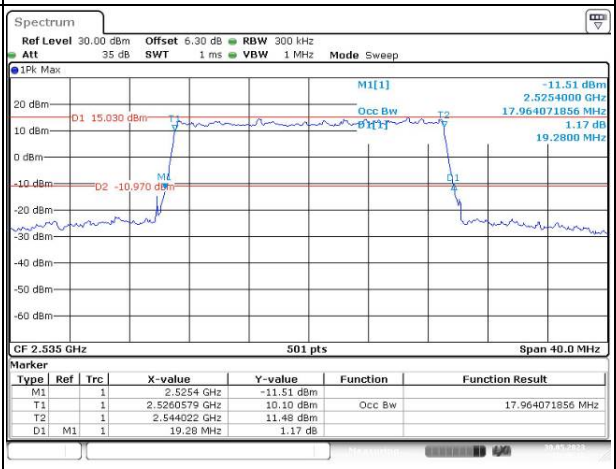
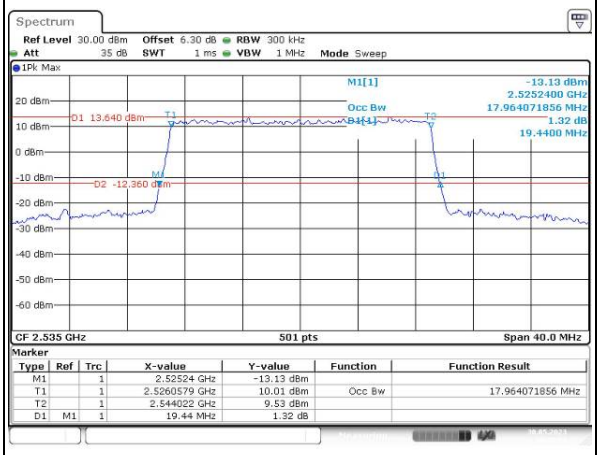
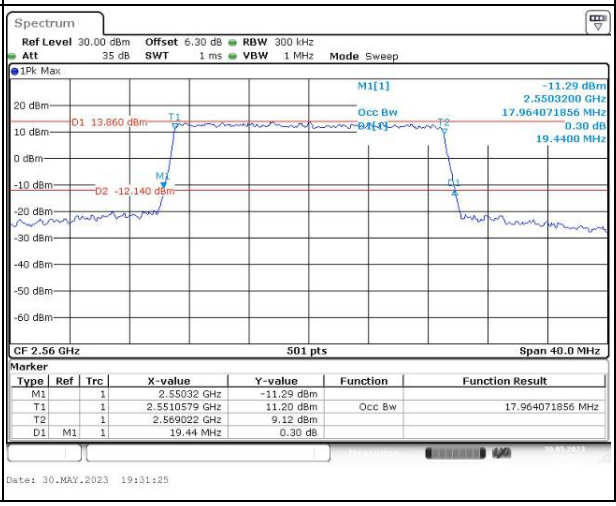
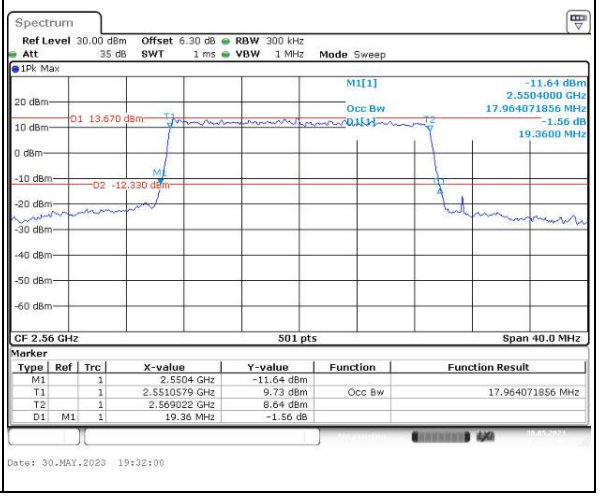
| Test Mode: | 20M 16QAM | Test Channel: Lowest for Lower Edge,Highest for Upper Edge | | | | |
|---|---|---|---|---|---|---|
| Test Item | Temperature (℃) | Voltage ($V_{DC}$) | Lower Edge (MHz) | | Upper Edge (MHz) | |
| | | | Result | Limit | Result | Limit |
