# FCC TEST REPORT

# (PART 22)

| | |
|---|---|
| Applicant: | Xiaomi Communications Co., Ltd. |
| Address: | #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085 |

| | |
|---|---|
| Manufacturer or Supplier: | Xiaomi Communications Co., Ltd. |
| Address: | #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085 |
| Product: | Mobile Phone |
| Brand Name: | Redmi |
| Model Name: | 2201117SG |
| FCC ID: | 2AFZZ117SG |
| Date of tests: | Nov. 01, 2021 ~ Nov. 29, 2021 |

The tests have been carried out according to the requirements of the following standard:

☒ **FCC PART 22, Subpart H** ☒ **FCC Part 2**
☒ **ANSI/TIA/EIA-603-D** ☒ **ANSI C63.26-2015**
☒ **ANSI/TIA/EIA-603-E**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

| Prepared by Simon Wang<br>Engineer / Mobile Department | Approved by Luke Lu<br>Manager / Mobile Department |
|---|---|
|  <br>Date: Nov. 29, 2021 |  <br>Date: Nov. 29, 2021 |

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# RELEASE CONTROL RECORD

| ISSUE NO. | REASON FOR CHANGE | DATE ISSUED |
|---|---|---|
| W7L-P21100026RF13 | Original release | Nov. 29, 2021 |

# 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC Part 22 & Part 2 | | |
|---|---|---|
| **STANDARD SECTION** | **TEST TYPE** | **RESULT** |
| 2.1046<br>22.913 (a) | Effective Radiated Power | Compliance |
| 2.1055<br>22.355 | Frequency Stability | Compliance |
| 2.1049<br>22.917 (b) | Occupied Bandwidth | Compliance |
| 22.913 (d) | Peak to average ratio* | Compliance |
| 22.917 | Band Edge Measurements | Compliance |
| 2.1051<br>22.917 | Conducted Spurious Emissions | Compliance |
| 2.1053<br>22.917 | Radiated Spurious Emissions | Compliance |

* Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01.

## 1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| MEASUREMENT | UNCERTAINTY |
|---|---|
| Maximum Peak Output Power | ±2.06dB |
| Frequency Stability | ±76.97Hz |
| Radiated emissions (30MHz~1GMHz) | ±4.98dB |
| Radiated emissions (1GMHz ~6GMHz) | ±4.70dB |
| Radiated emissions (6GMHz ~18GMHz) | ±4.60dB |
| Radiated emissions (18GMHz ~40GMHz) | ±4.12dB |
| Conducted emissions | ±4.01dB |
| Occupied Channel Bandwidth | ±43.58KHz |
| Band Edge Measurements | ±4.70dB |
| Peak to average ratio | ±0.76dB |

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

## 1.2 TEST SITE AND INSTRUMENTS

| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
|---|---|---|---|---|---|
| MXE EMI Receiver | KEYSIGHT | N9038A-544 | MY54450026 | Apr. 22,21 | Apr. 21,22 |
| EXA Signal Analyzer | KEYSIGHT | N9010A-544 | MY54510355 | Jun. 03,21 | Jun. 02,22 |
| Bilog Antenna 2 | ETS-LINDGREN | 3143B | 00161965 | Mar. 05,21 | Mar. 04,22 |
| Horn Antenna 1 | ETS-LINDGREN | 3117 | 00168728 | Aug. 19,21 | Aug. 18,22 |
| Horn Antenna 2 | ETS-LINDGREN | 3117 | 00168692 | Apr. 02,21 | Apr. 01,22 |
| Horn Antenna (18GHz-40GHz) | N/A | QWH-SL-18-40-K-SG/QMS-00361 | 15433 | Aug. 25, 21 | Aug. 24, 22 |
| Radio Communication Analyzer | ANRITSU | MT8820C | 6201465426 | Feb. 25,21 | Feb. 24,22 |
| Signal Pre-Amplifier | EMSI | EMC 9135 | 980249 | Jun. 02,21 | Jun. 01,22 |
| Signal Pre-Amplifier | EMSI | EMC 012645B | 980257 | Jun. 03,21 | Jun. 02,22 |
| Signal Pre-Amplifier | EMSI | EMC 184045B | 980259 | Apr. 22,21 | Apr. 21,22 |
| 3m Semi-anechoic Chamber | ETS-LINDGREN | 9m*6m*6m | Euroshieldpn-CT0001143-1216 | May. 19,20 | May. 18,23 |
| Test Software | E3 | V 9.160323 | N/A | N/A | N/A |
| Test Software | ADT | ADT_Radiated_V7.6.15.9.2 | N/A | N/A | N/A |
| 10dB Attenuator | JFW/USA | 50HF-010-SMA | 1505 | Jun. 03,21 | Jun. 02,22 |
| Power Meter | Anritsu | ML2495A | 1506002 | Apr. 07,21 | Apr. 06,22 |
| Power Sensor | Anritsu | MA2411B | 1339352 | May. 07,21 | May. 06,22 |
| Temperature Chamber | ESPEC | SH-242 | 93000855 | Jun. 02,21 | Jun. 01,22 |
| MXG Analog Microvave Signal Generator | KEYSIGHT | N5183A | MY50143024 | Mar. 05,21 | Mar. 04,22 |
| Power Divider | MCLI/USA | PS2-15 | 24880 | N/A | N/A |

**NOTE:** 1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.

3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

# 2 GENERAL INFORMATION

## 2.1 GENERAL DESCRIPTION OF EUT

| | | |
|---|---|---|
| **PRODUCT** | Mobile Phone | |
| **BRAND NAME** | Redmi | |
| **MODEL NAME** | 2201117SG | |
| **NOMINAL VOLTAGE** | 5.0V/9.0V/11.0V/12.0V/20.0Vdc(adapter or host equipment)<br>3.87Vdc (Li-ion, battery) | |
| **MODULATION TYPE** | **GSM/GPRS/EDGE** | GMSK, 8PSK |
| | **WCDMA** | QPSK |
| | **LTE** | QPSK, 16QAM, 64QAM |
| **FREQUENCY RANGE** | **GSM/GPRS/EDGE** | 824.2MHz ~ 848.8MHz |
| | **WCDMA** | 826.4MHz ~ 846.6MHz |
| | **LTE Band 5 (Channel Bandwidth: 1.4MHz)** | 824.7MHz ~ 848.3MHz |
| | **LTE Band 5 (Channel Bandwidth: 3MHz)** | 825.5MHz ~ 847.5MHz |
| | **LTE Band 5 (Channel Bandwidth: 5MHz)** | 826.5MHz ~ 846.5MHz |
| | **LTE Band 5 (Channel Bandwidth: 10MHz)** | 829MHz ~ 844MHz |
| **MAX. ERP POWER** | **GSM/GPRS** | 562.34mW |
| | **EDGE** | 121.62mW |
| | **WCDMA** | 76.74mW |
| | **LTE Band 5 (Channel Bandwidth: 1.4MHz)** | 72.61mW |
| | **LTE Band 5 (Channel Bandwidth: 3MHz)** | 71.45mW |
| | **LTE Band 5 (Channel Bandwidth: 5MHz)** | 71.45mW |
| | **LTE Band 5 (Channel Bandwidth: 10MHz)** | 72.11mW |
| **EMISSION DESIGNATORGOGN** | **GSM/GPRS** | 248KGXW |
| | **EDGE** | 244KGXW |
| | **WCDMA** | 4M19F9W |
| | **LTE Band 5 (Channel Bandwidth: 1.4MHz)** | QPSK: 1M11G7D |
| | | 16QAM: 1M12W7D |
| | | 64QAM: 1M12W7D |
| | **LTE Band 5 (Channel Bandwidth: 3MHz)** | QPSK: 2M73G7D |
| | | 16QAM: 2M74W7D |
| | | 64QAM: 2M73W7D |

| | | |
|---|---|---|
| | **LTE Band 5 (Channel Bandwidth: 5MHz)** | QPSK: 4M55G7D |
| | | 16QAM: 4M56W7D |
| | | 64QAM: 4M55W7D |
| | **LTE Band 5 (Channel Bandwidth: 10MHz)** | QPSK: 9M05G7D |
| | | 16QAM: 9M06W7D |
| | | 64QAM:9M07W7D |
| **ANTENNA TYPE** | Ant0:PIFA Antenna with -3.36dBi gain for GSM850/ WCDMA V/LTE B5<br>Ant1:Fixed Internal Antenna with -3.45dBi gain for GSM850/ WCDMA V/LTE B5 | |
| **HW VERSION** | P1.1 | |
| **SW VERSION** | MIUI12.5 | |
| **IMEI** | 868909050050825 | |
| **I/O PORTS** | Refer to user's manual | |
| **CABLE SUPPLIED** | USB1 cable: unshielded without ferrite, 1.0meter<br>USB2 cable: unshielded without ferrite, 1.0meter | |
| **EXTREME TEMPERATURE** | 0-40 ℃ | |
| **EXTREME VOLTAGE** | EUT 3.6V - EUT 4.2V | |

