# FCC Test Report

Report No.: AGC03709240101FR04

| | | |
|---|---|---|
| **FCC ID** | : | 2AI62-X70 |
| **APPLICATION PURPOSE** | : | Original Equipment |
| **PRODUCT DESIGNATION** | : | Rugged tablet |
| **BRAND NAME** | : | HUGEROCK |
| **MODEL NAME** | : | X70, X72, X80, H8, L8 |
| **APPLICANT** | : | SOTEN TECHNOLOGY (HONGKONG) CO., LIMITED |
| **DATE OF ISSUE** | : | Mar. 20, 2024 |
| **STANDARD(S)** | : | FCC Part 22 Subpart H<br>FCC Part 24 Subpart E |
| **REPORT VERSION** | : | V1.0 |

***A**ttestation of **G**lobal **C**ompliance (Shenzhen) Co., Ltd.*

## Report Revise Record

| Report Version | Revise Time | Issued Date | Valid Version | Notes |
|---|---|---|---|---|
| V1.0 | / | Mar. 20, 2024 | Valid | Initial Release |

## Table of Contents

## 1. General Information

| | |
|---|---|
| Applicant | SOTEN TECHNOLOGY (HONGKONG) CO., LIMITED |
| Address | FLAT/RM A10 9/F SILVERCORP INTERNATIONAL TOWER 707-713 NATHAN ROAD MONGKOK KL HONG KONG |
| Manufacturer | Shenzhen SOTEN Technology Co., Ltd |
| Address | 10th Floor, 2nd Building, BaiWang Research and development building, No. 5308 Shahe west road, Xili, Nanshan district, ShenZhen, China |
| Factory | Shenzhen SOTEN Technology Co., Ltd |
| Address | 10th Floor, 2nd Building, BaiWang Research and development building, No. 5308 Shahe west road, Xili, Nanshan district, ShenZhen, China |
| Product Designation | Rugged tablet |
| Brand Name | HUGEROCK |
| Test Model | X70 |
| Series Model | X72, X80, H8, L8 |
| Difference Description | All the same except the model name |
| Date of receipt of test item | Jan. 26, 2024 |
| Date of Test | Jan. 26, 2024~Mar, 20, 2024 |
| Deviation from Standard | No any deviation from the test method |
| Condition of Test Sample | Normal |
| Test Result | Pass |
| Test Report Form No | AGCER-FCC-GSM&WCDMA-V1 |

Note: The test results of this report relate only to the tested sample identified in this report.

| | | |
|---|---|---|
| Prepared By | Bibo Zhang<br>(Project Engineer) | Mar, 20, 2024 |
| Reviewed By | Calvin Liu<br>(Reviewer) | Mar, 20, 2024 |
| Approved By | Max Zhang<br>Authorized Officer | Mar, 20, 2024 |

## 2. Product Information

### 2.1 Product Technical Description

| | | | |
|---|---|---|---|
| Support Networks | GSM, GPRS, EDGE, WCDMA, HSDPA, HSUPA | | |
| Hardware Version | X70_2021_PAD_EN_9N_20240401_13 | | |
| Software Version | X70-MainBoard-P2-20230811 | | |
| Support Frequency Band | ☒GPRS 850 | ☒PCS1900 | ☒UMTS FDD Band II |
| | ☐UMTS FDD Band IV | ☒UMTS FDD Band V | (Non-U.S. Bands) |
| | ☐GSM 900 | ☐DCS 1800 | ☐UMTS FDD Band I |
| | ☐UMTS FDD Band VIII | (Non-U.S. Bands) | |
| Frequency Range | 824.2MHz-848.8MHz (GSM/GPRS/EDGE 850) | | |
| | 1850.2MHz-1909.8MHz (GSM/GPRS/EDGE 1900) | | |
| | 1852.4MHz-1907.6MHz (WCDMA Band II) | | |
| | 826.4MHz-846.6 MHz (WCDMA Band V) | | |
| Type of Modulation | GMSK/8PSK Modulation For GSM/GPRS/EDGE | | |
| | BPSK/QPSK Modulation For WCDMA/HSDPA/HSUPA | | |
| Emission Designator | GSM 850: | 247KGXW | |
| | GPRS 850: | 246KGXW | |
| | EDGE 850: | 249KG7W | |
| | GSM 1900: | 248KGXW | |
| | GPRS 1900: | 247KGXW | |
| | EDGE 1900: | 250KG7W | |
| | WCDMA Band II: | 4M22F9W | |
| | WCDMA Band V: | 4M31F9W | |
| Antenna Designation | PIFA Antenna | | |
| Antenna Gain | GSM850:-2.31dBi | PCS1900: 2.38dBi | |
| | WCDMA850: -2.31dBi | WCDMA1900: 2.38dBi | |
| Power Supply | DC 3.8V by Built-in Li-ion Battery | | |
| Dual Card | GSM /WCDMA Card Slot | | |
| Extreme Vol. Limits | DC3.23V to 4.35V (Normal: DC 3.8V) | | |
| Extreme Temp. Tolerance | -30 °C to +50 °C | | |
| Temperature Range | -20℃ to +50℃ | | |

**GSM/WCDMA SLOT 1:**

| | Maximum ERP/EIRP (dBm) | Max. Average Burst Power (dBm) |
|---|---|---|
| GSM 850 | 29.55 | 31.66 |
| PCS 1900 | 26.31 | 28.62 |
| UMTS BAND V | 22.15 | 24.07 |
| UMTS BAND II | 20.41 | 21.94 |

**GSM/WCDMA SLOT 2:**

| | Maximum ERP/EIRP (dBm) | Max. Average Burst Power (dBm) |
|---|---|---|
| GSM 850 | 28.14 | 30.24 |
| PCS 1900 | 25.01 | 27.01 |
| UMTS BAND V | 20.37 | 22.56 |
| UMTS BAND II | 18.64 | 19.57 |

### 2.2 Related Submittal(S) / Grant (S)

This submittal(s) (test report) is intended for FCC ID: **2AI62-X70,** filing to comply with Part 2, Part 22/24 of the Federal Communication Commission rules.

### 2.3 Test Methodology

The tests were performed according to following standards:

| No. | Identity | Document Title |
|---|---|---|
| 1 | 47 CFR FCC Part 2 | Frequency allocations and radio treaty matters, general rules and regulations. |
| 2 | 47 CFR FCC Part 22 | Public Mobile Services. |
| 3 | 47 CFR FCC Part 24 | Personal Communications Services. |
| 4 | ANSI C63.26-2015 | American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services |
| 5 | ANSI/TIA-603-E-2016 | Land Mobile FM or PM Communications Equipment Measurement and Performance Standards |
| 6 | KDB 971168 | D01 v03r01 Measurement Guidance For Certification Of Licensed Digital Transmitters. |

### 2.4 Device Capabilities

850/1900 GSM/GPRS/EGPRS,850/1900 WCDMA/HSPA, Multi-Band LTE,802.11 b/g/n for WLAN,802.11 a/n/ac for UNII, Bluetooth (1X,EDR,LE),GPS.

For emissions from 1GHz – 18GHz, low, mid, and high channels were tested with highest power and worst case configuration.

The emissions below 1GHz and above 18GHz were tested with the highest transmitting power channel and the worst case configuration.

The EUT was manipulated through three orthogonal planes of X-orientation (flatbed), Y-orientation (landscape),and Z-orientation (portrait) during the testing. Only the worst case emissions were reported in this test report.

This device supports dual-SIM communication, and only the data corresponding to the worst card slot (SIM Card 1) is reflected in the report.

### 2.5 Special Accessories

The battery was supplied by the applicant were used as accessories and being tested with EUT intended for FCC grant together.

### 2.6 Equipment Modifications

Not available for this EUT intended for grant.

## 2.7 Emission Designator

**GSM Emission Designator**

**Emission Designator = 249KGXW**

GSM BW = 249 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

**EDGE Emission Designator**

**Emission Designator = 249KG7W**

GSM BW = 249 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

**WCDMA Emission Designator**

**Emission Designator = 4M17F9W**

WCDMA BW = 4.17 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

**QPSK Modulation**

**Emission Designator = 4M48G7D**

LTE BW = 4.48 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

**QAM Modulation**

**Emission Designator = 4M48W7D**

LTE BW = 4.48 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

# 3. Test Environment

## 3.1 Address of The Test Laboratory

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

## 3.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

**CNAS-Lab Code: L5488**

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to follow CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories).

**A2LA-Lab Cert. No.: 5054.02**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to follow ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

**FCC-Registration No.: 975832**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

**IC-Registration No.: 24842 (CAB identifier: CN0063)**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.

### 3.3 Environmental Conditions

| | Normal Conditions | Extreme Conditions |
|---|---|---|
| Temperature range | 15~35℃ | -30℃~50℃ |
| Humidity range | 20 % to 75 %. | 20 % to 75 %. |
| Pressure range | 86-106kPa | 86-106kPa |
| Power supply | DC 3.8V | DC3.23V or 4.35V |
| Note: The Extreme Temperature and Extreme Voltages declared by the manufacturer. | | |

### 3.4 Measurement Uncertainty

| Test | Measurement Uncertainty |
|---|---|
| Transmitter power conducted | ±0.57 dB |
| Transmitter power Radiated | ±2.20 dB |
| Conducted spurious emission 9kHz-40 GHz | ±2.20 dB |
| Occupied Bandwidth | ±0.01ppm |
| Radiated Emission 30~1000MHz | ±4.10dB |
| Radiated Emission Above 1GHz | ±4.32dB |
| Conducted Disturbance:0.15~30MHz | ±3.20dB |
| Radio Frequency | ± 6.5 x 10-8 |
| RF Power, Conducted | ± 0.9 dB |

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

### 3.5 List of Test Equipment

| ● Radiated Spurious Emission | | | | | | | |
|---|---|---|---|---|---|---|---|
| Used | Equipment No. | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. Date (YY-MM-DD) | Next Cal. Date (YY-MM-DD) |
| ☒ | AGC-EM-E046 | EMI Test Receiver | R&S | ESCI | 10096 | 2023-02-03 | 2024-02-02 |
| ☒ | AGC-EM-E046 | EMI Test Receiver | R&S | ESCI | 10096 | 2024-02-01 | 2025-01-31 |
| ☒ | AGC-EM-E061 | Spectrum Analyzer | Agilent | N9010A | MY53470504 | 2023-06-01 | 2024-05-31 |
| ☒ | AGC-ER-E032 | Universal Radio Communication Tester | R&S | CMW500 | 120909 | 2023-07-05 | 2024-07-04 |
| ☒ | AGC-EM-E086 | Loop Antenna | ZHINAN | ZN30900C | 18051 | 2022-03-07 | 2024-03-06 |
| ☒ | AGC-EM-E086 | Loop Antenna | ZHINAN | ZN30900C | 18051 | 2024-03-05 | 2026-03-04 |
| ☒ | AGC-EM-E001 | Wideband Antenna | SCHWARZBECK | VULB9168 | D69250 | 2023-05-11 | 2025-05-10 |
| ☒ | AGC-EM-E005 | Wideband Antenna | SCHWARZBECK | VULB9168 | VULB9168-494 | 2023-01-05 | 2025-01-04 |
| ☒ | AGC-EM-E029 | Broadband Ridged Horn Antenna | ETS | 3117 | 00034609 | 2023-03-23 | 2024-03-22 |
| ☒ | AGC-EM-E102 | Broadband Ridged Horn Antenna | ETS | 3117 | 00154520 | 2023-06-03 | 2024-06-02 |
| ☒ | AGC-EM-E082 | Horn Antenna | SCHWARZBECK | BBHA 9170 | #768 | 2023-09-24 | 2025-09-23 |
| ☒ | AGC-EM-E146 | Pre-amplifier | ETS | 3117-PA | 00246148 | 2022-08-04 | 2024-08-03 |
| ☐ | AGC-EM-E021 | Pre-amplifier | MITEQ | AM-4A-000115 | 1465421 | 2022-06-08 | 2024-06-07 |
| ☒ | AGC-ER-E037 | Signal Generator | Agilent | N5182A | MY50140530 | 2023-06-01 | 2024-05-31 |
| ☒ | AGC-EM-A139 | 6dB Attenuator | Eeatsheep | LM-XX-6-5W | N/A | 2023-06-09 | 2024-06-08 |
| ☐ | AGC-EM-A090 | High Pass Filter 1 (2500-18000MHz) | N/A | N/A | N/A | 2023-06-01 | 2024-05-31 |
| ☒ | AGC-EM-A091 | High Pass Filter 2 (1200-18000MHz) | N/A | N/A | N/A | 2023-06-01 | 2024-05-31 |
| ☒ | AGC-EM-A113 | Band Stop Filter (825-850MHz) | MICRO-TRONICS | BRC50717 | N/A | 2023-06-01 | 2024-05-31 |
| ☐ | AGC-EM-A114 | Band Stop Filter (880-915MHz) | MICRO-TRONICS | BRC50718 | N/A | 2023-06-01 | 2024-05-31 |
| ☒ | AGC-EM-A115 | Band Stop Filter (1710-1785MHz) | MICRO-TRONICS | BRC50719 | N/A | 2023-06-01 | 2024-05-31 |
| ☒ | AGC-EM-A116 | Band Stop Filter (1850-1950MHz) | MICRO-TRONICS | BRC50720 | N/A | 2023-06-01 | 2024-05-31 |
| ☐ | AGC-EM-A117 | Band Stop Filter (1920-1980MHz) | MICRO-TRONICS | BRC50721 | N/A | 2023-06-01 | 2024-05-31 |