| Frequency Stability vs. Temperature | -30 | 3.87 | 2501.001 | 2500.00 | 2569.072 | 2570 |
| | -20 | 3.87 | 2501.028 | 2500.00 | 2569.065 | 2570 |
| | -10 | 3.87 | 2501.029 | 2500.00 | 2569.095 | 2570 |
| | 0 | 3.87 | 2501.085 | 2500.00 | 2569.054 | 2570 |
| | 10 | 3.87 | 2501.065 | 2500.00 | 2569.047 | 2570 |
| | 20 | 3.87 | 2501.058 | 2500.00 | 2569.022 | 2570 |
| | 30 | 3.87 | 2501.026 | 2500.00 | 2569.085 | 2570 |
| | 40 | 3.87 | 2501.093 | 2500.00 | 2569.038 | 2570 |
| | 50 | 3.87 | 2501.035 | 2500.00 | 2569.056 | 2570 |
| Frequency Stability vs. Voltage | 20 | 3.47 | 2501.084 | 2500.00 | 2569.008 | 2570 |
| | 20 | 4.45 | 2501.087 | 2500.00 | 2569.007 | 2570 |
| | | | | | **Result:** | **Pass** |

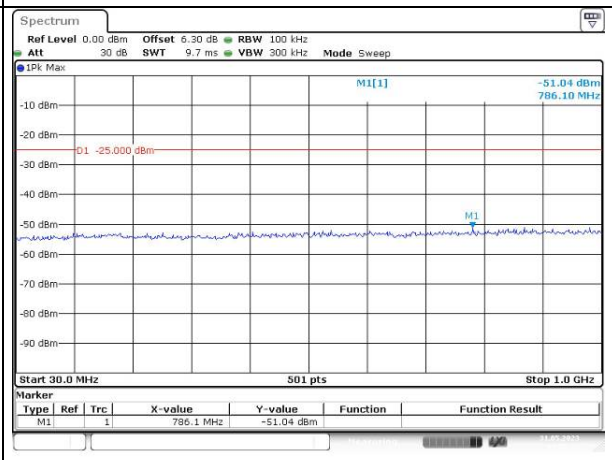
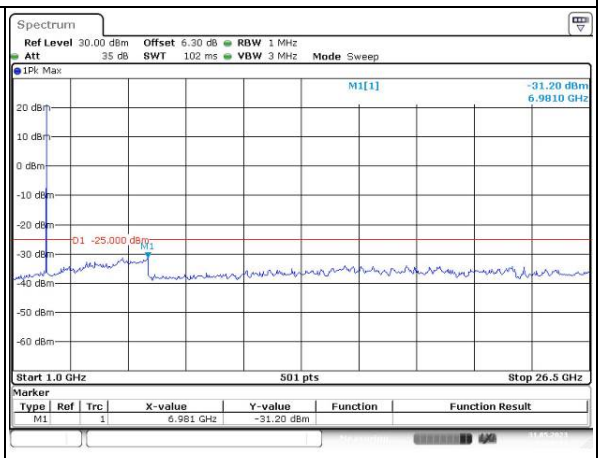
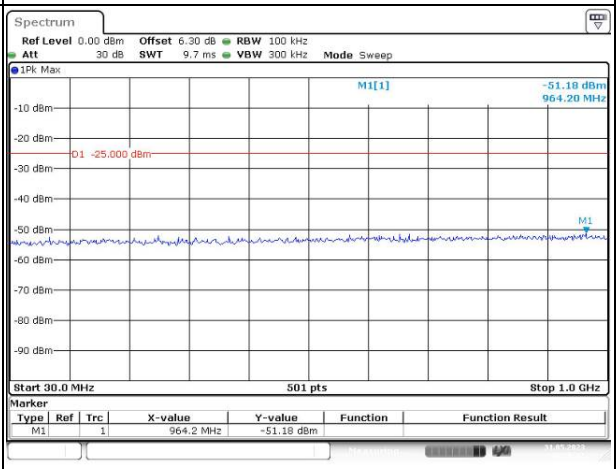