**NOTE**:

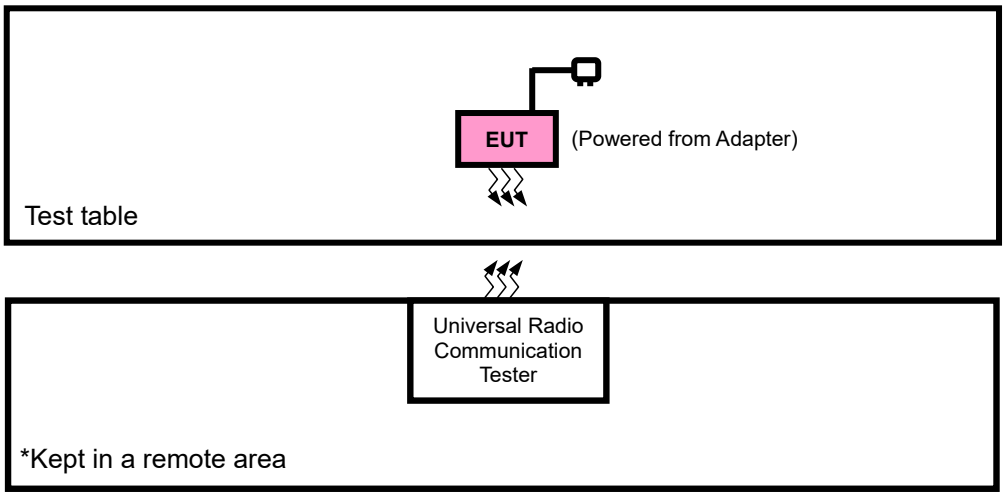
1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

| MODULATION MODE | TX FUNCTION |
|---|---|
| GSM/GPRS/EDGE | 1TX/1RX |
| WCDMA | 1TX/1RX |
| LTE | 1TX/1RX |

3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

## 2.2 CONFIGURATION OF SYSTEM UNDER TEST

### FOR RADIATION EMISSION



## 2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| NO. | PRODUCT | BRAND | MODEL NO. | SERIAL NO. | FCC ID |
|---|---|---|---|---|---|
| 1 | DC source | Kikusui/JP | PMX18-5A | 0000001 | N/A |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS |
|---|---|
| 1 | DC Line: Unshielded, Detachable 1.0m |

## 2.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports The worst case in ERP and radiated emission was found when positioned on X-plane for GSM /EDGE /LTE. Following channel(s) was (were) selected for the final test as listed below:

| EUT CONFIGURE MODE | DESCRIPTION |
|---|---|
| A | EUT + Adapter with GSM or WCDMA or LTE link |

## GSM MODE

| EUT CONFIGURE MODE | TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | MODE |
|---|---|---|---|---|
| A | ERP | 128 to 251 | 128, 189, 251 | GSM,EDGE |
| A | FREQUENCY STABILITY | 128 to 251 | 128, 251 | GSM,EDGE |
| A | OCCUPIED BANDWIDTH | 128 to 251 | 128, 189, 251 | GSM,EDGE |
| A | BAND EDGE | 128 to 251 | 128, 251 | GSM,EDGE |
| A | CONDCUDETED EMISSION | 128 to 251 | 128, 189, 251 | GSM,EDGE |
| A | RADIATED EMISSION | 128 to 251 | 128, 189, 251 | GSM,EDGE |
| A | PEAK TO AVERAGE RATIO | 128 to 251 | 128, 189, 251 | GSM,EDGE |

## WCDMA MODE

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| EUT CONFIGURE MODE | TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | MODE |
|---|---|---|---|---|
| A | ERP | 4132 to 4233 | 4132, 4182, 4233 | WCDMA |
| A | FREQUENCY STABILITY | 4132 to 4233 | 4132, 4233 | WCDMA |
| A | OCCUPIED BANDWIDTH | 4132 to 4233 | 4132, 4182, 4233 | WCDMA |
| A | BAND EDGE | 4132 to 4233 | 4132, 4182, 4233 | WCDMA |
| A | CONDCUDETED EMISSION | 4132 to 4233 | 4132, 4233 | WCDMA |
| A | RADIATED EMISSION | 4132 to 4233 | 4132, 4182, 4233 | WCDMA |
| A | PEAK TO AVERAGE RATIO | 4132 to 4233 | 4132, 4182, 4233 | WCDMA |

## LTE BAND 5 MODE

| TEST ITEM | Available Channel | Tested Channel | Channel bandwidth | modulation | mode |
|---|---|---|---|---|---|
| ERP | 20407 to 20643 | 20407, 20525, 20643 | 1.4MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | 20415 to 20635 | 20415, 20525, 20635 | 3MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | 20425 to 20625 | 20425, 20525, 20625 | 5MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | 20450 to 20600 | 20450, 20525, 20600 | 10MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| FREQUENCY STABILITY | 20407 to 20643 | 20407, 20643 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 20415 to 20635 | 20415, 20635 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 20425 to 20625 | 20425, 20625 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 20450 to 20600 | 20450, 20600 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| OCCUPIED BANDWIDTH | 20407 to 20643 | 20407, 20525, 20643 | 1.4MHz | QPSK,16QAM,64QAM | 6 RB / 0 RB Offset |
| | 20415 to 20635 | 20415, 20525, 20635 | 3MHz | QPSK,16QAM,64QAM | 15 RB / 0 RB Offset |
| | 20425 to 20625 | 20425, 20525, 20625 | 5MHz | QPSK,16QAM,64QAM | 25 RB / 0 RB Offset |
| | 20450 to 20600 | 20450, 20525, 20600 | 10MHz | QPSK,16QAM,64QAM | 50 RB / 0 RB Offset |
| BAND EDGE | 20407 to 20643 | 20407 | 1.4 MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | | | | | 6 RB / 0 RB Offset |
| | 20407 to 20643 | 20643 | 1.4 MHz | QPSK,16QAM,64QAM | 1 RB / 5 RB Offset |
| | | | | | 6 RB / 0 RB Offset |
| | 20415 to 20635 | 20415 | 3 MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | | | | | 15 RB / 0 RB Offset |
| | 20415 to 20635 | 20635 | 3 MHz | QPSK,16QAM,64QAM | 1 RB / 14 RB Offset |
| | | | | | 15 RB / 0 RB Offset |
| | 20425 to 20625 | 20425 | 5MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | | | | | 25 RB / 0 RB Offset |
| | 20425 to 20625 | 20625 | 5MHz | QPSK,16QAM,64QAM | 1 RB / 24 RB Offset |
| | | | | | 25 RB / 0 RB Offset |
| | 20450 to 20600 | 20450 | 10MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | | | | | 50 RB / 0 RB Offset |
| | 20450 to 20600 | 20600 | 10MHz | QPSK,16QAM,64QAM | 1 RB / 49 RB Offset |
| | | | | | 50 RB / 0 RB Offset |

| | | | | | |
|---|---|---|---|---|---|
| CONDCUDETED EMISSION | 20407 to 20643 | 20407, 20525, 20643 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 20415 to 20635 | 20415, 20525, 20635 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 20425 to 20625 | 20425, 20525, 20625 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 20450 to 20600 | 20450, 20525, 20600 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| RADIATED EMISSION | 20407 to 20643 | 20525 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | 20415 to 20635 | 20415, 20525, 20635 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | 20425 to 20625 | 20525 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | 20450 to 20600 | 20525 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| PEAK TO AVERAGE RATIO | 20407 to 20643 | 20407, 20525, 20643 | 1.4MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | 20415 to 20635 | 20415, 20525, 20635 | 3MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | 20425 to 20625 | 20425, 20525, 20625 | 5MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | 20450 to 20600 | 20450, 20525, 20600 | 10MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |

**Note:** This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

**TEST CONDITION:**

| TEST ITEM | ENVIRONMENTAL CONDITIONS | INPUT POWER | TESTED BY |
|---|---|---|---|
| ERP | 23deg. C, 70%RH | DC 5V/9V/11V/12V/20V By Adapter | Jace Hu |
| FREQUENCY STABILITY | 23deg. C, 70%RH | DC 5V/9V/11V/12V/20V By Adapter | James Fu |
| OCCUPIED BANDWIDTH | 23deg. C, 70%RH | DC 5V/9V/11V/12V/20V By Adapter | James Fu |
| BAND EDGE | 23deg. C, 70%RH | DC 5V/9V/11V/12V/20V By Adapter | James Fu |
| CONDCUDETED EMISSION | 23deg. C, 70%RH | DC 5V/9V/11V/12V/20V By Adapter | James Fu |
| RADIATED EMISSION | 23deg. C, 70%RH | DC 5V/9V/11V/12V/20V By Adapter | Jace Hu |
| PEAK TO AVERAGE RATIO | 23deg. C, 70%RH | DC 3.87 By Battery | James Fu |