# 4. System Test Configuration

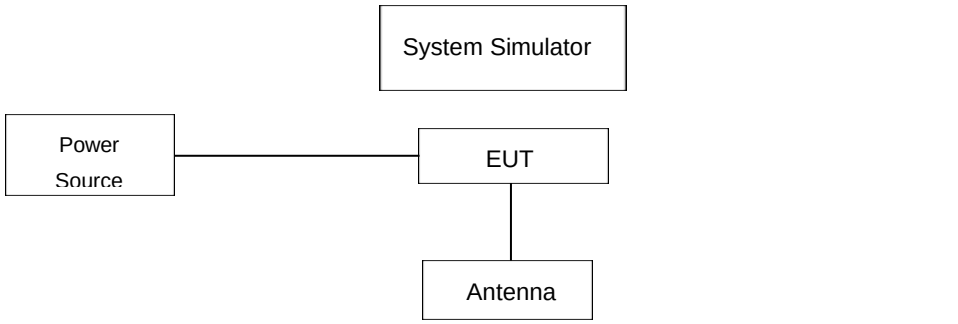
## 4.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

## 4.2 EUT Exercise

The Transmitter was operated in the maximum output power mode through Communication Tester. The TX frequency was fixed which was for the purpose of the measurements.

## 4.3 Configuration of EUT System




This example is connection diagram of EUT test configurations
. For detail, please refer to test mode configuration and setup photographs for each

Table 2-1 Equipment Used in EUT System

## 4.4 Equipment Used in Tested System

The following peripheral devices and interface cables were connected during the measurement:

☒ Test Accessories Come From The Laboratory

| No. | Equipment | Model No. | Manufacturer | Specification Information | Cable |
|---|---|---|---|---|---|
| 1 | Adapter | HW-200440C00 | Huawei | Input(AC):100V-240V 50/60Hz 2.4A Output(DC):5V/3A | 1.2m, Unshielded |
| 2 | Earphone | N/A | CXT | N/A | 1.0m, Unshielded |

☒ Test Accessories Come From The Manufacturer

| No. | Equipment | Model No. | Manufacturer | Specification Information | Cable |
|---|---|---|---|---|---|
| 1 | Battery | K127281PC | Shenzhen Kaiser Energy Technology Co., LTD | DC 3.8V 9500mAh | N/A |
| 2 | USB Cable | N/A | N/A | N/A | 1.2m, Unshielded |

| | | | | | |
|---|---|---|---|---|---|
| 3 | 4PIN Magnetic Charging Cable | N/A | N/A | N/A | 1.2m, Unshielded |

# 5. Summary of Test Results

## 5.1 Test Condition: Conducted Test

| Item | Test Description | FCC Rules | Result |
|---|---|---|---|
| 1 | Occupied Bandwidth | §2.1049 | Pass |
| 2 | Band Edge / Spurious and Harmonic Emissions at Antenna Terminal | §2.1051, §22.917(a), §24.238(a) | Pass |
| 3 | Conducted Output Power | §2.1046 | Pass |
| 4 | Frequency stability / variation of ambient temperature | §2.1055, § 22.355, §24.235 | Pass |
| 5 | Peak- to- Average Ratio | §24.232(d) | Pass |

## 5.2 Test Condition: Radiated Test

| Item | Test Description | FCC Rules | Result |
|---|---|---|---|
| 1 | Effective Radiated Power | §22.913(a)(5) | Pass |
| 2 | Equivalent Isotropic Radiated Power | §24.232(c) | Pass |
| 3 | Radiated Spurious and Harmonic Emissions | §2.1053, §22.917(a), §24.238(a), | Pass |

## 6. Description of Test Modes

| Bands | Tx/Rx Frequency | RF Channel | | |
|---|---|---|---|---|
| | | Low(L) | Middle(M) | High(H) |
| GSM/GPRS/ EDGE 850 | TX (824 MHz ~ 849 MHz) | Channel 128 | Channel 190 | Channel 251 |
| | | 824.2 MHz | 836.6 MHz | 848.8 MHz |
| WCDMA band V | TX (824 MHz ~ 849 MHz) | Channel 4132 | Channel 4182 | Channel 4233 |
| | | 826.4 MHz | 836.4 MHz | 846.6 MHz |

| Bands | Tx/Rx Frequency | RF Channel | | |
|---|---|---|---|---|
| | | Low(L) | Middle(M) | High(H) |
| GSM/GPRS/ EDGE1900 | TX (1850 MHz-1910 MHz) | Channel 512 | Channel 661 | Channel 810 |
| | | 1850.2 MHz | 1880.0 MHz | 1909.8 MHz |
| WCDMA Band II | TX (1850 MHz-1910 MHz) | Channel 9262 | Channel 9400 | Channel 9538 |
| | | 1852.4 MHz | 1880.0 MHz | 1907.6 MHz |

Pre-scan all bandwidth and RB, find worse case mode are chosen to the report, the worse mode applicability and tested channel detail as below:

| Band | Radiated | Conducted |
|---|---|---|
| GSM/GPRS/ EDGE 850/1900 | GSM (GMSK, 1Tx-slot) Link<br>GPRS (GMSK, 1Tx-slot) Link<br>EDGE (8PSK, 1Tx-slot) Link | GSM (GMSK,1Tx-slot) Link<br>GPRS (GMSK, 1Tx-slot) Link<br>EDGE (8PSK, 1Tx-slot) Link |
| WCDMA Band II/V | RMC 12.2kbps Link | RMC 12.2kbps Link |

**According to 3GPP 25.101 sub-clause 6.2.2 , the maximum output power is allowed to be reduced by following the table.**

Table 6.1aA: UE maximum output power with HS-DPCCH and E-DCH

| UE Transmit Channel Configuration | CM(db) | MPR(db) |
|---|---|---|
| For all combinations of ,DPDCH,DPCCH HS-DPDCH,E-DPDCH and E-DPCCH | 0≤ CM≤3.5 | MAX(CM-1,0) |
| Note: CM=1 for $\beta_c/\beta_d$=12/15,$\beta_{hs}/\beta_c$=24/15.For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference. | | |

The device supports MPR to solve linearity issues (ACLR or SEM) due to the higher peak-to average ratios (PAR) of the HSUPA signal. This prevents saturating the full range of the TX DAC inside of device and provides a reduced power output to the RF transceiver chip according to the Cubic Metric (a function of the combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH).

When E-DPDCH channels are present the beta gains on those channels are reduced firsts to try to get the power under the allowed limit. If the beta gains are lowered as far as possible, then a hard limiting is applied at the maximum allowed level.

The SW currently recalculates the cubic metric every time the beta gains on the E-DPDCH are reduced. The cubic metric will likely get lower each time this is done .However, there is no reported reduction of maximum output power in the HSUPA mode since the device also provides a compensate for the power back-off by increasing the gain of TX_AGC in the transceiver (PA) device.

The end effect is that the DUT output power is identical to the case where there is no MPR in the device.

# 7. Conducted Output Power

## 7.1 Provisions Applicable

The conduction test is carried out in a shielded room. According to the test, connect the device under test to the antenna port on the non-conductive platform directly to the test device for evaluation and measurement (ANSI-C63.26-2015 Clause 5.4)

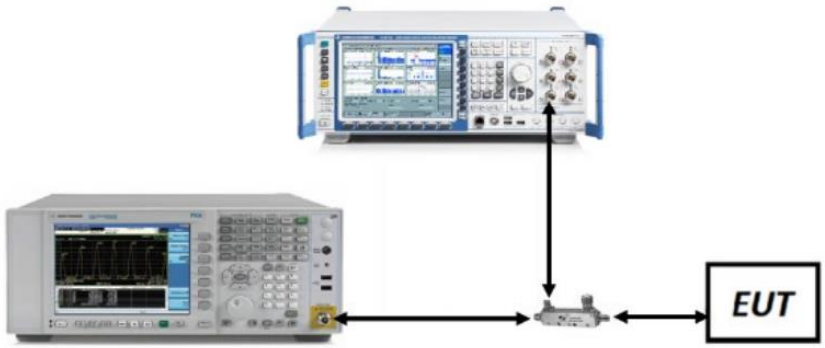
## 7.2 Measurement Procedure

- The transmitter output port was connected to base station.
- The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.
- The path loss was compensated to the results for each measurement.

Measure the maximum burst average power and average power for other modulation signal.

The EUT was setup for the max output power with pseudo random data modulation. Power was measured with Spectrum Analyzer. The measurements were performed on all mode (GSM/EGPRS 850, GSM/EGPRS 1900, WCDMA/HSPA band II, WCDMA/HSPA band V) at 3 typical channels(the Top Channel, the Middle Channel and the Bottom Channel) for each band.

## 7.3 Measurement Setup



### 7.4 Measurement Result

| GSM 850 Maximum Average Power (dBm) | | | |
|---|---|---|---|
| **Channel** | **128** | **190** | **251** |
| **Frequency (MHz)** | **824.2 MHz** | **836.6 MHz** | **848.8 MHz** |
| GSM (GMSK, 1Tx-slot) | 31.64 | 31.64 | **31.66** |
| GPRS (GMSK, 1Tx-slot) | 31.64 | 31.58 | 31.58 |
| GPRS (GMSK, 2Tx-slot) | 30.42 | 30.12 | 30.24 |
| GPRS (GMSK, 3Tx-slot) | 28.12 | 28.19 | 28.31 |
| GPRS (GMSK, 4Tx-slot) | 26.34 | 26.25 | 26.19 |
| EDGE (8PSK, 1Tx-slot) | 25.56 | 25.31 | 25.00 |
| EDGE (8PSK, 2Tx-slot) | 23.48 | 23.91 | 23.74 |
| EDGE (8PSK, 3Tx-slot) | 21.55 | 21.74 | 21.36 |
| EDGE (8PSK, 4Tx-slot) | 19.58 | 19.96 | 19.00 |

| PCS 1900 Maximum Average Power (dBm) | | | |
|---|---|---|---|
| **Channel** | **512** | **661** | **810** |
| **Frequency (MHz)** | **1850.2 MHz** | **1880.0 MHz** | **1909.8 MHz** |
| GSM (GMSK, 1Tx-slot) | **28.83** | 28.67 | **28.62** |
| GPRS (GMSK, 1Tx-slot) | 28.81 | 28.65 | 28.60 |
| GPRS (GMSK, 2Tx-slot) | 26.33 | 26.31 | 26.47 |
| GPRS (GMSK, 3Tx-slot) | 24.28 | 24.11 | 24.20 |
| GPRS (GMSK, 4Tx-slot) | 22.80 | 22.93 | 22.08 |
| EDGE (8PSK, 1Tx-slot) | 25.41 | 25.88 | 26.01 |
| EDGE (8PSK, 2Tx-slot) | 23.88 | 23.79 | 24.22 |
| EDGE (8PSK, 3Tx-slot) | 21.34 | 21.37 | 22.05 |
| EDGE (8PSK, 4Tx-slot) | 19.47 | 19.53 | 20.04 |