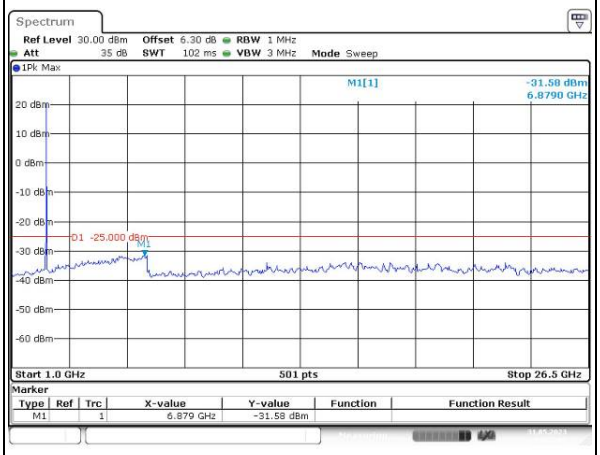
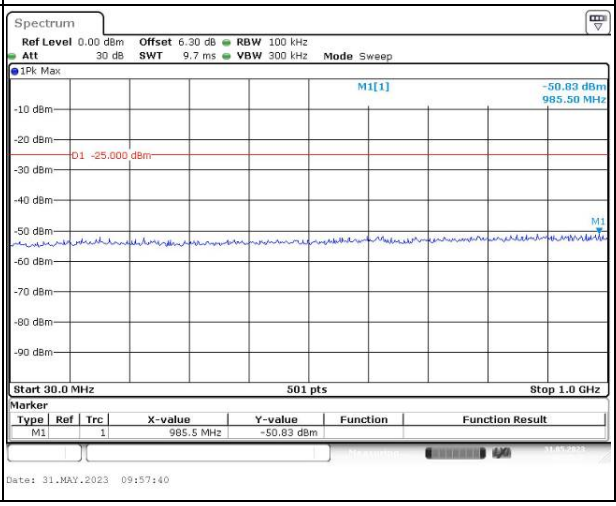
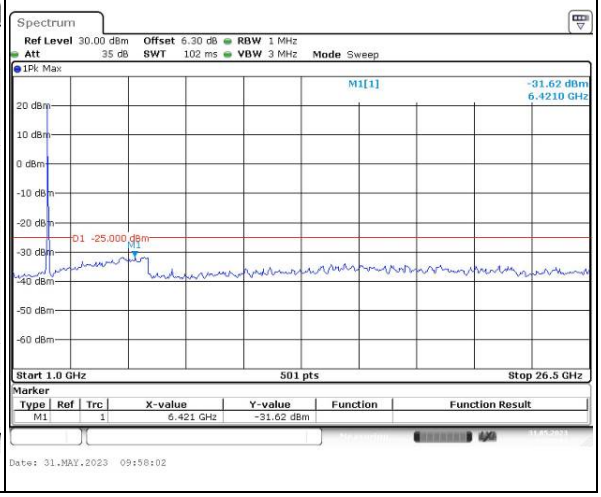
**Test Plots**(Note: The 6.3dB is the Insertion loss of the RF cable, Coaxial tee connector and DC Block, which was offset into the Spectrum Analyzer)**:**

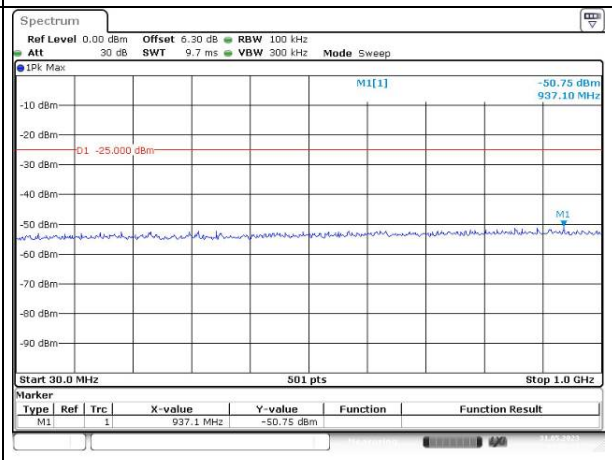
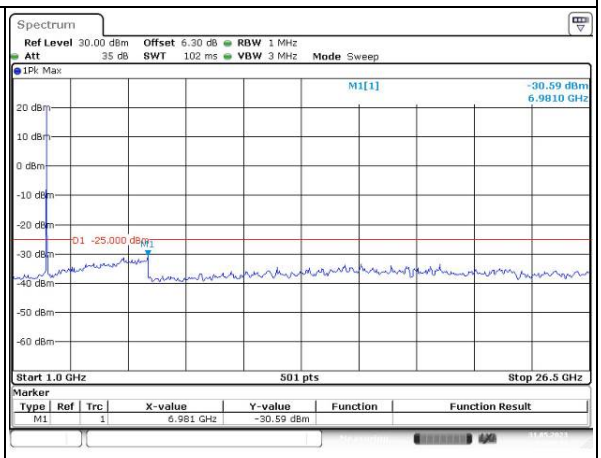
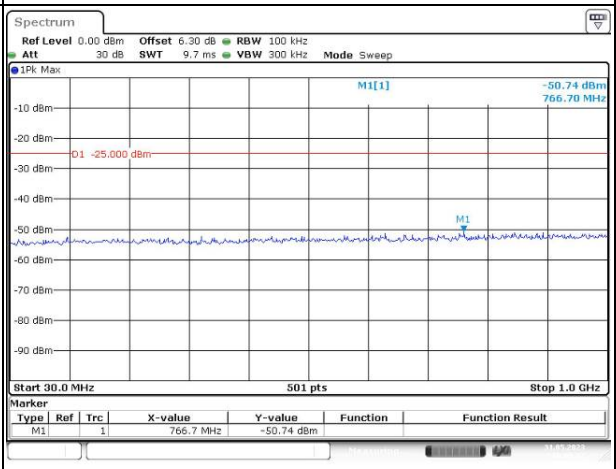
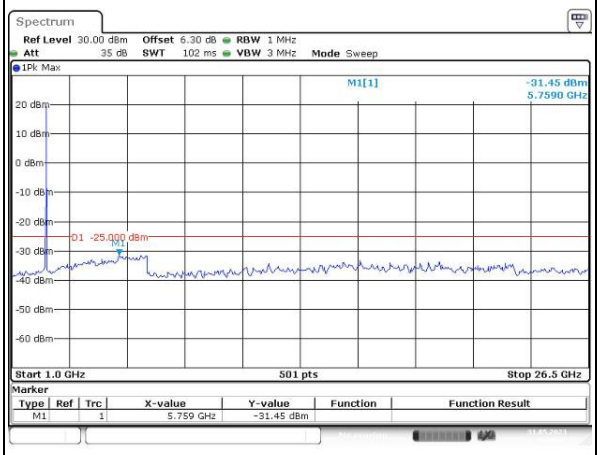