## 2.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

## 2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 22**

**KDB 971168 D01 Power Meas License Digital Systems v03r01**

**ANSI/TIA/EIA-603-D**

**ANSI/TIA/EIA-603-E**

**ANSI C63.26-2015**

**NOTE:** All test items have been performed and recorded as per the above standards.

# 3 TEST TYPES AND RESULTS

## 3.1 OUTPUT POWER MEASUREMENT

### 3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile / Portable station are limited to 7 watts e.r.p.

### 3.1.2 TEST PROCEDURES

**EIRP / ERP MEASUREMENT:**

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determing the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

ERP or EIRP = $P_{Meas} + G_T – L_C$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as $P_{Meas}$, typically dBW or dBm);

$P_{Meas}$ = measured transmitter output power or PSD, in dBm or dBW;

$G_T$ = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

$L_C$ = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

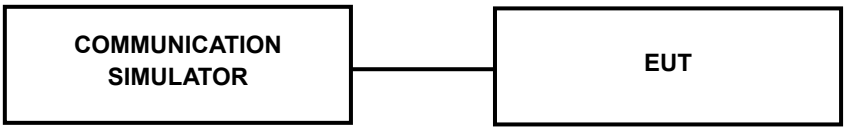
**CONDUCTED POWER MEASUREMENT:**

The EUT was set up for the maximum power with WCDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

## 3.1.3 TEST SETUP

**EIRP / ERP Measurement:**

**CONDUCTED POWER MEASUREMENT:**




## 3.1.4 TEST RESULTS

**CONDUCTED OUTPUT POWER (dBm)**

**Ant0:**

| Band | GSM850 | | | Max. Tune-up Power |
|---|---|---|---|---|
| Channel | 128 | 189 | 251 | |
| Frequency | 824.2 | 836.4 | 848.8 | |
| GSM (GMSK, 1Tx-slot) | 32.82 | 33.01 | 32.93 | 33.50 |
| GPRS (GMSK, 1Tx-slot) | 32.80 | 32.98 | 32.91 | 33.50 |
| GPRS (GMSK, 2Tx-slot) | 30.82 | 30.98 | 30.79 | 31.00 |
| GPRS (GMSK, 3Tx-slot) | 29.07 | 29.19 | 29.00 | 29.50 |
| GPRS (GMSK, 4Tx-slot) | 27.17 | 27.32 | 27.08 | 27.50 |
| EDGE (8PSK, 1Tx-slot) | 26.30 | 26.24 | 26.29 | 28.00 |
| EDGE (8PSK, 2Tx-slot) | 23.79 | 23.78 | 23.75 | 25.50 |
| EDGE (8PSK, 3Tx-slot) | 22.30 | 22.26 | 22.18 | 24.00 |
| EDGE (8PSK, 4Tx-slot) | 21.02 | 21.04 | 20.87 | 22.50 |

| Band | WCDMA V | | | Max. Tune-up Power |
|---|---|---|---|---|
| Channel | 4132 | 4182 | 4233 | |
| Frequency | 826.4 | 836.4 | 846.6 | |
| RMC 12.2K | **24.19** | **24.08** | **24.06** | **25.50** |
| HSDPA Subtest-1 | 23.22 | 23.15 | 23.12 | 24.50 |
| HSDPA Subtest-2 | 23.20 | 23.12 | 23.09 | 24.50 |
| HSDPA Subtest-3 | 22.75 | 22.77 | 22.67 | 24.50 |
| HSDPA Subtest-4 | 22.73 | 22.74 | 22.65 | 24.50 |
| DC-HSDPA Subtest-1 | 23.20 | 23.14 | 23.10 | 25.00 |
| DC-HSDPA Subtest-2 | 23.18 | 23.12 | 23.09 | 25.00 |
| DC-HSDPA Subtest-3 | 22.76 | 22.71 | 22.65 | 24.50 |
| DC-HSDPA Subtest-4 | 22.74 | 22.70 | 22.65 | 24.50 |
| HSUPA Subtest-1 | 21.43 | 21.36 | 21.35 | 23.00 |
| HSUPA Subtest-2 | 21.75 | 21.81 | 21.83 | 23.00 |
| HSUPA Subtest-3 | 22.15 | 22.07 | 22.11 | 24.00 |
| HSUPA Subtest-4 | 21.32 | 21.28 | 21.29 | 22.50 |
| HSUPA Subtest-5 | 22.50 | 22.40 | 22.38 | 24.00 |

**LTE Band 5**

| Band/BW | Modulation | RB Size | RB Offset | Low CH 20407 | Mid CH 20525 | High CH 20643 | MPR |
|---|---|---|---|---|---|---|---|
| | | | | Frequency 824.7 MHz | Frequency 836.5 MHz | Frequency 848.3 MHz | |
| 5/ 1.4 | QPSK | 1 | 0 | 23.89 | 23.99 | 23.95 | 0 |
| | | 1 | 2 | 23.95 | 23.94 | 23.99 | 0 |
| | | 1 | 5 | 23.91 | 23.91 | 23.95 | 0 |
| | | 3 | 0 | 23.82 | 23.87 | 23.88 | 0 |
| | | 3 | 1 | 23.98 | 24.12 | 23.97 | 0 |
| | | 3 | 3 | 23.93 | 23.97 | 23.98 | 0 |
| | | 6 | 0 | 22.91 | 22.98 | 22.94 | 1 |
| | 16QAM | 1 | 0 | 23.17 | 23.25 | 23.25 | 1 |
| | | 1 | 2 | 23.16 | 23.24 | 23.22 | 1 |
| | | 1 | 5 | 23.13 | 23.12 | 23.20 | 1 |
| | | 3 | 0 | 22.86 | 22.95 | 22.88 | 1 |
| | | 3 | 1 | 22.89 | 23.08 | 22.95 | 1 |
| | | 3 | 3 | 22.89 | 22.98 | 23.00 | 1 |
| | | 6 | 0 | 21.86 | 21.97 | 21.91 | 2 |
| | 64QAM | 1 | 0 | 22.03 | 22.15 | 22.16 | 2 |
| | | 1 | 2 | 22.04 | 22.24 | 22.12 | 2 |
| | | 1 | 5 | 22.03 | 22.12 | 22.12 | 2 |
| | | 3 | 0 | 21.77 | 21.86 | 21.76 | 2 |
| | | 3 | 1 | 21.90 | 22.09 | 21.99 | 2 |
| | | 3 | 3 | 21.90 | 21.94 | 21.93 | 2 |
| | | 6 | 0 | 20.87 | 20.98 | 20.92 | 3 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 20415<br>Frequency 825.5 MHz | Mid CH 20525<br>Frequency 836.5 MHz | High CH 20635<br>Frequency 847.5 MHz | MPR |
|---|---|---|---|---|---|---|---|
| 5/ 3 | QPSK | 1 | 0 | 23.91 | 24.01 | 23.94 | 0 |
| | | 1 | 7 | 23.91 | 23.95 | 23.99 | 0 |
| | | 1 | 14 | 23.87 | 23.91 | 23.95 | 0 |
| | | 8 | 0 | 22.81 | 22.90 | 22.88 | 1 |
| | | 8 | 3 | 22.91 | 23.12 | 22.99 | 1 |
| | | 8 | 7 | 22.90 | 23.04 | 23.02 | 1 |
| | | 15 | 0 | 22.88 | 22.99 | 22.88 | 1 |
| | 16QAM | 1 | 0 | 23.14 | 23.31 | 23.28 | 1 |
| | | 1 | 7 | 23.13 | 23.27 | 23.20 | 1 |
| | | 1 | 14 | 23.16 | 23.12 | 23.20 | 1 |
| | | 8 | 0 | 21.82 | 21.96 | 21.88 | 2 |
| | | 8 | 3 | 21.94 | 22.03 | 21.98 | 2 |
| | | 8 | 7 | 21.91 | 21.96 | 21.96 | 2 |
| | | 15 | 0 | 21.86 | 21.91 | 21.94 | 2 |
| | 64QAM | 1 | 0 | 22.09 | 22.18 | 22.10 | 2 |
| | | 1 | 7 | 22.07 | 22.18 | 22.11 | 2 |
| | | 1 | 14 | 22.04 | 22.14 | 22.12 | 2 |
| | | 8 | 0 | 20.80 | 20.90 | 20.77 | 3 |
| | | 8 | 3 | 20.94 | 21.03 | 21.04 | 3 |
| | | 8 | 7 | 20.87 | 20.98 | 20.89 | 3 |
| | | 15 | 0 | 20.89 | 20.95 | 20.96 | 3 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 20425 Frequency 826.5 MHz | Mid CH 20525 Frequency 836.5 MHz | High CH 20625 Frequency 846.5 MHz | MPR |
|---|---|---|---|---|---|---|---|
| 5/ 5 | QPSK | 1 | 0 | 23.92 | 23.96 | 23.95 | 0 |
| | | 1 | 12 | 23.96 | 23.92 | 23.99 | 0 |
| | | 1 | 24 | 23.88 | 23.90 | 23.99 | 0 |
| | | 12 | 0 | 22.84 | 22.90 | 22.85 | 1 |
| | | 12 | 6 | 22.91 | 23.13 | 23.00 | 1 |
| | | 12 | 13 | 22.94 | 23.00 | 23.03 | 1 |
| | | 25 | 0 | 22.86 | 23.02 | 22.91 | 1 |
| | 16QAM | 1 | 0 | 23.15 | 23.27 | 23.28 | 1 |
| | | 1 | 12 | 23.10 | 23.30 | 23.19 | 1 |
| | | 1 | 24 | 23.16 | 23.12 | 23.19 | 1 |
| | | 12 | 0 | 21.82 | 21.94 | 21.85 | 2 |
| | | 12 | 6 | 21.91 | 22.07 | 21.94 | 2 |
| | | 12 | 13 | 21.86 | 21.98 | 21.99 | 2 |
| | | 25 | 0 | 21.86 | 21.92 | 21.91 | 2 |
| | 64QAM | 1 | 0 | 22.03 | 22.15 | 22.16 | 2 |
| | | 1 | 12 | 22.04 | 22.24 | 22.11 | 2 |
| | | 1 | 24 | 21.97 | 22.19 | 22.12 | 2 |
| | | 12 | 0 | 20.81 | 20.87 | 20.76 | 3 |
| | | 12 | 6 | 20.88 | 21.10 | 21.03 | 3 |
| | | 12 | 13 | 20.91 | 20.97 | 20.86 | 3 |
| | | 25 | 0 | 20.85 | 21.01 | 20.94 | 3 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 20450 Frequency 829 MHz | Mid CH 20525 Frequency 836.5 MHz | High CH 20600 Frequency 844 MHz | MPR |
|---|---|---|---|---|---|---|---|
| 5/ 10 | QPSK | 1 | 0 | 23.97 | 24.03 | 24.00 | 0 |
| | | 1 | 24 | 23.98 | 24.00 | 24.01 | 0 |
| | | 1 | 49 | 23.93 | 23.98 | 24.00 | 0 |
| | | 25 | 0 | 22.88 | 22.95 | 22.90 | 1 |
| | | 25 | 12 | 22.99 | 23.14 | 23.05 | 1 |
| | | 25 | 25 | 22.98 | 23.05 | 23.04 | 1 |
| | | 50 | 0 | 22.92 | 23.04 | 22.96 | 1 |
| | 16QAM | 1 | 0 | 23.22 | 23.32 | 23.30 | 1 |
| | | 1 | 24 | 23.18 | 23.32 | 23.24 | 1 |
| | | 1 | 49 | 23.18 | 23.20 | 23.21 | 1 |
| | | 25 | 0 | 21.90 | 22.00 | 21.93 | 2 |
| | | 25 | 12 | 21.97 | 22.09 | 22.00 | 2 |
| | | 25 | 25 | 21.93 | 22.03 | 22.01 | 2 |
| | | 50 | 0 | 21.92 | 21.99 | 21.96 | 2 |
| | 64QAM | 1 | 0 | 22.10 | 22.20 | 22.18 | 2 |
| | | 1 | 24 | 22.12 | 22.26 | 22.17 | 2 |
| | | 1 | 49 | 22.05 | 22.20 | 22.14 | 2 |
| | | 25 | 0 | 20.85 | 20.92 | 20.84 | 3 |
| | | 25 | 12 | 20.96 | 21.11 | 21.05 | 3 |
| | | 25 | 25 | 20.95 | 21.02 | 20.94 | 3 |
| | | 50 | 0 | 20.91 | 21.03 | 20.97 | 3 |