| WCDMA Band II Maximum Average Power (dBm) | | | |
|---|---|---|---|
| **Channel** | **9262** | **9400** | **9538** |
| **Frequency (MHz)** | **1852.4 MHz** | **1880.0 MHz** | **1907.6 MHz** |
| RMC 12.2kbps | 21.33 | 21.31 | **21.94** |
| HSDPA Subtest-1 | 20.39 | 20.06 | 19.67 |
| HSDPA Subtest-2 | 19.58 | 19.63 | 19.26 |
| HSDPA Subtest-3 | 19.52 | 19.53 | 19.16 |
| HSDPA Subtest-4 | 19.49 | 19.47 | 19.10 |
| HSUPA Subtest-1 | 20.00 | 19.99 | 19.64 |
| HSUPA Subtest-2 | 20.48 | 18.52 | 20.14 |
| HSUPA Subtest-3 | 19.03 | 19.02 | 20.66 |
| HSUPA Subtest-4 | 20.99 | 18.03 | 19.67 |
| HSUPA Subtest-5 | 20.03 | 20.02 | 19.69 |

| WCDMA Band V Maximum Average Power (dBm) | | | |
|---|---|---|---|
| **Channel** | **4132** | **4182** | **4233** |
| **Frequency(MHz)** | **826.4 MHz** | **836.4 MHz** | **846.6 MHz** |
| RMC 12.2kbps | 22.91 | 23.01 | 22.88 |
| HSDPA Subtest-1 | **24.07** | 23.99 | 22.03 |
| HSDPA Subtest-2 | 23.52 | 23.49 | 23.52 |
| HSDPA Subtest-3 | 23.55 | 23.47 | 23.51 |
| HSDPA Subtest-4 | 23.54 | 23.44 | 23.50 |
| HSUPA Subtest-1 | 19.64 | 22.02 | 22.02 |
| HSUPA Subtest-2 | 20.14 | 22.50 | 22.57 |
| HSUPA Subtest-3 | 20.66 | 22.99 | 23.06 |
| HSUPA Subtest-4 | 19.67 | 22.04 | 22.06 |
| HSUPA Subtest-5 | 19.69 | 22.01 | 21.02 |

# 8. Radiated Output Power

## 8.1 Provisions Applicable

The radiation test is carried out in a semi-anechoic chamber.

According to the test, put the device under test on a non-conductive platform 3 meters away from the receiving antenna (ANSI/TIA-603-E-2016 Article 2.2.17).

The following rules are for the maximum radiated power limit requirements of the product:

| Mode | Nominal Peak Power |
|---|---|
| GSM 850 | < 7 Watts max. ERP (38.45dBm) |
| PCS 1900 | < 2 Watts max. EIRP (33dBm) |
| WCDMA Band II | < 2 Watts max. EIRP (33dBm) |
| WCDMA Band V | < 7 Watts max. ERP (38.45dBm) |

## 8.2 Measurement Procedure

1. Radiated power measurements are performed using the signal analyzer's "channel power"
2. measurement capability for signals with continuous operation.
3. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
4. VBW ≥ 3 x RBW
5. Span = 1.5 times the OBW
6. No. of sweep points > 2 x span / RBW
7. Detector = RMS
8. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
9. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
10. Trace mode = trace averaging (RMS) over 100 sweeps
11. The trace was allowed to stabilize.

- **Radiation Construction Method：**

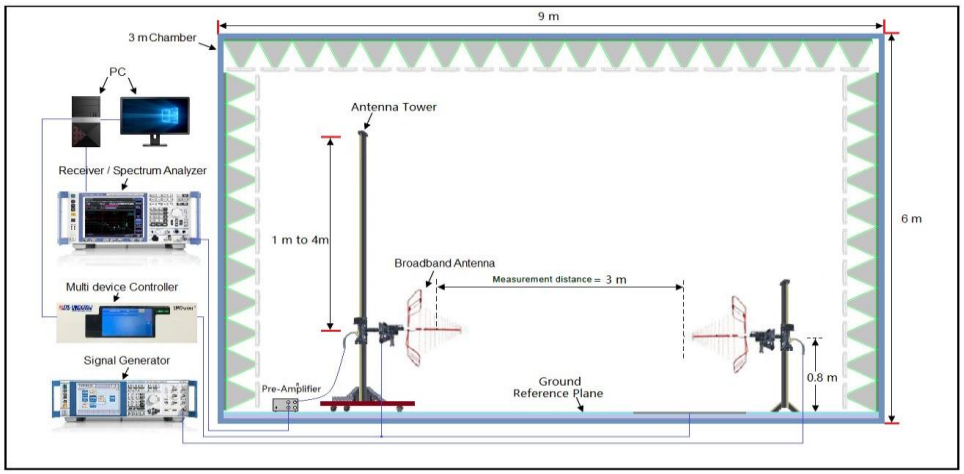
1. The turntable is rotated through 360 degrees, and the receiving antenna scans in order to determine the level of the maximized emission.
2. A half wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.
3. The power is calculated by the following formula：

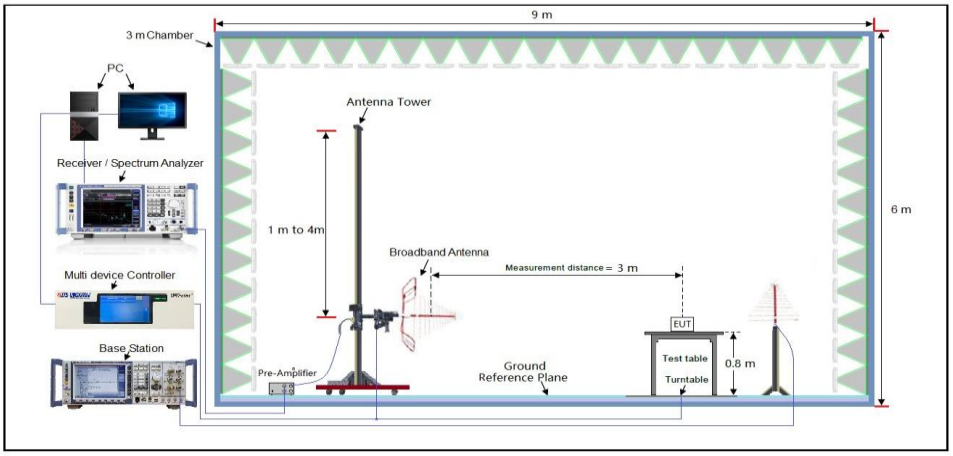
Pd(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dB)

4. Where: Pd is the dipole equivalent power and Pg is the generator output power into the substitution antenna.
5. The maximum value is calculated by adding the forward power to the calibrated source plus its appropriate gain value. These steps are repeated with the receiving antenna in both vertical and horizontal polarization. the difference between the gain of the horn and an isotropic antenna are taken into consideration
6. The EUT was tested in three orthogonal planes (X, Y, Z) and in all possible test configurations and positioning.
7. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

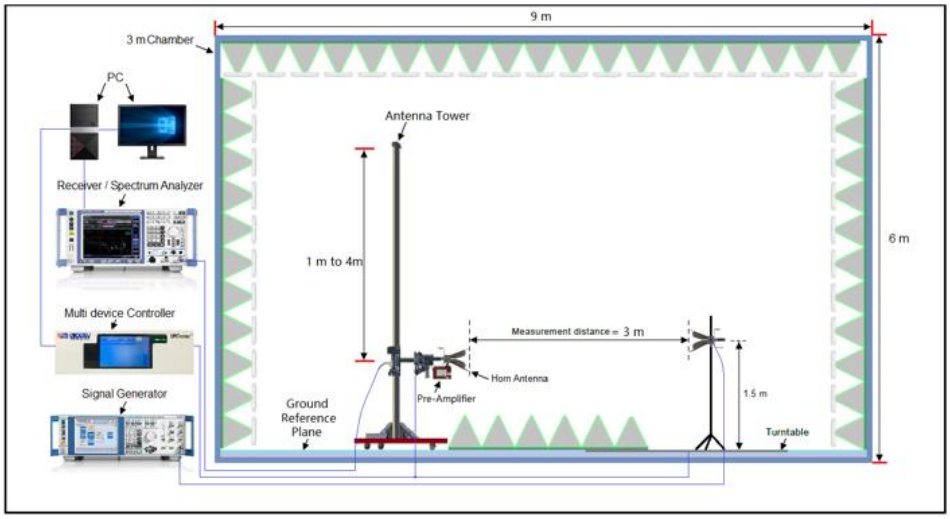
### 8.3 Measurement Setup

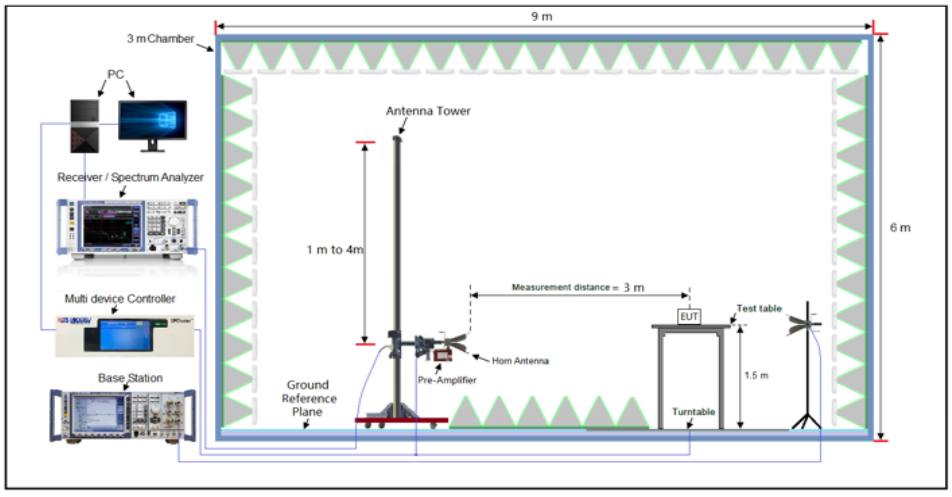
**Radiated Power 30MHz to 1GHz Test setup**