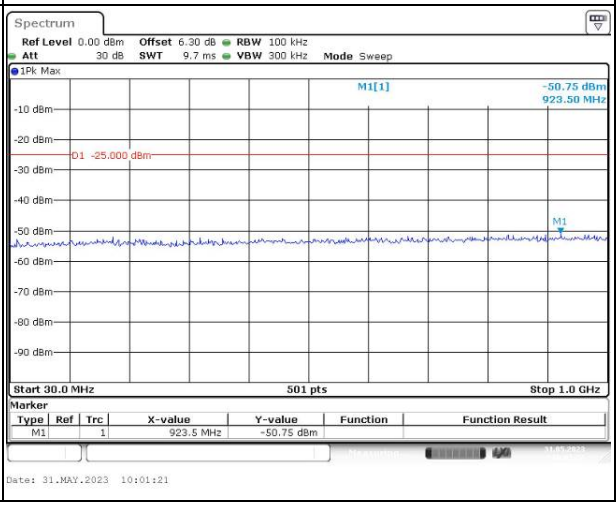
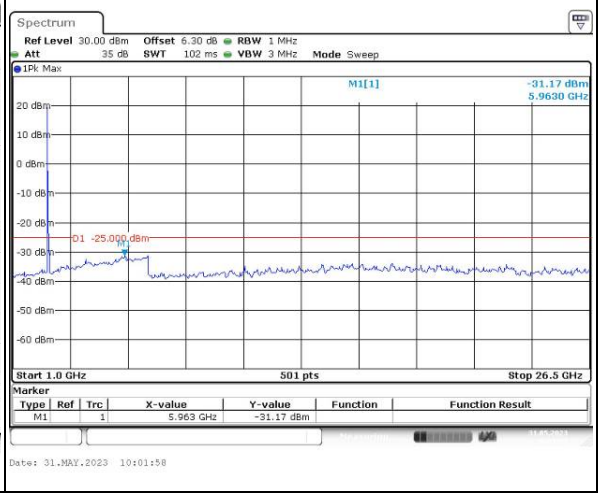
| **Occupied Bandwidth** | | |
|---|---|---|
| **Channel** | 5MHz Bandwidth QPSK | 5MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

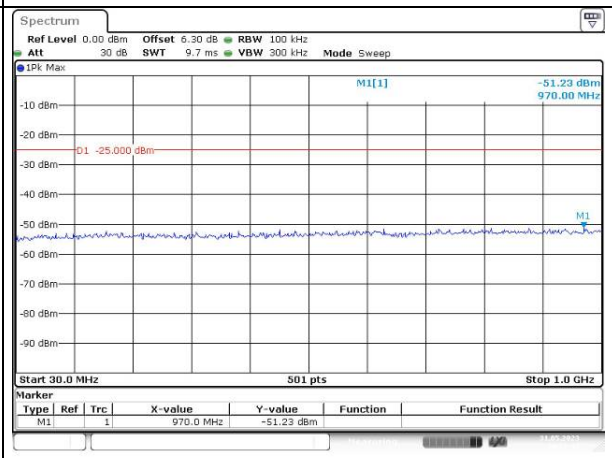
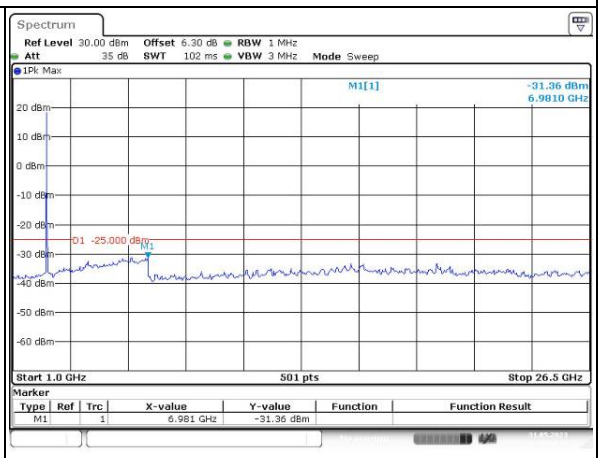
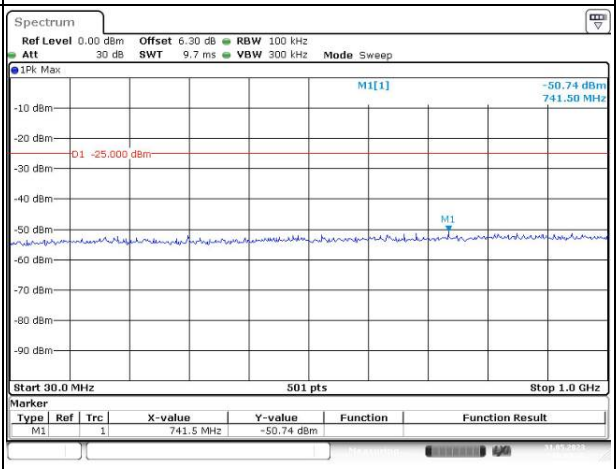
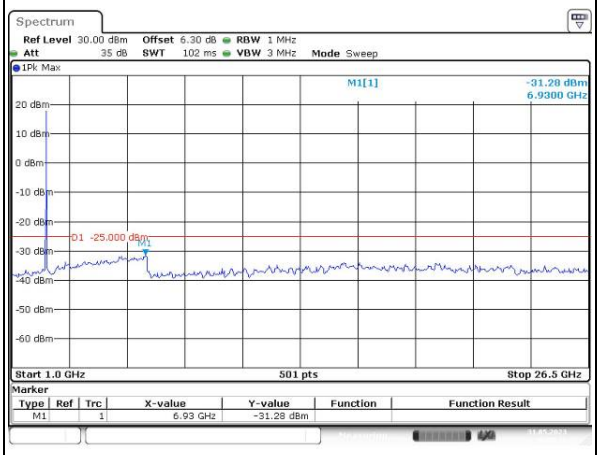
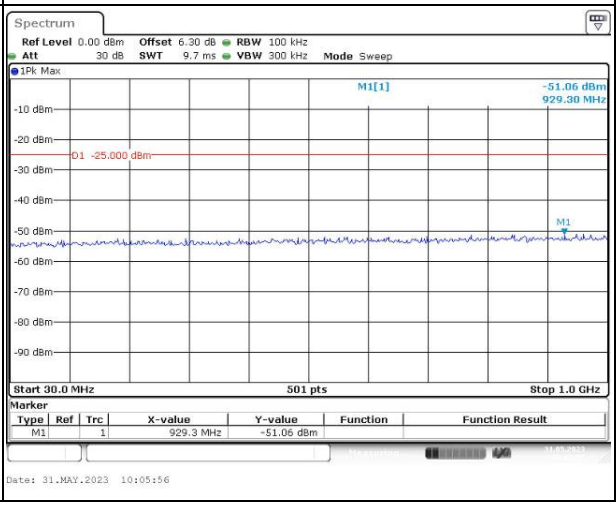