**Ant1:**

| Band | GSM850 | | | Max. Tune-up Power |
|---|---|---|---|---|
| Channel | 128 | 189 | 251 | |
| Frequency | 824.2 | 836.4 | 848.8 | |
| GSM (GMSK, 1Tx-slot) | 32.61 | 32.73 | 32.58 | 33.50 |
| GPRS (GMSK, 1Tx-slot) | 32.59 | 32.70 | 32.56 | 33.50 |
| GPRS (GMSK, 2Tx-slot) | 30.87 | 30.98 | 30.84 | 31.00 |
| GPRS (GMSK, 3Tx-slot) | 29.25 | 29.37 | 29.29 | 29.50 |
| GPRS (GMSK, 4Tx-slot) | 27.38 | 27.52 | 27.28 | 27.50 |
| EDGE (8PSK, 1Tx-slot) | 26.40 | 26.45 | 26.41 | 28.00 |
| EDGE (8PSK, 2Tx-slot) | 23.93 | 23.97 | 24.01 | 25.50 |
| EDGE (8PSK, 3Tx-slot) | 22.41 | 22.35 | 22.42 | 24.00 |
| EDGE (8PSK, 4Tx-slot) | 21.13 | 21.11 | 20.94 | 22.50 |

| Band | WCDMA V | | | Max. Tune-up Power |
|---|---|---|---|---|
| Channel | 4132 | 4182 | 4233 | |
| Frequency | 826.4 | 836.4 | 846.6 | |
| RMC 12.2K | **24.45** | **24.38** | **24.41** | **25.50** |
| HSDPA Subtest-1 | 23.49 | 23.39 | 23.40 | 24.50 |
| HSDPA Subtest-2 | 23.48 | 23.35 | 23.34 | 24.50 |
| HSDPA Subtest-3 | 22.99 | 22.99 | 22.95 | 24.50 |
| HSDPA Subtest-4 | 23.02 | 23.02 | 22.87 | 24.50 |
| DC-HSDPA Subtest-1 | 23.45 | 23.36 | 23.34 | 25.00 |
| DC-HSDPA Subtest-2 | 23.47 | 23.36 | 23.37 | 25.00 |
| DC-HSDPA Subtest-3 | 23.01 | 22.99 | 22.88 | 24.50 |
| DC-HSDPA Subtest-4 | 23.02 | 22.92 | 22.93 | 24.50 |
| HSUPA Subtest-1 | 21.65 | 21.60 | 21.57 | 23.00 |
| HSUPA Subtest-2 | 21.99 | 22.09 | 22.07 | 23.00 |
| HSUPA Subtest-3 | 22.40 | 22.29 | 22.40 | 24.00 |
| HSUPA Subtest-4 | 21.58 | 21.53 | 21.54 | 22.50 |
| HSUPA Subtest-5 | 22.74 | 22.68 | 22.63 | 24.00 |