**Radiated Power Above 1GHz Test setup**



### 8.4 Measurement Result

| Mode | Ch./ Freq. | | Substitute Level (dBm) | Ant. Gain (dBi) | C.L | Pol. | Limit | ERP | |
|---|---|---|---|---|---|---|---|---|---|
| | channel | Freq. (MHz) | | | | | W | W | dBm |
| GSM850 | 128 | 824.2 | 24.86 | 5.90 | 1.21 | H | < 7.00 | 0.902 | **29.55** |
| | 190 | 836.6 | 24.79 | 5.90 | 1.22 | H | | 0.885 | 29.47 |
| | 251 | 848.8 | 24.73 | 5.90 | 1.25 | H | | 0.867 | 29.38 |
| GPRS | 128 | 824.2 | 24.82 | 5.90 | 1.21 | H | | 0.893 | 29.51 |
| | 190 | 836.6 | 24.66 | 5.90 | 1.22 | H | | 0.859 | 29.34 |
| | 251 | 848.8 | 24.76 | 5.90 | 1.25 | H | | 0.873 | 29.41 |
| EDGE | 128 | 824.2 | 18.53 | 5.90 | 1.21 | H | | 0.210 | 23.22 |
| | 190 | 836.6 | 18.51 | 5.90 | 1.22 | H | | 0.208 | 23.19 |
| | 251 | 848.8 | 18.79 | 5.90 | 1.25 | H | | 0.221 | 23.44 |
| WCDMA850 | 4132 | 826.4 | 15.45 | 5.90 | 1.21 | H | | 0.103 | 20.14 |
| | 4183 | 836.6 | 15.69 | 5.90 | 1.25 | H | | 0.108 | 20.34 |
| | 4233 | 846.6 | 15.51 | 5.90 | 1.24 | H | | 0.104 | 20.17 |
| HSDPA | 4132 | 826.4 | 17.36 | 5.90 | 1.21 | H | | 0.160 | 22.05 |
| | 4183 | 836.6 | 17.36 | 5.90 | 1.25 | H | | 0.159 | 22.01 |
| | 4233 | 846.6 | 17.49 | 5.90 | 1.24 | H | | 0.164 | **22.15** |
| HSUPA | 4132 | 826.4 | 14.65 | 5.90 | 1.21 | H | | 0.086 | 19.34 |
| | 4183 | 836.6 | 14.76 | 5.90 | 1.25 | H | | 0.087 | 19.41 |
| | 4233 | 846.6 | 14.70 | 5.90 | 1.24 | H | | 0.086 | 19.36 |

| Mode | Ch./ Freq. | | Substitute Level (dBm) | Ant. Gain (dBi) | C.L | Pol. | Limit | EIRP | |
|---|---|---|---|---|---|---|---|---|---|
| | channel | Freq. (MHz) | | | | | W | W | dBm |
| PCS1900 | 512 | 1850.2 | 19.82 | 8.6 | 2.11 | H | < 2.00 | 0.428 | **26.31** |
| | 661 | 1880.0 | 19.34 | 8.6 | 2.15 | H | | 0.379 | 25.79 |
| | 810 | 1909.8 | 19.50 | 8.6 | 2.15 | H | | 0.394 | 25.95 |
| GPRS | 512 | 1850.2 | 17.82 | 8.6 | 2.11 | H | | 0.270 | 24.31 |
| | 661 | 1880.0 | 18.06 | 8.6 | 2.15 | H | | 0.282 | 24.51 |
| | 810 | 1909.8 | 18.36 | 8.6 | 2.15 | H | | 0.303 | 24.81 |
| EDGE | 512 | 1850.2 | 16.02 | 8.6 | 2.11 | H | | 0.178 | 22.51 |
| | 661 | 1880.0 | 16.13 | 8.6 | 2.15 | H | | 0.181 | 22.58 |
| | 810 | 1909.8 | 15.89 | 8.6 | 2.15 | H | | 0.171 | 22.34 |
| WCDMA 1900 | 9262 | 1852.4 | 13.90 | 8.6 | 2.11 | H | | 0.109 | 20.39 |
| | 9400 | 1880.0 | 13.96 | 8.6 | 2.15 | H | | 0.110 | **20.41** |
| | 9538 | 1907.6 | 13.92 | 8.6 | 2.15 | H | | 0.109 | 20.37 |
| HSDPA | 9262 | 1852.4 | 12.62 | 8.6 | 2.11 | H | | 0.081 | 19.11 |
| | 9400 | 1880.0 | 12.83 | 8.6 | 2.15 | H | | 0.085 | 19.28 |
| | 9538 | 1907.6 | 12.89 | 8.6 | 2.15 | H | | 0.086 | 19.34 |
| HSUPA | 9262 | 1852.4 | 13.58 | 8.6 | 2.11 | H | | 0.101 | 20.03 |
| | 9400 | 1880.0 | 13.62 | 8.6 | 2.15 | H | | 0.102 | 20.07 |
| | 9538 | 1907.6 | 13.61 | 8.6 | 2.15 | H | | 0.101 | 20.06 |

Note:

1. EIRP/ERP = Substitute Level (dBm) + Ant. Gain – C.L (Cable Loss)
2. All polarizations and modes have been tested, only the worst mode is recorded in the report

# 9. Peak-to-Average Ratio

## 9.1 Provisions Applicable

This is the test for the Peak-to-Average Ratio from the EUT.

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB

## 9.2 Measurement Procedure

- **CCDF Procedure for PAPR:**

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Set the measurement interval as follows:
   - for continuous transmissions, set to 1 ms,
   - or burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time
4. that is less than or equal to the burst duration.
5. Record the maximum PAPR level associated with a probability of 0.1%.

- **Alternate Procedure for PAPR:**

Use one of the procedures presented in 5.2(ANSI C63.26-2015) to measure the total peak power and record as $P_{Pk}$ Use one of the applicable procedures presented 5.2(ANSI C63.26-2015) to measure the total average power and recordas PAvg. Determine the P.A.R. from:

P.A.R(dB) = $P_{Pk}$ (dBm) – $P_{Avg}$ (dBm) ($P_{Avg}$ = Average Power + Duty cycle Factor)

Allow trace to fully stabilize.

Use the peak marker function to determine the peak amplitude level.

■ **<u>Test Settings (Peak Power):</u>**

The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

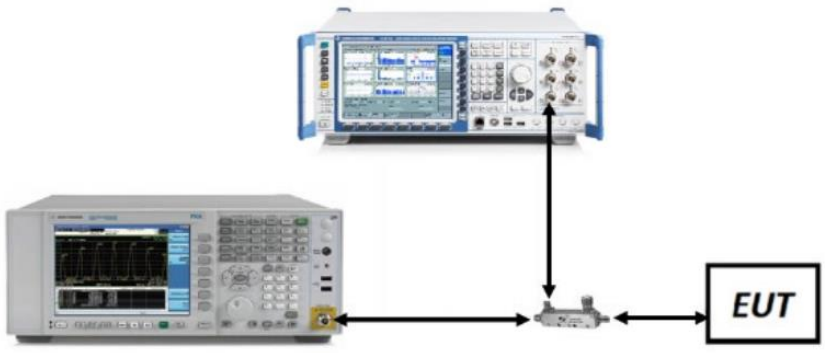
1. Set the RBW ≥ OBW.
2. Set VBW ≥ 3 × RBW.
3. Set span ≥ 2 × OBW.
4. Sweep time ≥ 10 × (number of points in sweep) × (transmission symbol period).

5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the peak amplitude level.

■ **Test Settings (Average Power)**

1. Set span to 2 × to 3 × the OBW.
2. Set RBW ≥ OBW.
3. Set VBW ≥ 3 × RBW.
4. Set number of measurement points in sweep ≥ 2 × span / RBW.
5. Sweep time: Set ≥ [10 × (number of points in sweep) × (transmission period)] for single sweep (Automation-compatible) measurement. The transmission period is the (on + off) time.
6. Detector = power averaging (rms).
7. Set sweep trigger to “free run.”
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. (To accurately determine the average power over the on and off period of the transmitter, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.)
9. Use the peak marker function to determine the maximum amplitude level.
10. Add [10 log (1/duty cycle)] to the measured maximum power level to compute the average power during continuous transmission. For example, add [10 log (1/0.25)] = 6 dB if the duty cycle is a constant 25%.

### 9.3 Measurement Setup



### 9.4 Measurement Result

| Bands | Modulation | Peak-to-average ratio (dB) | | | Limit | Result |
|---|---|---|---|---|---|---|
| | | Lowest | Middle | Highest | (dB) | |
| GSM 850 | GSM | 2.65 | 2.64 | 2.64 | 13 | Pass |
| | GPRS | 2.64 | 2.64 | 2.64 | 13 | Pass |
| | EDGE | 5.67 | 5.67 | 5.68 | 13 | Pass |
| PCS 1900 | GSM | 2.64 | 2.64 | 2.64 | 13 | Pass |
| | GPRS | 2.64 | 2.64 | 2.65 | 13 | Pass |
| | EDGE | 5.50 | 5.54 | 5.35 | 13 | Pass |
| WCDMA Band II | RMC 12.2kbps | 2.84 | 2.71 | 2.76 | 13 | Pass |
| WCDMA Band II | HSUPA | 2.96 | 2.83 | 2.89 | 13 | Pass |
| WCDMA Band II | HSDPA | 4.26 | 4.44 | 4.65 | 13 | Pass |
| WCDMA Band V | RMC 12.2kbps | 2.20 | 2.55 | 2.09 | 13 | Pass |
| WCDMA Band V | HSUPA | 2.46 | 2.8 | 2.35 | 13 | Pass |
| WCDMA Band V | HSDPA | 3.87 | 4.70 | 5.03 | 13 | Pass |

# 10. 99% Occupied Bandwidth and 26dB Emission Bandwidth

## 10.1 Provisions Applicable

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

The EUT makes a call to the communication simulator.

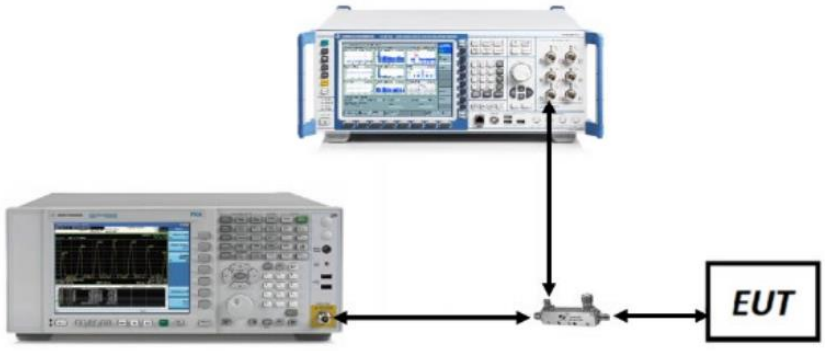
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth

## 10.2 Measurement Procedure

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99%
2. Occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by
3. any intermediate power nulls in the fundamental emission.
4. RBW = 1 – 5% of the expected OBW
5. VBW ≥ 3 x RBW
6. Detector = Peak
7. Trace mode = max hold
8. Sweep = auto couple
9. The trace was allowed to stabilize
10. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within
11. 1 – 5% of the 99% occupied bandwidth observed in Step 7