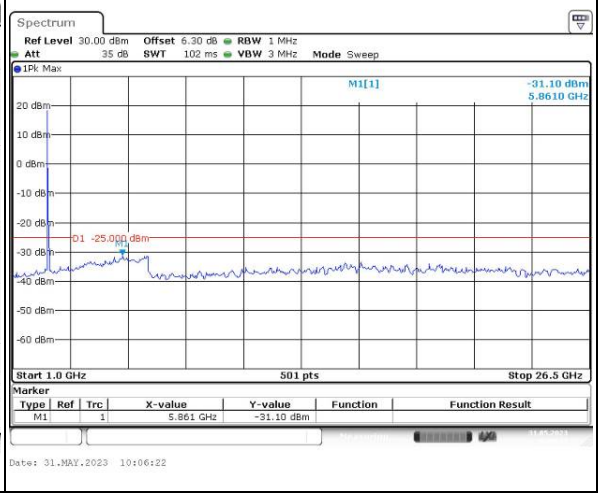
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 10MHz Bandwidth QPSK | 10MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

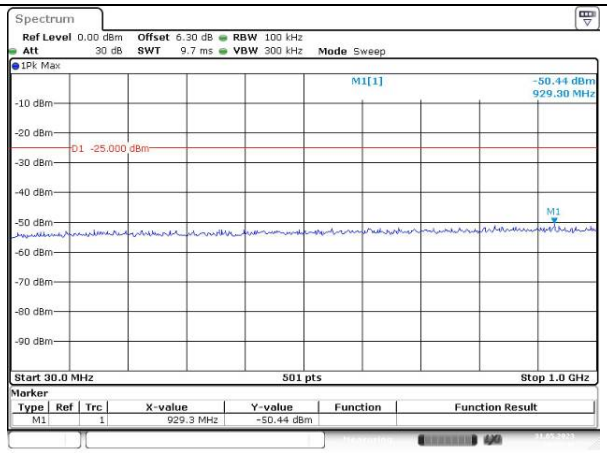
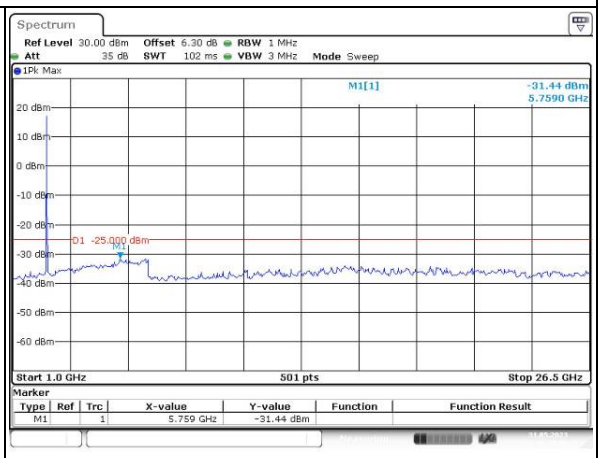
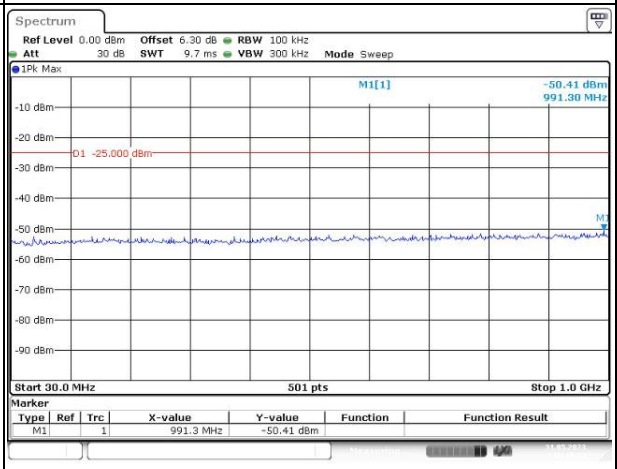
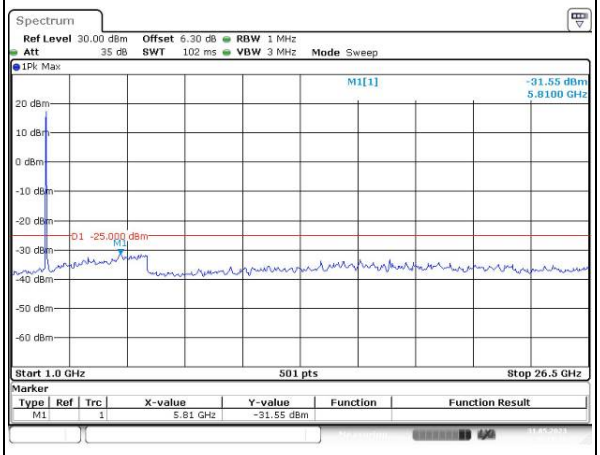
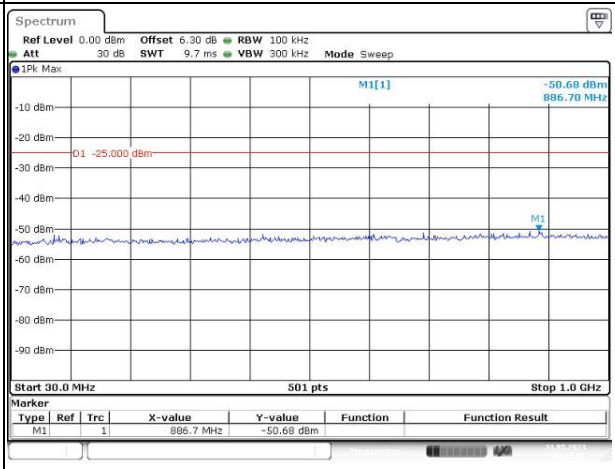
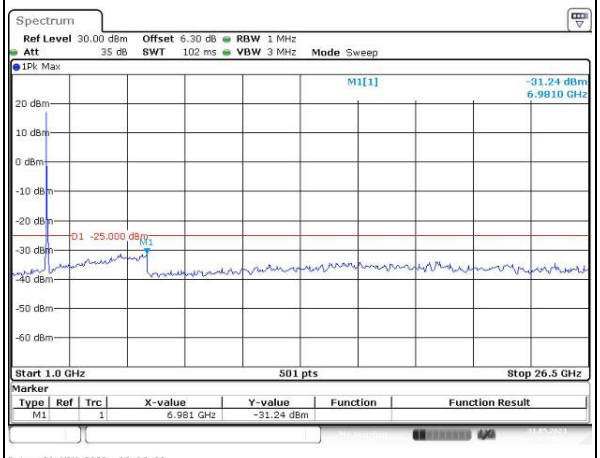