**LTE Band 5**

| Band/BW | Modulation | RB Size | RB Offset | Low CH 20407 | Mid CH 20525 | High CH 20643 | MPR |
|---|---|---|---|---|---|---|---|
| | | | | Frequency 824.7 MHz | Frequency 836.5 MHz | Frequency 848.3 MHz | |
| 5/ 1.4 | QPSK | 1 | 0 | 24.04 | 24.12 | 24.09 | 0 |
| | | 1 | 2 | 24.13 | 24.12 | 24.14 | 0 |
| | | 1 | 5 | 24.06 | 24.04 | 24.09 | 0 |
| | | 3 | 0 | 24.00 | 24.03 | 24.05 | 0 |
| | | 3 | 1 | 24.04 | 24.16 | 24.02 | 0 |
| | | 3 | 3 | 24.11 | 24.13 | 24.15 | 0 |
| | | 6 | 0 | 23.07 | 23.12 | 23.09 | 1 |
| | 16QAM | 1 | 0 | 23.30 | 23.36 | 23.37 | 1 |
| | | 1 | 2 | 23.33 | 23.39 | 23.38 | 1 |
| | | 1 | 5 | 23.28 | 23.25 | 23.34 | 1 |
| | | 3 | 0 | 22.91 | 22.98 | 22.92 | 1 |
| | | 3 | 1 | 23.03 | 23.20 | 23.08 | 1 |
| | | 3 | 3 | 23.04 | 23.11 | 23.14 | 1 |
| | | 6 | 0 | 22.02 | 22.11 | 22.06 | 2 |
| | 64QAM | 1 | 0 | 22.18 | 22.28 | 22.30 | 2 |
| | | 1 | 2 | 22.21 | 22.39 | 22.28 | 2 |
| | | 1 | 5 | 22.21 | 22.28 | 22.29 | 2 |
| | | 3 | 0 | 21.92 | 21.99 | 21.90 | 2 |
| | | 3 | 1 | 22.04 | 22.21 | 22.12 | 2 |
| | | 3 | 3 | 21.95 | 21.97 | 21.97 | 2 |
| | | 6 | 0 | 21.03 | 21.12 | 21.07 | 3 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 20415<br>Frequency 825.5 MHz | Mid CH 20525<br>Frequency 836.5 MHz | High CH 20635<br>Frequency 847.5 MHz | MPR |
|---|---|---|---|---|---|---|---|
| 5/ 3 | QPSK | 1 | 0 | 24.06 | 24.14 | 24.08 | 0 |
| | | 1 | 7 | 24.09 | 24.13 | 24.14 | 0 |
| | | 1 | 14 | 24.02 | 24.04 | 24.09 | 0 |
| | | 8 | 0 | 22.99 | 23.06 | 23.05 | 1 |
| | | 8 | 3 | 23.07 | 23.26 | 23.14 | 1 |
| | | 8 | 7 | 23.08 | 23.20 | 23.19 | 1 |
| | | 15 | 0 | 23.04 | 23.13 | 23.03 | 1 |
| | 16QAM | 1 | 0 | 23.27 | 23.42 | 23.40 | 1 |
| | | 1 | 7 | 23.30 | 23.42 | 23.36 | 1 |
| | | 1 | 14 | 23.31 | 23.25 | 23.34 | 1 |
| | | 8 | 0 | 21.87 | 21.99 | 21.92 | 2 |
| | | 8 | 3 | 22.08 | 22.15 | 22.11 | 2 |
| | | 8 | 7 | 22.06 | 22.09 | 22.10 | 2 |
| | | 15 | 0 | 22.02 | 22.05 | 22.09 | 2 |
| | 64QAM | 1 | 0 | 22.24 | 22.31 | 22.24 | 2 |
| | | 1 | 7 | 22.24 | 22.33 | 22.27 | 2 |
| | | 1 | 14 | 22.22 | 22.30 | 22.29 | 2 |
| | | 8 | 0 | 20.95 | 21.03 | 20.91 | 3 |
| | | 8 | 3 | 21.08 | 21.15 | 21.17 | 3 |
| | | 8 | 7 | 20.92 | 21.01 | 20.93 | 3 |
| | | 15 | 0 | 21.05 | 21.09 | 21.11 | 3 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 20425 | Mid CH 20525 | High CH 20625 | MPR |
|---|---|---|---|---|---|---|---|
| | | | | Frequency 826.5 MHz | Frequency 836.5 MHz | Frequency 846.5 MHz | |
| 5/ 5 | QPSK | 1 | 0 | 24.07 | 24.09 | 24.09 | 0 |
| | | 1 | 12 | 24.14 | 24.10 | 24.14 | 0 |
| | | 1 | 24 | 24.03 | 24.03 | 24.13 | 0 |
| | | 12 | 0 | 23.02 | 23.06 | 23.02 | 1 |
| | | 12 | 6 | 23.07 | 23.27 | 23.15 | 1 |
| | | 12 | 13 | 23.12 | 23.16 | 23.20 | 1 |
| | | 25 | 0 | 23.02 | 23.16 | 23.06 | 1 |
| | 16QAM | 1 | 0 | 23.28 | 23.38 | 23.40 | 1 |
| | | 1 | 12 | 23.27 | 23.45 | 23.35 | 1 |
| | | 1 | 24 | 23.31 | 23.25 | 23.33 | 1 |
| | | 12 | 0 | 21.87 | 21.97 | 21.89 | 2 |
| | | 12 | 6 | 22.05 | 22.19 | 22.07 | 2 |
| | | 12 | 13 | 22.01 | 22.11 | 22.13 | 2 |
| | | 25 | 0 | 22.02 | 22.06 | 22.06 | 2 |
| | 64QAM | 1 | 0 | 22.18 | 22.28 | 22.30 | 2 |
| | | 1 | 12 | 22.21 | 22.39 | 22.27 | 2 |
| | | 1 | 24 | 22.15 | 22.35 | 22.29 | 2 |
| | | 12 | 0 | 20.96 | 21.00 | 20.90 | 3 |
| | | 12 | 6 | 21.02 | 21.22 | 21.16 | 3 |
| | | 12 | 13 | 20.96 | 21.00 | 20.90 | 3 |
| | | 25 | 0 | 21.01 | 21.15 | 21.09 | 3 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 20450 | Mid CH 20525 | High CH 20600 | MPR |
|---|---|---|---|---|---|---|---|
| | | | | Frequency 829 MHz | Frequency 836.5 MHz | Frequency 844 MHz | |
| 5/ 10 | QPSK | 1 | 0 | 24.12 | 24.16 | 24.14 | 0 |
| | | 1 | 24 | 24.16 | 24.18 | 24.16 | 0 |
| | | 1 | 49 | 24.08 | 24.11 | 24.14 | 0 |
| | | 25 | 0 | 23.06 | 23.11 | 23.07 | 1 |
| | | 25 | 12 | 23.15 | 23.28 | 23.20 | 1 |
| | | 25 | 25 | 23.16 | 23.21 | 23.21 | 1 |
| | | 50 | 0 | 23.08 | 23.18 | 23.11 | 1 |
| | 16QAM | 1 | 0 | 23.35 | 23.43 | 23.42 | 1 |
| | | 1 | 24 | 23.35 | 23.47 | 23.40 | 1 |
| | | 1 | 49 | 23.33 | 23.33 | 23.35 | 1 |
| | | 25 | 0 | 21.95 | 22.03 | 21.97 | 2 |
| | | 25 | 12 | 22.11 | 22.21 | 22.13 | 2 |
| | | 25 | 25 | 22.08 | 22.16 | 22.15 | 2 |
| | | 50 | 0 | 22.08 | 22.13 | 22.11 | 2 |
| | 64QAM | 1 | 0 | 22.25 | 22.33 | 22.32 | 2 |
| | | 1 | 24 | 22.29 | 22.41 | 22.33 | 2 |
| | | 1 | 49 | 22.23 | 22.36 | 22.31 | 2 |
| | | 25 | 0 | 21.00 | 21.05 | 20.98 | 3 |
| | | 25 | 12 | 21.10 | 21.23 | 21.18 | 3 |
| | | 25 | 25 | 21.00 | 21.05 | 20.98 | 3 |
| | | 50 | 0 | 21.07 | 21.17 | 21.12 | 3 |

**ERP POWER (dBm)**
**Ant0:**

**GSM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 128 | 824.2 | 32.82 | -3.36 | 27.31 | 538.27 | 7 |
| 189 | 836.4 | 33.01 | -3.36 | 27.5 | 562.34 | 7 |
| 251 | 848.8 | 32.93 | -3.36 | 27.42 | 552.08 | 7 |

**REMARKS:** ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

**EDGE**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 128 | 824.2 | 26.3 | -3.36 | 20.79 | 119.95 | 7 |
| 189 | 836.4 | 26.24 | -3.36 | 20.73 | 118.3 | 7 |
| 251 | 848.8 | 26.29 | -3.36 | 20.78 | 119.67 | 7 |

**REMARKS:** ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

**WCDMA**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 4132 | 826.4 | 24.19 | -3.36 | 18.68 | 73.79 | 7 |
| 4182 | 836.4 | 24.08 | -3.36 | 18.57 | 71.94 | 7 |
| 4233 | 846.6 | 24.06 | -3.36 | 18.55 | 71.61 | 7 |

**REMARKS:** ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

**LTE BAND 5**

**CHANNEL BANDWIDTH: 1.4MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20407 | 824.7 | 23.98 | -3.36 | 18.47 | 70.31 | 7 |
| 20525 | 836.5 | 24.12 | -3.36 | 18.61 | 72.61 | 7 |
| 20643 | 848.3 | 23.99 | -3.36 | 18.48 | 70.47 | 7 |

**CHANNEL BANDWIDTH: 1.4MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20407 | 824.7 | 23.17 | -3.36 | 17.66 | 58.34 | 7 |
| 20525 | 836.5 | 23.25 | -3.36 | 17.74 | 59.43 | 7 |
| 20643 | 848.3 | 23.25 | -3.36 | 17.74 | 59.43 | 7 |

**CHANNEL BANDWIDTH: 1.4MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20407 | 824.7 | 22.04 | -3.36 | 16.53 | 44.98 | 7 |
| 20525 | 836.5 | 22.24 | -3.36 | 16.73 | 47.1 | 7 |
| 20643 | 848.3 | 22.16 | -3.36 | 16.65 | 46.24 | 7 |

**CHANNEL BANDWIDTH: 3MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20415 | 825.5 | 23.91 | -3.36 | 18.4 | 69.18 | 7 |
| 20525 | 836.5 | 24.01 | -3.36 | 18.5 | 70.79 | 7 |
| 20635 | 847.5 | 23.99 | -3.36 | 18.48 | 70.47 | 7 |

**CHANNEL BANDWIDTH: 3MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20415 | 825.5 | 23.16 | -3.36 | 17.65 | 58.21 | 7 |
| 20525 | 836.5 | 23.31 | -3.36 | 17.8 | 60.26 | 7 |
| 20635 | 847.5 | 23.28 | -3.36 | 17.77 | 59.84 | 7 |