## 10.3 Measurement Setup



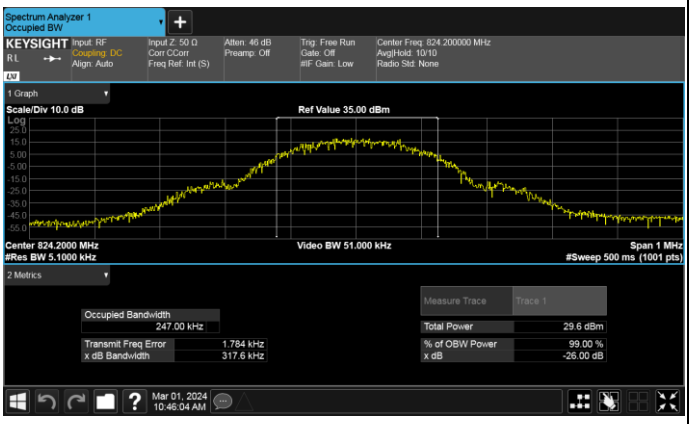
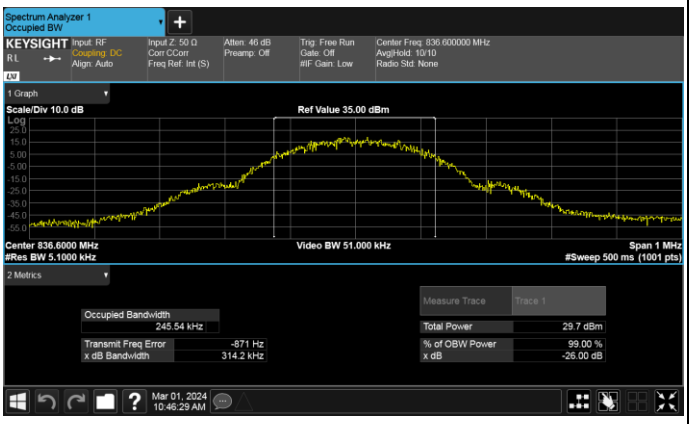
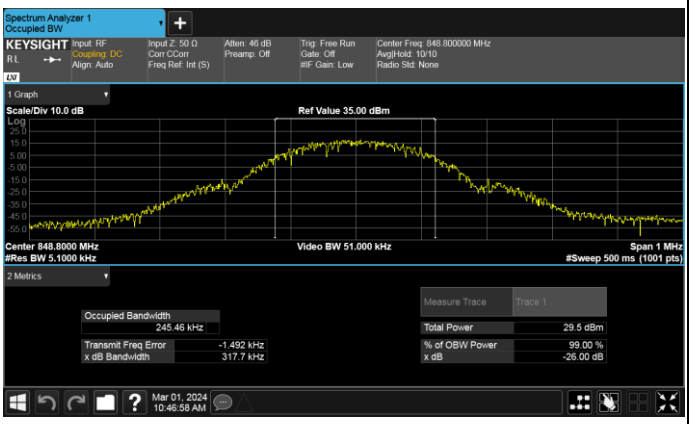
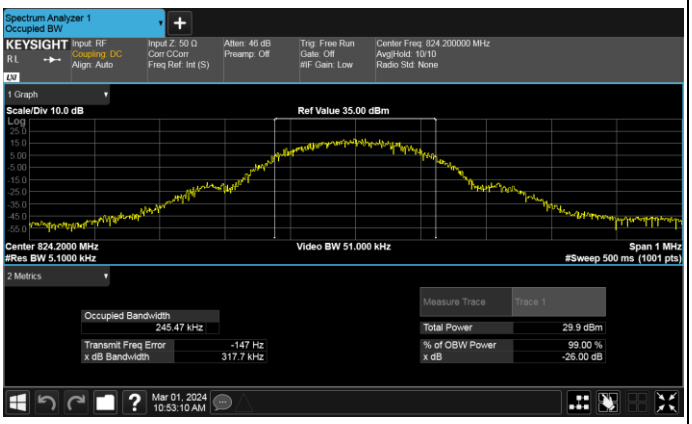
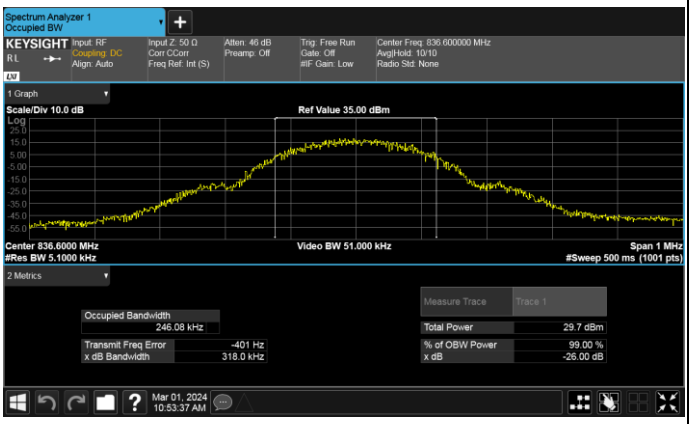
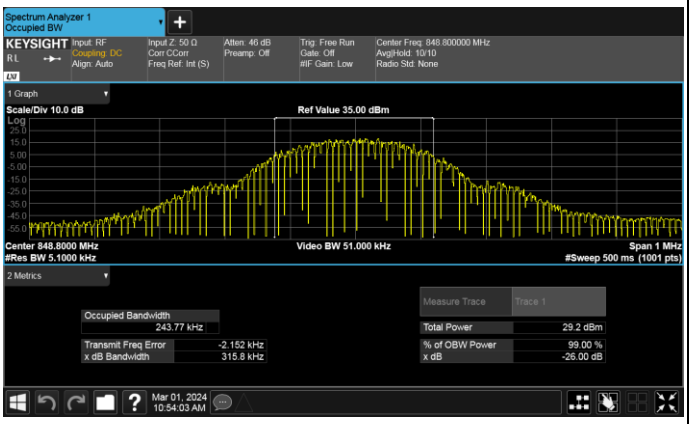
**10.4 Measurement Result**

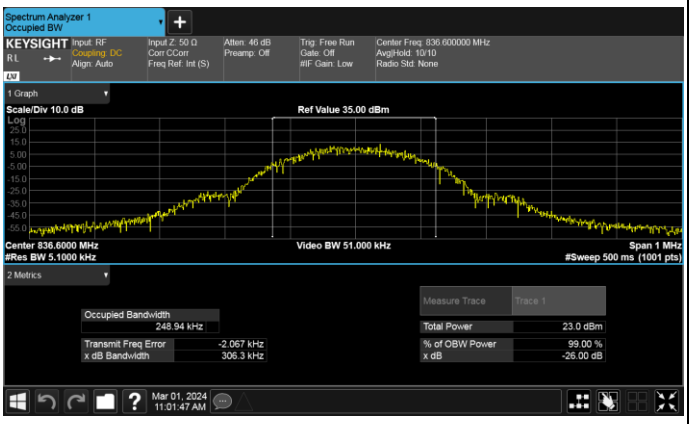
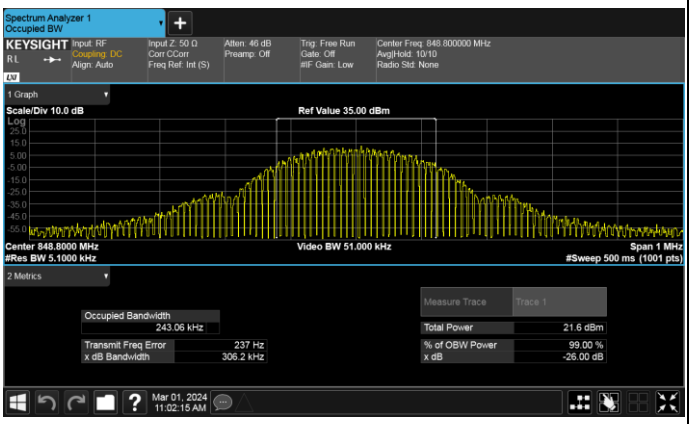
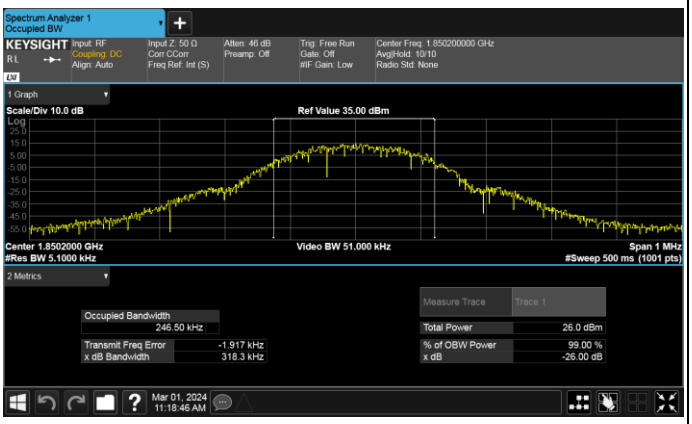
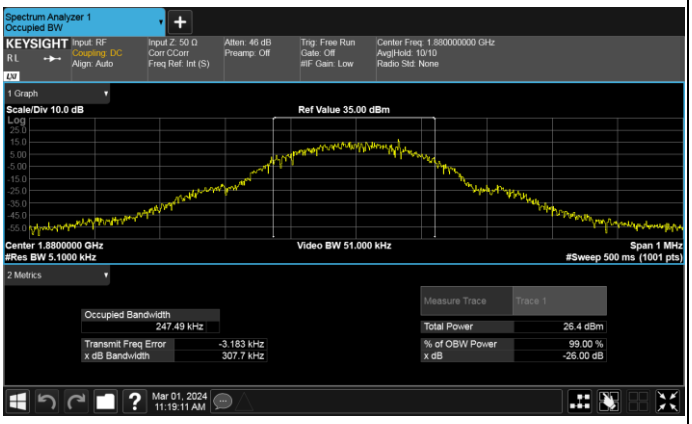
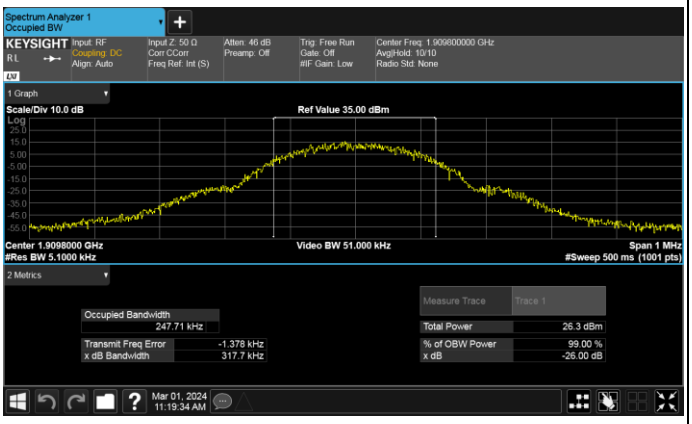
| Test Band | Test Mode | Test Channel | Occupied Bandwidth (kHz) | Emission Bandwidth (kHz) | Verdict |
|---|---|---|---|---|---|
| GSM 850 | GSM | 128 | 247.0 | 318 | Pass |
| | | 190 | 245.5 | 314 | Pass |
| | | 251 | 245.5 | 318 | Pass |
| | GPRS | 128 | 245.5 | 318 | Pass |
| | | 190 | 246.1 | 318 | Pass |
| | | 251 | 243.8 | 316 | Pass |
| | EDGE | 128 | 247.3 | 315 | Pass |
| | | 190 | 248.9 | 306 | Pass |
| | | 251 | 243.1 | 306 | Pass |

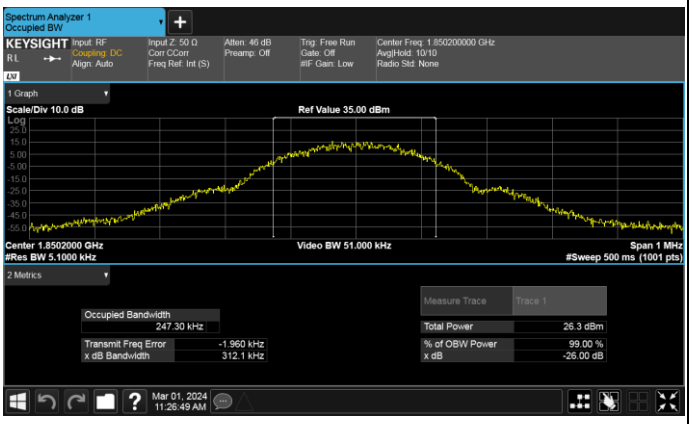
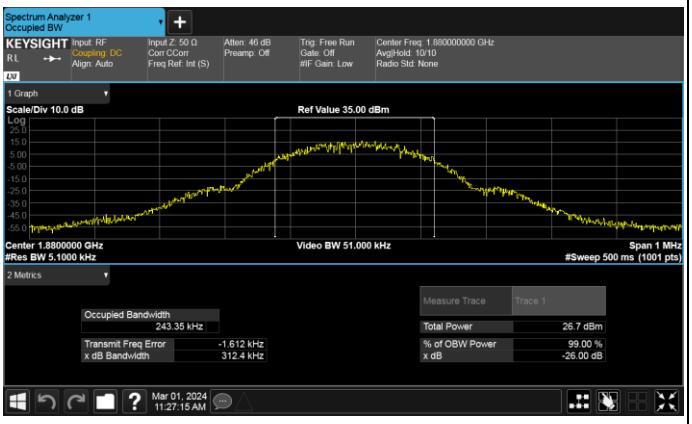
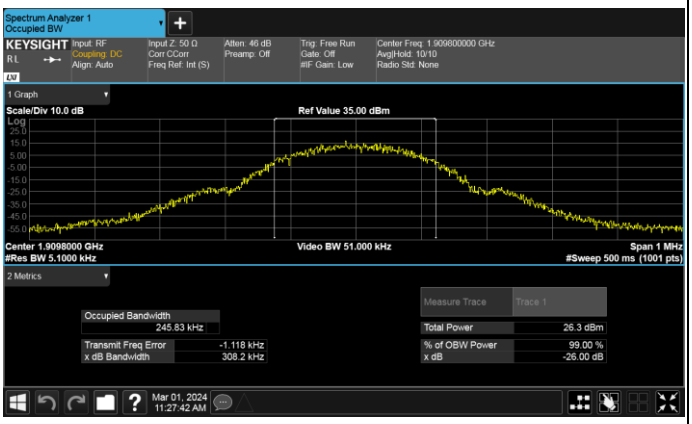
| Test Band | Test Mode | Test Channel | Occupied Bandwidth (kHz) | Emission Bandwidth (kHz) | Verdict |
|---|---|---|---|---|---|
| PCS 1900 | GSM | 512 | 246.5 | 318 | Pass |
| | | 661 | 247.5 | 308 | Pass |
| | | 810 | 247.7 | 318 | Pass |
| | GPRS | 512 | 247.3 | 312 | Pass |
| | | 661 | 243.4 | 312 | Pass |
| | | 810 | 245.8 | 308 | Pass |
| | EDGE | 512 | 243.8 | 314 | Pass |
| | | 661 | 248.5 | 316 | Pass |
| | | 810 | 249.9 | 314 | Pass |

| Test Band | Test Mode | Test Channel | Occupied Bandwidth (kHz) | Emission Bandwidth (kHz) | Verdict |
|---|---|---|---|---|---|
| WCDMA 850 | RMC 12.2kbps | 4132 | 4.2358 | 4.839 | Pass |
| | | 4183 | 4.1967 | 4.738 | Pass |
| | | 4233 | 4.3084 | 6.578 | Pass |
| | HSUPA | 4132 | 4.2049 | 4.754 | Pass |
| | | 4183 | 4.1939 | 4.724 | Pass |
| | | 4233 | 4.2303 | 4.782 | Pass |
| | HSDPA | 4132 | 4.1808 | 4.721 | Pass |
| | | 4183 | 4.1900 | 4.723 | Pass |
| | | 4233 | 4.1989 | 4.718 | Pass |