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 15MHz Bandwidth QPSK | 15MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

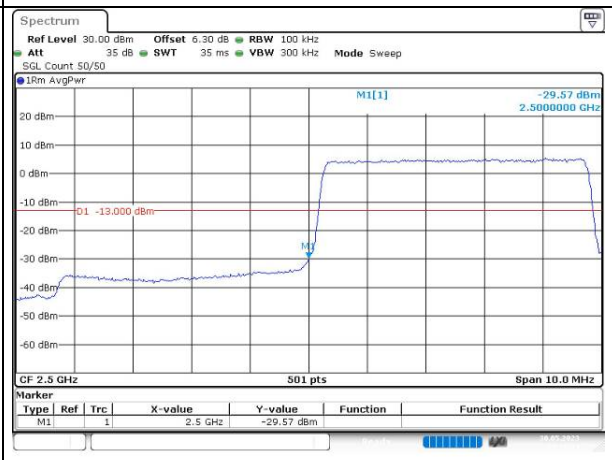
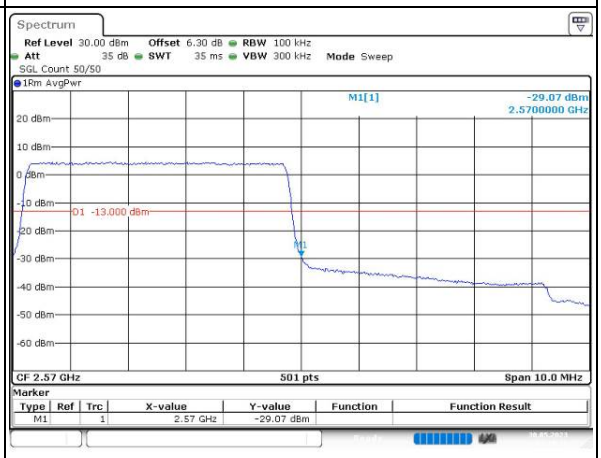
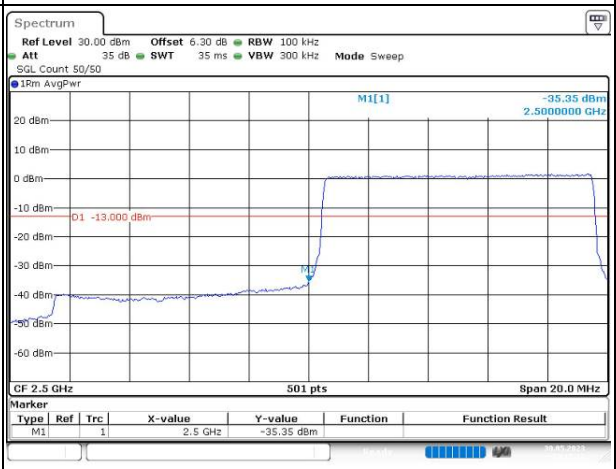
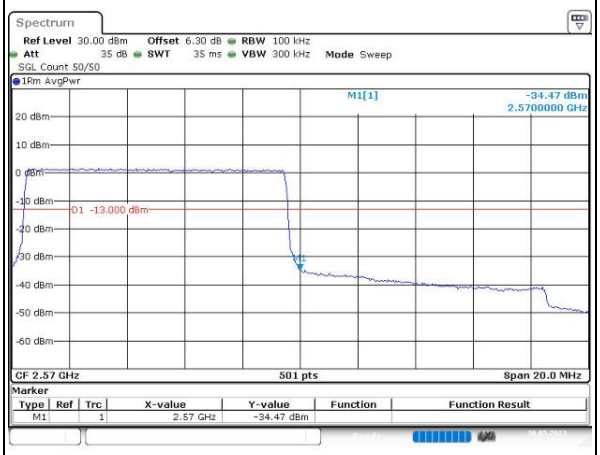
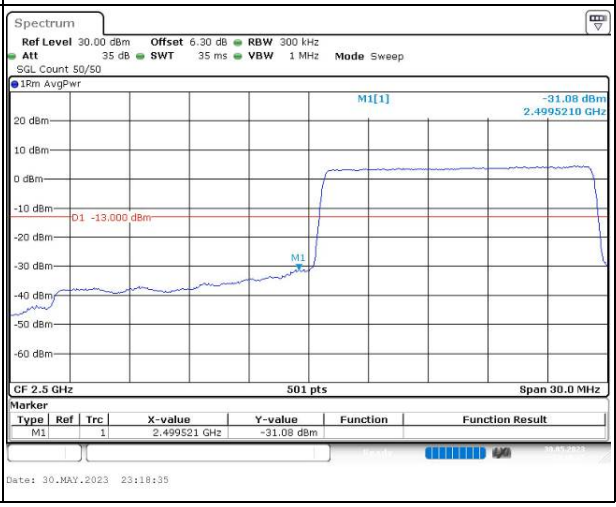
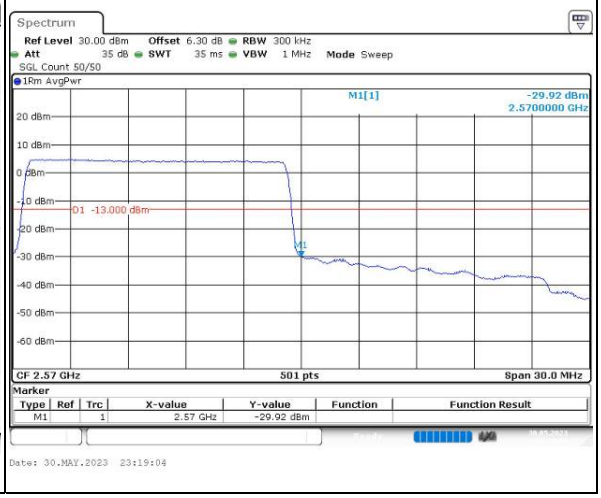
| Occupied Bandwidth | | |
|---|---|---|