**CHANNEL BANDWIDTH: 3MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20415 | 825.5 | 22.09 | -3.36 | 16.58 | 45.5 | 7 |
| 20525 | 836.5 | 22.18 | -3.36 | 16.67 | 46.45 | 7 |
| 20635 | 847.5 | 22.12 | -3.36 | 16.61 | 45.81 | 7 |

**CHANNEL BANDWIDTH: 5MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20425 | 826.5 | 23.96 | -3.36 | 18.45 | 69.98 | 7 |
| 20525 | 836.5 | 23.96 | -3.36 | 18.45 | 69.98 | 7 |
| 20625 | 846.5 | 23.99 | -3.36 | 18.48 | 70.47 | 7 |

**CHANNEL BANDWIDTH: 5MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20425 | 826.5 | 23.16 | -3.36 | 17.65 | 58.21 | 7 |
| 20525 | 836.5 | 23.3 | -3.36 | 17.79 | 60.12 | 7 |
| 20625 | 846.5 | 23.28 | -3.36 | 17.77 | 59.84 | 7 |

**CHANNEL BANDWIDTH: 5MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20425 | 826.5 | 22.04 | -3.36 | 16.53 | 44.98 | 7 |
| 20525 | 836.5 | 22.24 | -3.36 | 16.73 | 47.1 | 7 |
| 20625 | 846.5 | 22.16 | -3.36 | 16.65 | 46.24 | 7 |

**CHANNEL BANDWIDTH: 10MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20450 | 829.0 | 23.98 | -3.36 | 18.47 | 70.31 | 7 |
| 20525 | 836.5 | 24.03 | -3.36 | 18.52 | 71.12 | 7 |
| 20600 | 844.0 | 24.01 | -3.36 | 18.5 | 70.79 | 7 |

**CHANNEL BANDWIDTH: 10MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20450 | 829.0 | 23.22 | -3.36 | 17.71 | 59.02 | 7 |
| 20525 | 836.5 | 23.32 | -3.36 | 17.81 | 60.39 | 7 |
| 20600 | 844.0 | 23.3 | -3.36 | 17.79 | 60.12 | 7 |

**CHANNEL BANDWIDTH: 10MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20450 | 829.0 | 22.12 | -3.36 | 16.61 | 45.81 | 7 |
| 20525 | 836.5 | 22.26 | -3.36 | 16.75 | 47.32 | 7 |
| 20600 | 844.0 | 22.18 | -3.36 | 16.67 | 46.45 | 7 |

**REMARKS:** ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

**Ant1:**

**GSM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 128 | 824.2 | 32.61 | -3.45 | 27.01 | 502.34 | 7 |
| 189 | 836.4 | 32.73 | -3.45 | 27.13 | 516.42 | 7 |
| 251 | 848.8 | 32.58 | -3.45 | 26.98 | 498.88 | 7 |

**REMARKS:** ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

**EDGE**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 128 | 824.2 | 26.4 | -3.45 | 20.8 | 120.23 | 7 |
| 189 | 836.4 | 26.45 | -3.45 | 20.85 | 121.62 | 7 |
| 251 | 848.8 | 26.41 | -3.45 | 20.81 | 120.5 | 7 |

**REMARKS:** ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

**WCDMA**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 4132 | 826.4 | 24.45 | -3.45 | 18.85 | 76.74 | 7 |
| 4182 | 836.4 | 24.38 | -3.45 | 18.78 | 75.51 | 7 |
| 4233 | 846.6 | 24.41 | -3.45 | 18.81 | 76.03 | 7 |

**REMARKS:** ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

**LTE BAND 5**

**CHANNEL BANDWIDTH: 1.4MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20407 | 824.7 | 24.13 | -3.45 | 18.53 | 71.29 | 7 |
| 20525 | 836.5 | 24.16 | -3.45 | 18.56 | 71.78 | 7 |
| 20643 | 848.3 | 24.15 | -3.45 | 18.55 | 71.61 | 7 |

**CHANNEL BANDWIDTH: 1.4MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20407 | 824.7 | 23.33 | -3.45 | 17.73 | 59.29 | 7 |
| 20525 | 836.5 | 23.39 | -3.45 | 17.79 | 60.12 | 7 |
| 20643 | 848.3 | 23.38 | -3.45 | 17.78 | 59.98 | 7 |

**CHANNEL BANDWIDTH: 1.4MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20407 | 824.7 | 22.21 | -3.45 | 16.61 | 45.81 | 7 |
| 20525 | 836.5 | 22.39 | -3.45 | 16.79 | 47.75 | 7 |
| 20643 | 848.3 | 22.3 | -3.45 | 16.7 | 46.77 | 7 |

**CHANNEL BANDWIDTH: 3MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20415 | 825.5 | 24.09 | -3.45 | 18.49 | 70.63 | 7 |
| 20525 | 836.5 | 24.14 | -3.45 | 18.54 | 71.45 | 7 |
| 20635 | 847.5 | 24.14 | -3.45 | 18.54 | 71.45 | 7 |

**CHANNEL BANDWIDTH: 3MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20415 | 825.5 | 23.31 | -3.45 | 17.71 | 59.02 | 7 |
| 20525 | 836.5 | 23.42 | -3.45 | 17.82 | 60.53 | 7 |
| 20635 | 847.5 | 23.4 | -3.45 | 17.8 | 60.26 | 7 |

**CHANNEL BANDWIDTH: 3MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20415 | 825.5 | 22.24 | -3.45 | 16.64 | 46.13 | 7 |
| 20525 | 836.5 | 22.33 | -3.45 | 16.73 | 47.1 | 7 |
| 20635 | 847.5 | 22.29 | -3.45 | 16.69 | 46.67 | 7 |

**CHANNEL BANDWIDTH: 5MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20425 | 826.5 | 24.14 | -3.45 | 18.54 | 71.45 | 7 |
| 20525 | 836.5 | 24.1 | -3.45 | 18.5 | 70.79 | 7 |
| 20625 | 846.5 | 24.14 | -3.45 | 18.54 | 71.45 | 7 |

**CHANNEL BANDWIDTH: 5MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20425 | 826.5 | 23.31 | -3.45 | 17.71 | 59.02 | 7 |
| 20525 | 836.5 | 23.45 | -3.45 | 17.85 | 60.95 | 7 |
| 20625 | 846.5 | 23.4 | -3.45 | 17.8 | 60.26 | 7 |

**CHANNEL BANDWIDTH: 5MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20425 | 826.5 | 22.21 | -3.45 | 16.61 | 45.81 | 7 |
| 20525 | 836.5 | 22.39 | -3.45 | 16.79 | 47.75 | 7 |
| 20625 | 846.5 | 22.3 | -3.45 | 16.7 | 46.77 | 7 |

**CHANNEL BANDWIDTH: 10MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20450 | 829.0 | 24.16 | -3.45 | 18.56 | 71.78 | 7 |
| 20525 | 836.5 | 24.18 | -3.45 | 18.58 | 72.11 | 7 |
| 20600 | 844.0 | 24.16 | -3.45 | 18.56 | 71.78 | 7 |

**CHANNEL BANDWIDTH: 10MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20450 | 829.0 | 23.35 | -3.45 | 17.75 | 59.57 | 7 |
| 20525 | 836.5 | 23.47 | -3.45 | 17.87 | 61.24 | 7 |
| 20600 | 844.0 | 23.42 | -3.45 | 17.82 | 60.53 | 7 |

**CHANNEL BANDWIDTH: 10MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | ERP (dBm) | ERP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20450 | 829.0 | 22.29 | -3.45 | 16.69 | 46.67 | 7 |
| 20525 | 836.5 | 22.41 | -3.45 | 16.81 | 47.97 | 7 |
| 20600 | 844.0 | 22.33 | -3.45 | 16.73 | 47.1 | 7 |

**REMARKS:** ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

## 3.2 FREQUENCY STABILITY MEASUREMENT

### 3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

### 3.2.2 TEST PROCEDURE

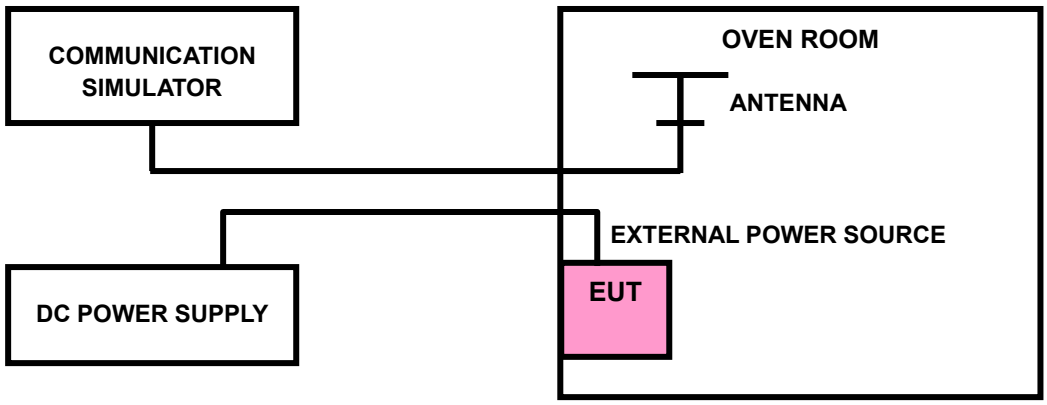
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