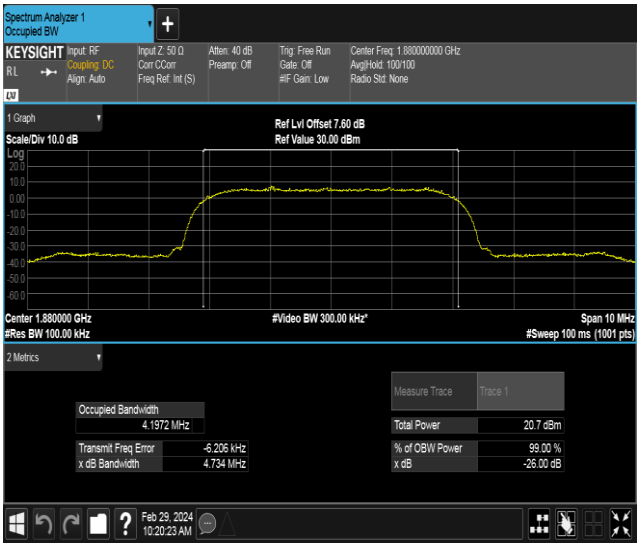
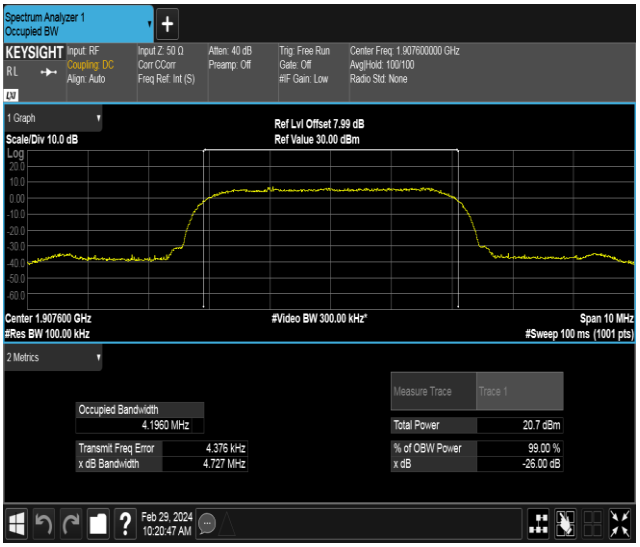
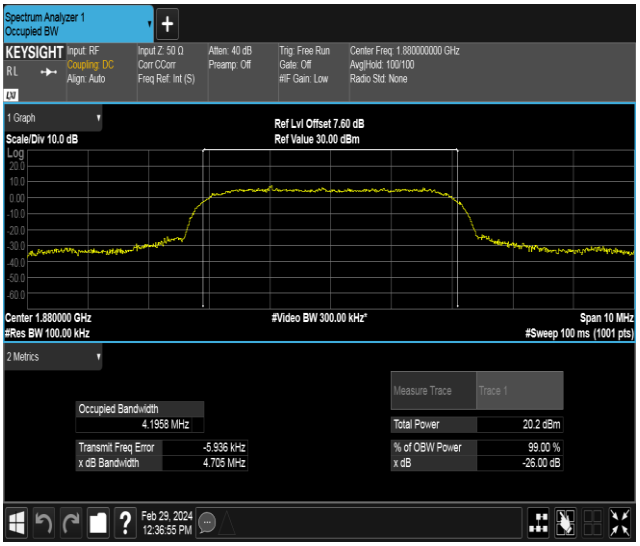
| Test Band | Test Mode | Test Channel | Occupied Bandwidth (kHz) | Emission Bandwidth (kHz) | Verdict |
|---|---|---|---|---|---|
| WCDMA 1900 | RMC 12.2kbps | 9262 | 4.1839 | 4.736 | Pass |
| | | 9400 | 4.1950 | 4.745 | Pass |
| | | 9538 | 4.1957 | 4.739 | Pass |
| | HSUPA | 9262 | 4.1903 | 4.720 | Pass |
| | | 9400 | 4.1972 | 4.734 | Pass |
| | | 9538 | 4.1960 | 4.727 | Pass |
| | HSDPA | 9262 | 4.1836 | 4.714 | Pass |
| | | 9400 | 4.1958 | 4.705 | Pass |
| | | 9538 | 4.2200 | 4.731 | Pass |

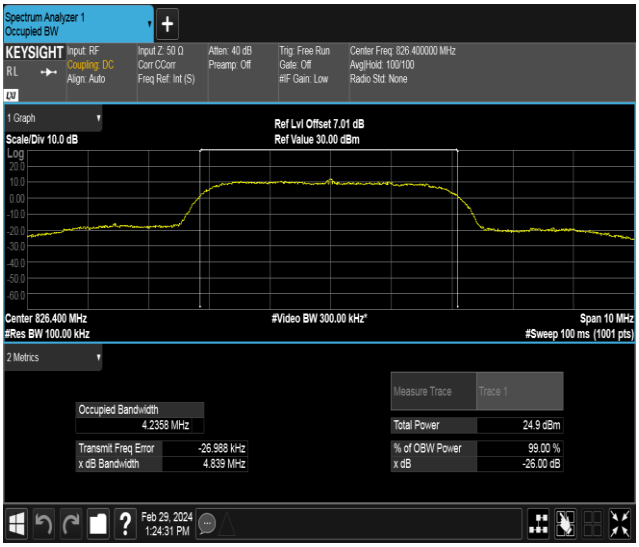
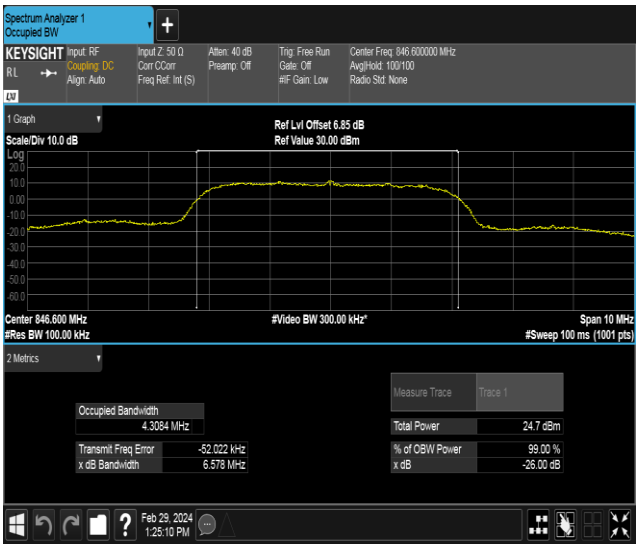
| GSM 850_CH 128_GSM | GSM 850_CH 190_GSM |
|---|---|
|  |  |
| **GSM 850_CH 251_GSM** | **GSM 850_CH 128_GPRS** |
|  |  |
| **GSM 850_CH 190_GPRS** | **GSM 850_CH 251_GPRS** |
|  |  |

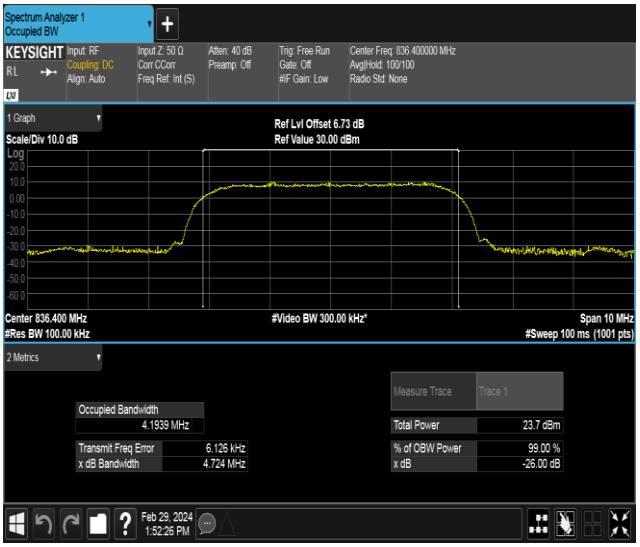
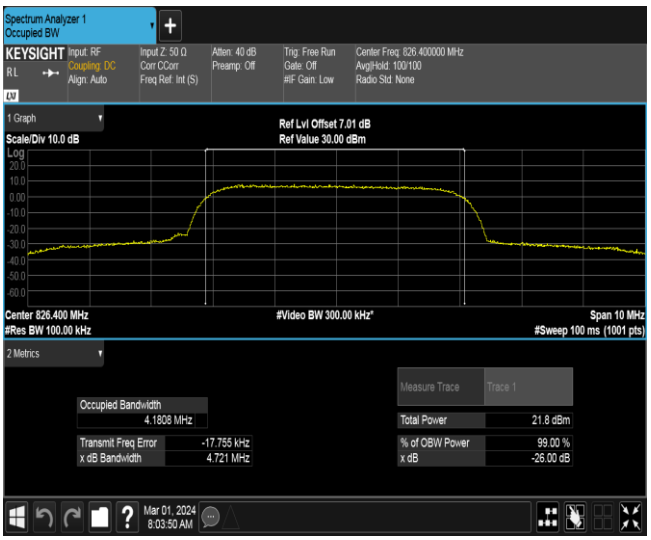
| GSM 850_CH 128_EDGE | GSM 850_CH 190_EDGE |
|---|---|
|  |  |
| **GSM 850_CH 251_EDGE** | **PCS 1900_CH 512_GSM** |
|  |  |
| **PCS 1900_CH 661_GSM** | **PCS 1900_CH 810_GSM** |
|  |  |