| **Channel** | 20MHz Bandwidth QPSK | 20MHz Bandwidth 16QAM |
| Lowest |  |  |
| Middle |  |  |
| Highest |  |  |

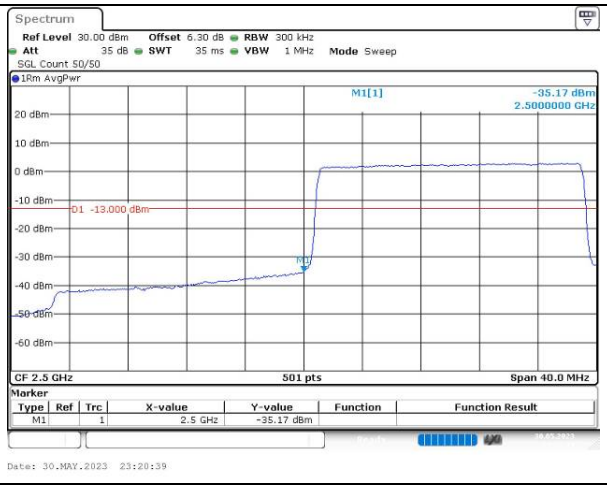
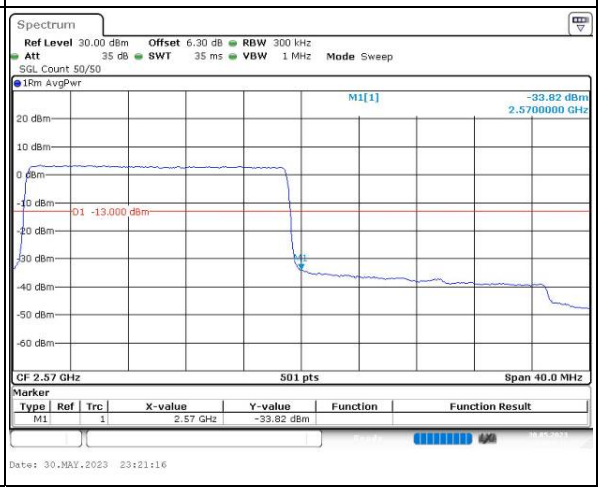
| Spurious Emissions at Antenna Terminal | | |
|---|---|---|
| **Channel** | **5MHz Bandwidth QPSK** | |
| Lowst |  |  |
| Middle |  |  |
| Highest |  |  |

| 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 |  |  |