**NOTE:** The frequency error was recorded frequency error from the communication simulator.

### 3.2.3 TEST SETUP



### 3.2.4 TEST RESULTS

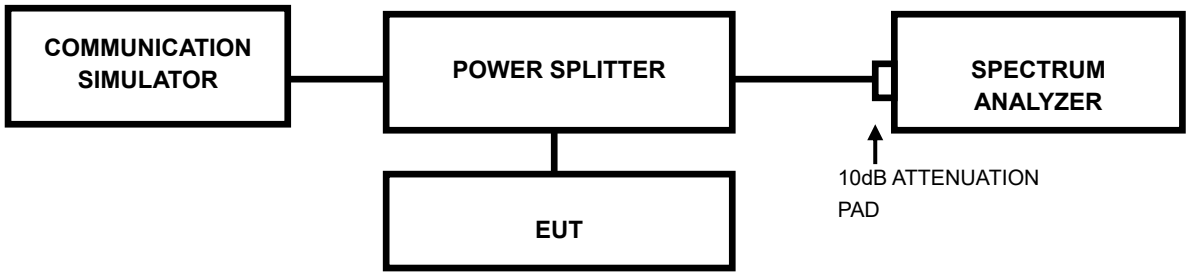
Please Refer to Appendix B Of this test report.

## 3.3 OCCUPIED BANDWIDTH MEASUREMENT

### 3.3.1 TEST PROCEDURES

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. 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.

### 3.3.2 TEST SETUP



### 3.3.3 TEST RESULTS

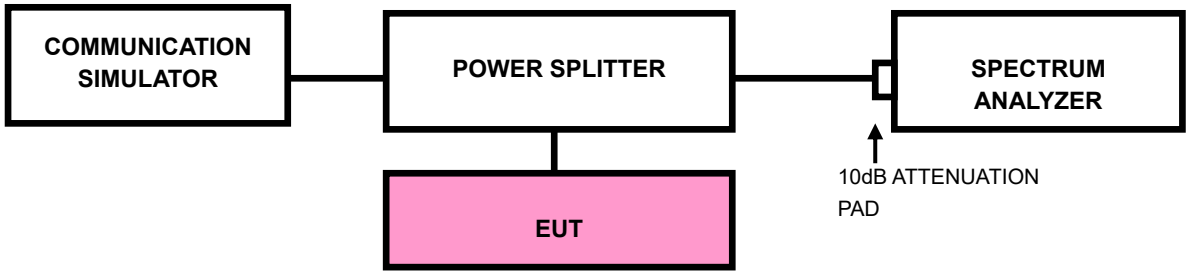
Please Refer to Appendix B Of this test report.

## 3.4 BAND EDGE MEASUREMENT

### 3.4.1 LIMITS OF BAND EDGE MEASUREMENT

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.

### 3.4.2 TEST SETUP



### 3.4.3 TEST PROCEDURES

a. All measurements were done at low and high operational frequency range.

b. The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RBW of the spectrum is 10kHz and VBW of the spectrum is 30kHz (GSM/GPRS/ EDGE).

c. The center frequency of spectrum is the band edge frequency and span is 10MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz (WCDMA).

d. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 20kHz and VBW of the spectrum is 100 kHz. (LTE bandwidth 1.4MHz).

e. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 30kHz and VBW of the spectrum is 100kHz. (LTE bandwidth 3MHz)

f. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 50kHz and VBW of the spectrum is 200kHz. (LTE bandwidth 5MHz)

g. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz. (LTE bandwidth 10MHz)

h. Record the max trace plot into the test report.

### 3.4.4 TEST RESULTS

Please Refer to Appendix B Of this test report.

## 3.5 CONDUCTED SPURIOUS EMISSIONS

### 3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

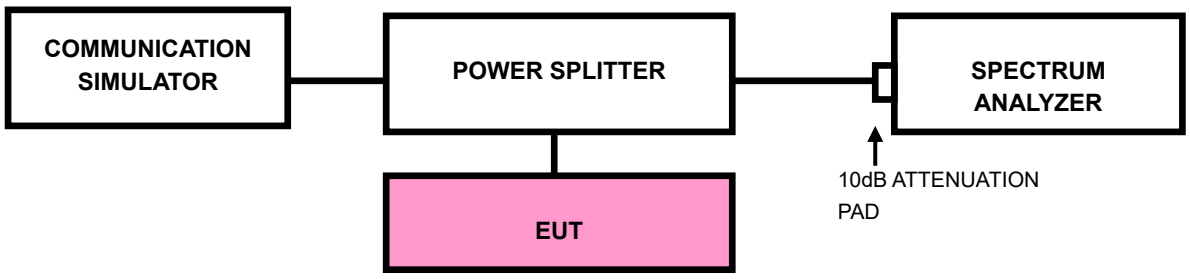
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

### 3.5.2 TEST PROCEDURE

a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.

b. Measuring frequency range is from 9 kHz to 9GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

### 3.5.3 TEST SETUP



### 3.5.4 TEST RESULTS

Please Refer to Appendix B Of this test report.

## 3.6 RADIATED EMISSION MEASUREMENT

### 3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The 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. The emission limit equal to –13dBm.

### 3.6.2 TEST PROCEDURES

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step a. Record the power level of S.G

c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

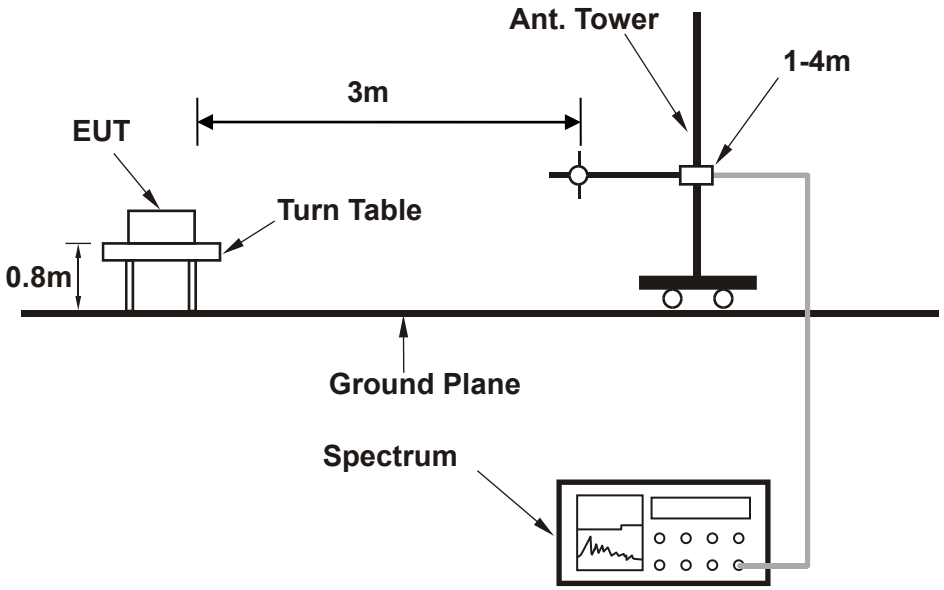
**NOTE:** The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