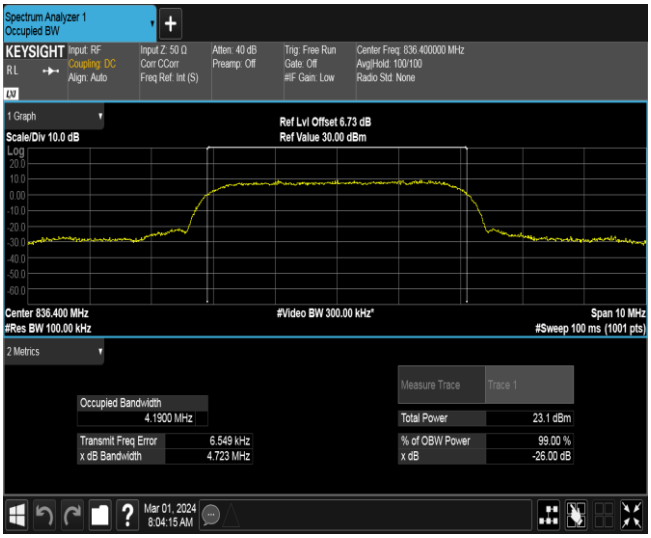
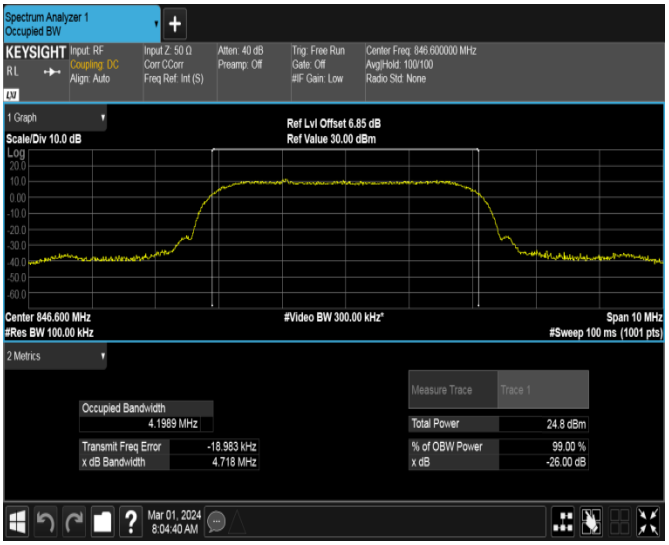
| PCS 1900_CH 512_GPRS | PCS 1900_CH 661_GPRS |
|---|---|
|  |  |
| **PCS 1900_CH 810_GPRS** | **PCS 1900_CH 512_EDGE** |
|  |  |
| **PCS 1900_CH 661_EDGE** | **PCS 1900_CH 810_EDGE** |
|  |  |

| WCDMA 1900_CH 9262_ RMC 12.2kbps | WCDMA 1900_CH 9400_ RMC 12.2kbps |
|---|---|
|  |  |
| **WCDMA 1900_CH 9538_ RMC 12.2kbps** | **WCDMA 1900_CH 9262_HSUPA** |
|  |  |

| WCDMA 1900_CH 9400_HSUPA | WCDMA 1900_CH 9538_HSUPA |
|---|---|
|  |  |
| **WCDMA 1900_CH 9262_HSDPA** | **WCDMA 1900_CH 9400_HSDPA** |
|  |  |

| WCDMA 1900_CH 9538_HSDPA | WCDMA 850_CH 4132_ RMC 12.2kbps |
|---|---|
|  |  |
| **WCDMA 850_CH 4183_ RMC 12.2kbps** | **WCDMA 850_CH 4233_ RMC 12.2kbps** |
|  |  |

| WCDMA 850_CH 4132_ HSUPA | WCDMA 850_CH 4183_ HSUPA |
|---|---|
|  |  |
| **WCDMA 850_CH 4233_ HSUPA** | **WCDMA 850_CH 4132_ HSDPA** |
|  |  |

| WCDMA 850_CH 4183_ HSDPA | WCDMA 850_CH 4233_ HSDPA |
|---|---|
|  |  |

# 11. Band Edge Emissions at Antenna Terminal

## 11.1 Provisions Applicable

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

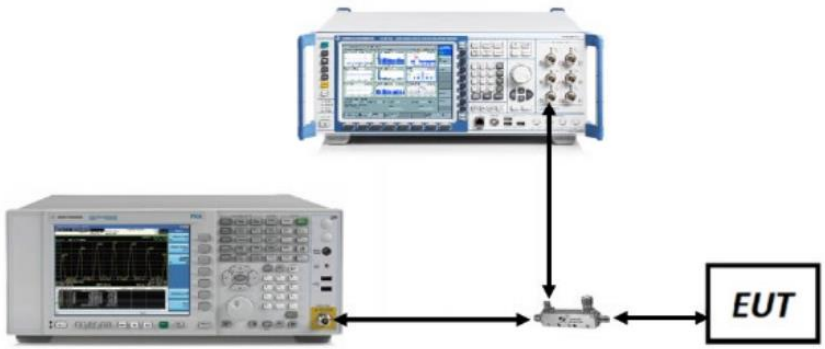
## 11.2 Measurement Procedure

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW > 1% of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize

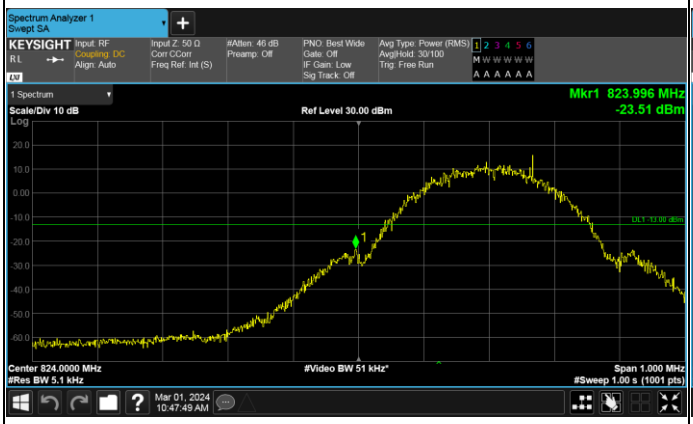
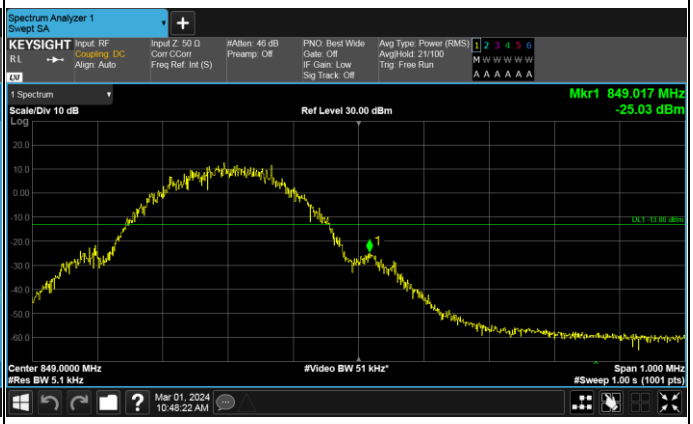
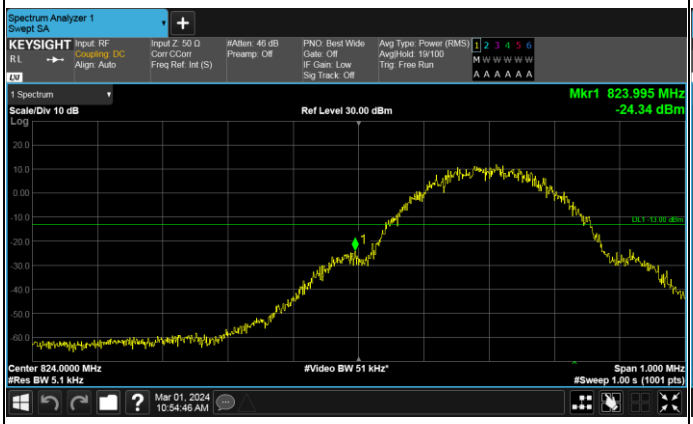
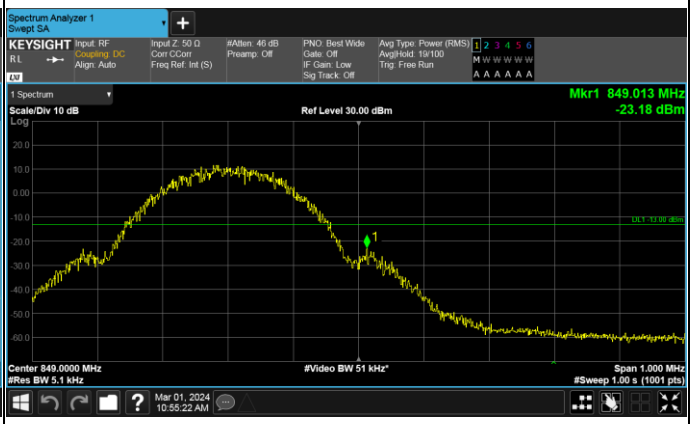
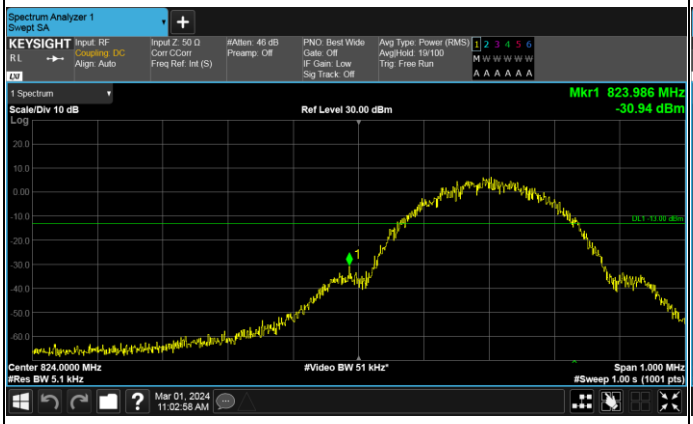
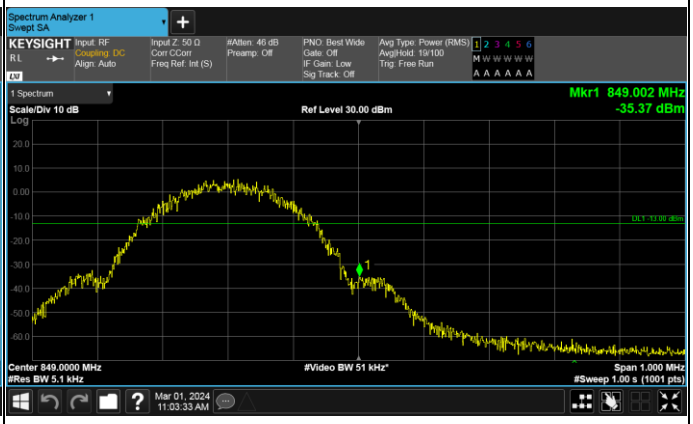
**Test Note**

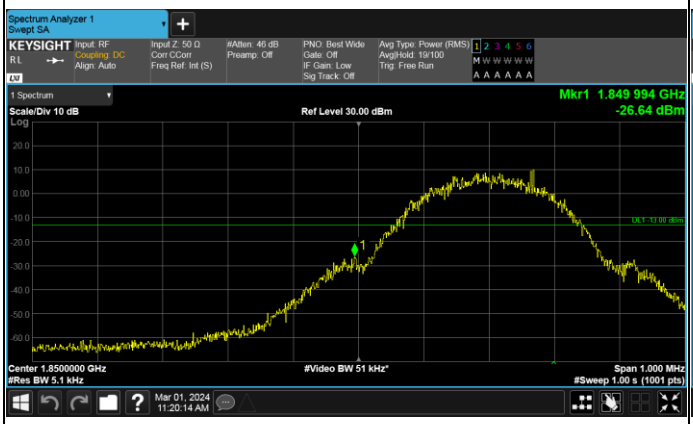
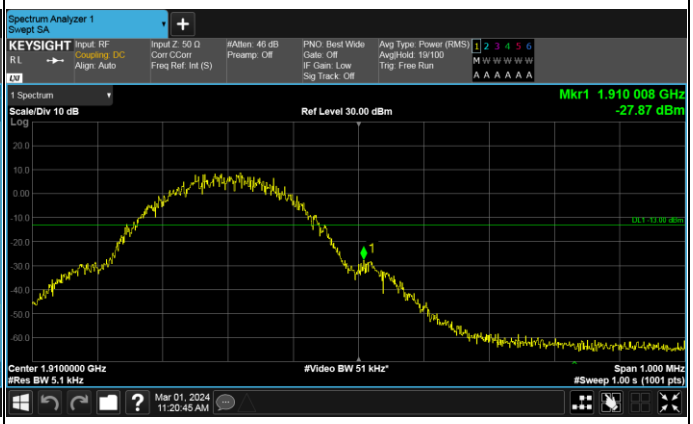
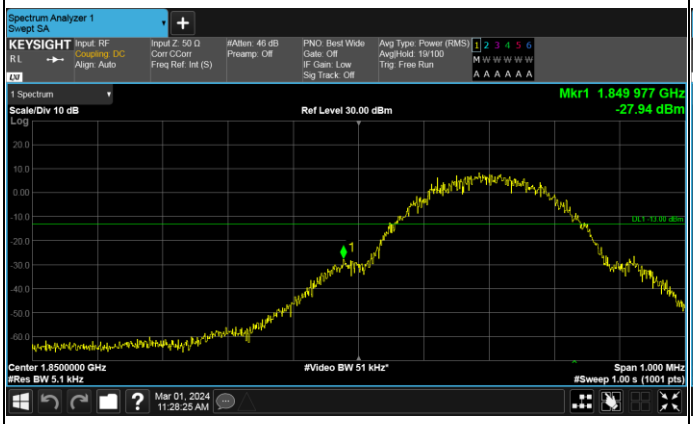
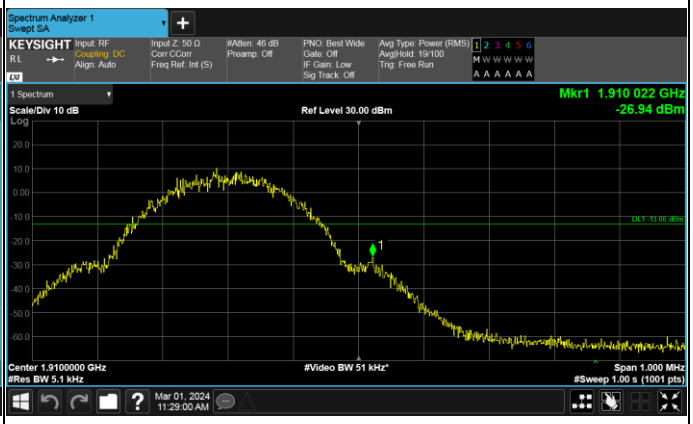
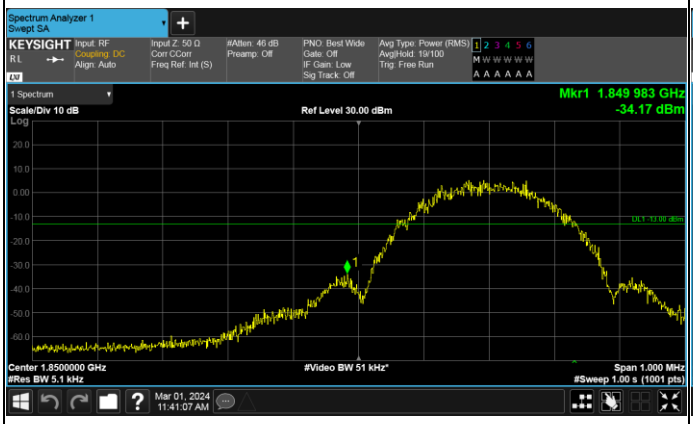
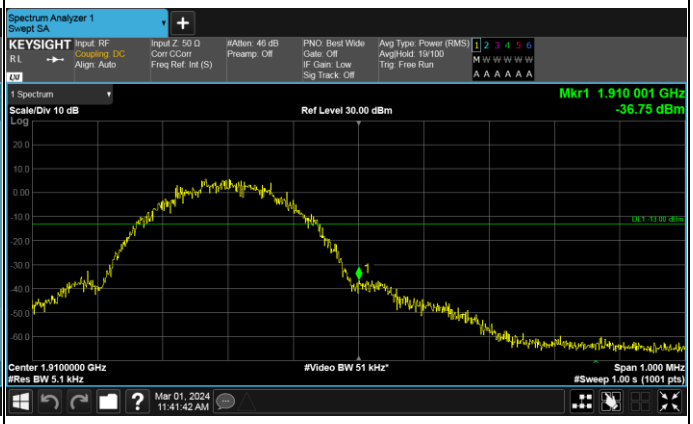
According to FCC 22.917, 24.238, 27.53 specified that power of any emission outside of The authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. All measurements were done at 2 channels(low and high operational frequency range.)
The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

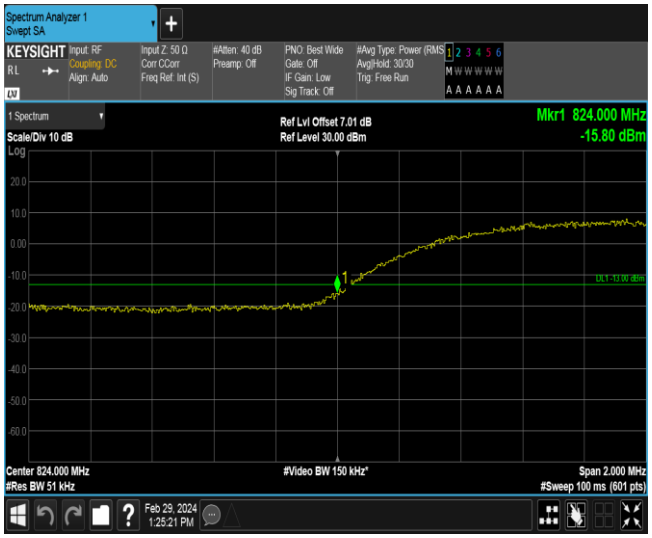
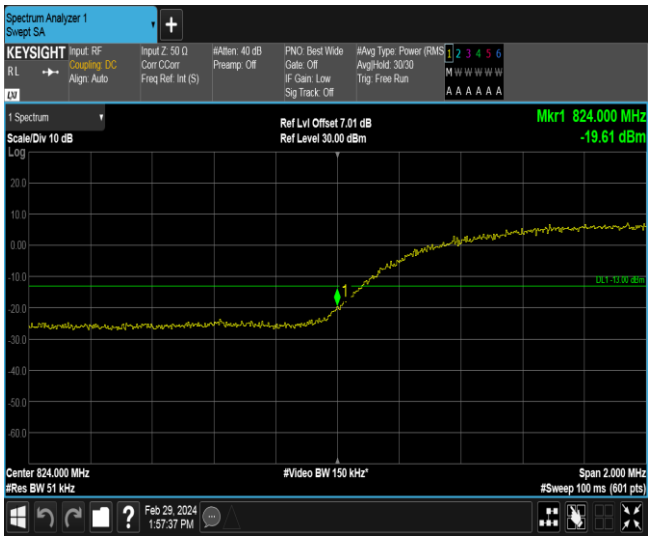
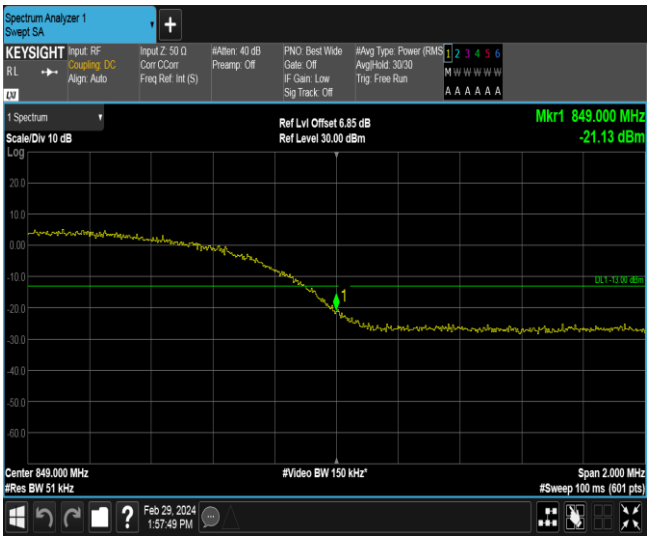
## 11.3 Measurement Setup

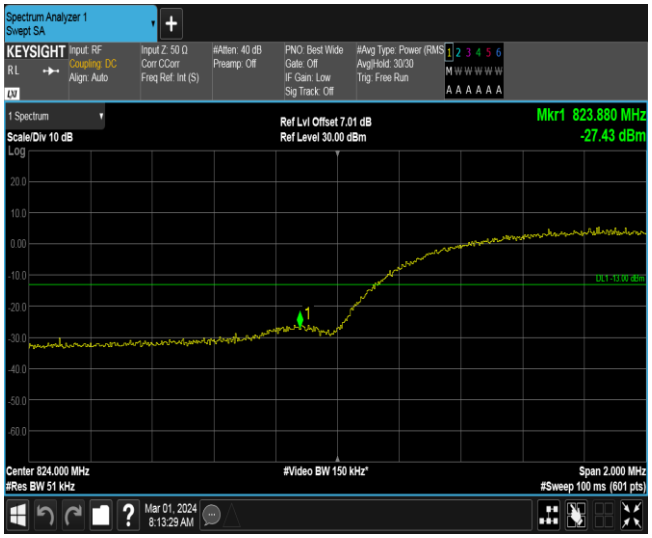
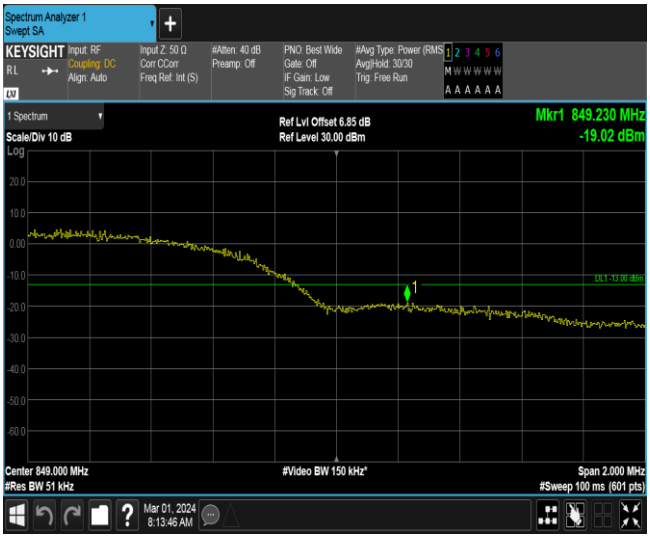
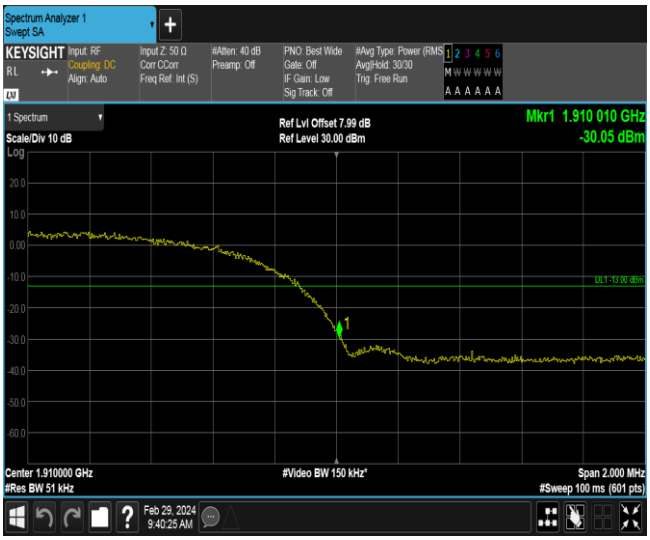


## 11.4 Measurement Result

| GSM 850_ Lowes Channel | GSM 850_ Highest Channel |
|---|---|
|  |  |
| **GPRS 850_ Lowes Channel** | **GPRS 850_ Highest Channel** |
|  |  |
| **EDGE 850_ Lowes Channel** | **EDGE 850_ Highest Channel** |
|  |  |

| PCS 1900_ Lowes Channel | PCS 1900 _ Highest Channel |
|---|---|
|  |  |
| **GPRS 1900_ Lowes Channel** | **GPRS 1900_ Highest Channel** |
|  |  |
| **EDGE 1900_ Lowes Channel** | **EDGE 1900_ Highest Channel** |
|  |  |

| WCDMA850_RMC 12.2kbps_ Lowes Channel | WCDMA850_RMC 12.2kbps_ Highest Channel |
|---|---|
|  |  |
| **WCDMA850_HSDPA_ Lowes Channel** | **WCDMA850_ HSDPA _ Highest Channel** |
|  |  |

| WCDMA850_HSUPA_ Lowes Channel | WCDMA850_ HSUPA _ Highest Channel |
|---|---|
|  |  |
| **WCDMA1900_RMC 12.2kbps_ Lowes Channel** | **WCDMA1900_RMC 12.2kbps_ Highest Channel** |
|  |  |