### 3.6.3 DEVIATION FROM TEST STANDARD

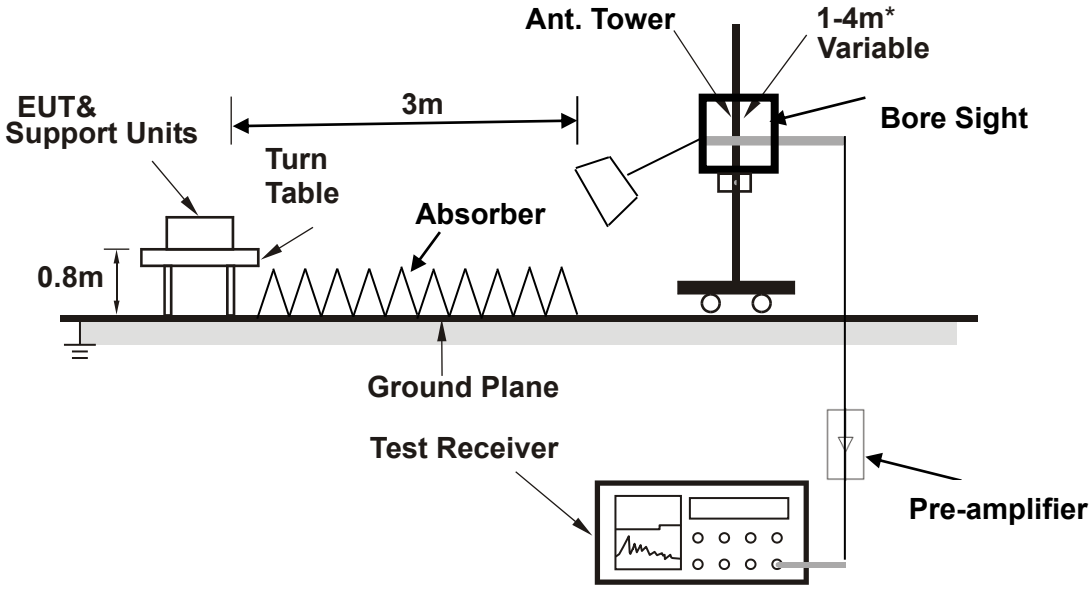
No deviation

### 3.6.4 TEST SETUP

**< Frequency Range 30MHz~1GHz >**




**<Frequency Range above 1GHz>**




**Note**: Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

## 3.6.5 TEST RESULTS

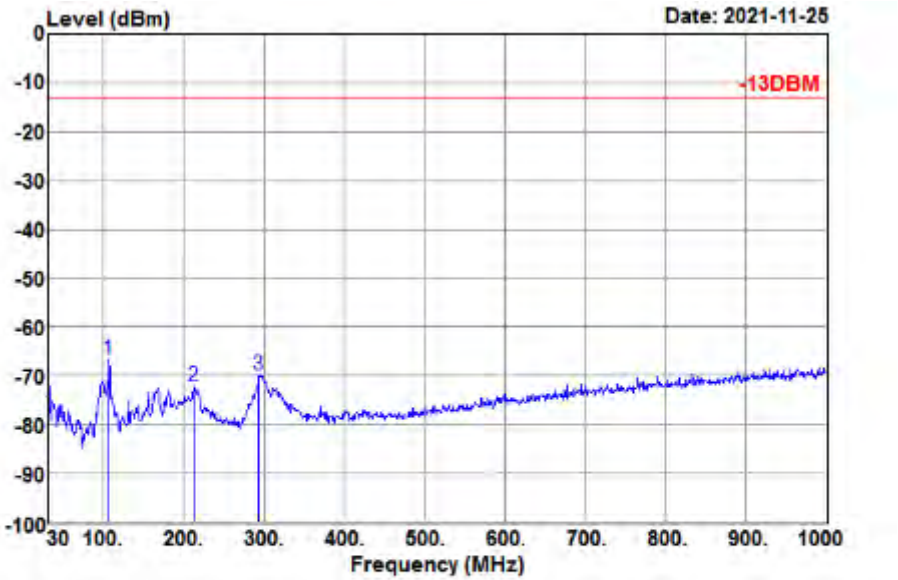
**BELOW 1GHz WORST-CASE DATA**

**30 MHz – 1GHz data:**

**GSM850 (Ant1)**

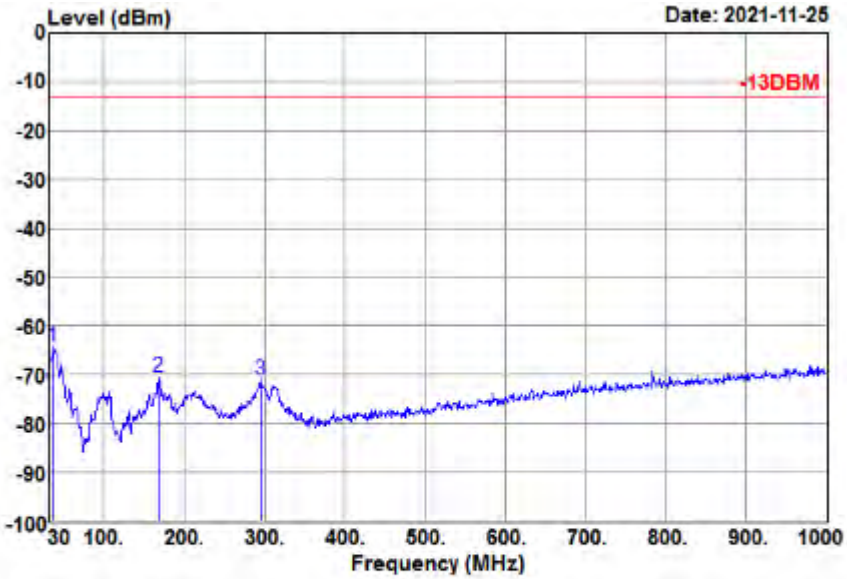
**CHANNEL BANDWIDTH: 128 ~ 251**

| | | | |
|---|---|---|---|
| **MODE** | TX channel 251 | **FREQUENCY RANGE** | Below 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60Hz |
| **TESTED BY** | Jace Hu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 107.600 | -60.30 | -6.33 | -66.63 | -13.00 | -53.63 | Peak |
| 213.330 | -66.23 | -5.95 | -72.18 | -13.00 | -59.18 | Peak |
| 293.840 | -66.93 | -2.91 | -69.84 | -13.00 | -56.84 | Peak |

| MODE | TX channel 251 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 37.760 | -59.47 | -4.78 | -64.25 | -13.00 | -51.25 | Peak |
| 168.710 | -66.44 | -4.00 | -70.44 | -13.00 | -57.44 | Peak |
| 294.810 | -68.28 | -2.87 | -71.15 | -13.00 | -58.15 | Peak |

**ABOVE 1GHz DATA**

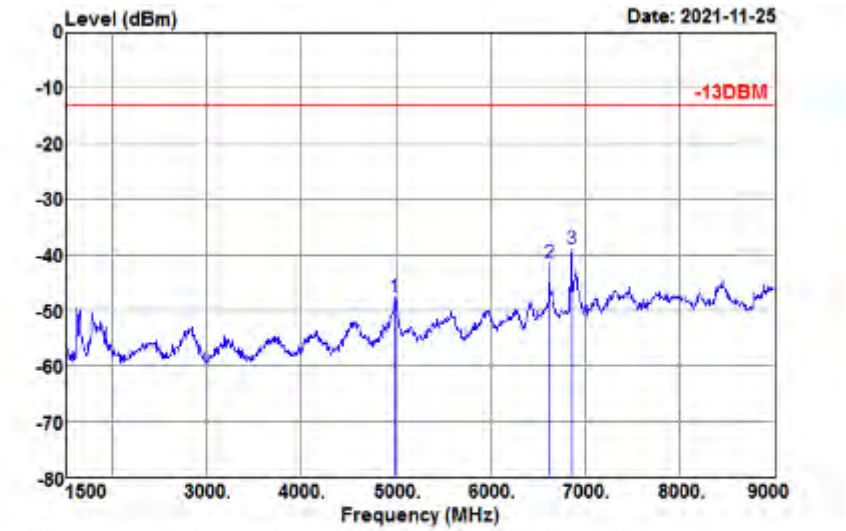
**Note:**

1. The emission in the range of 1 GHz~1.5 GHz was tested 20db below the limit, the data not recorded in the sheet.
2. For higher frequency, the emission is too low to be detected.

**GSM 850(Ant1)**

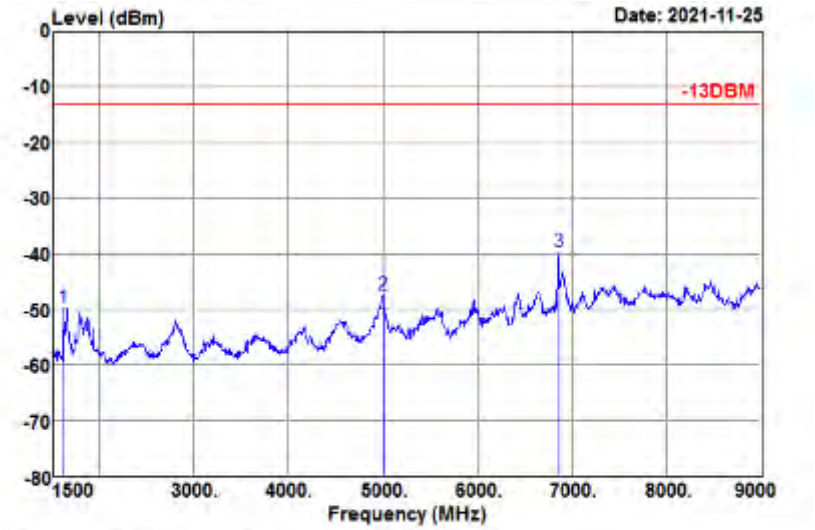
**CH 128:**

| | | | |
|---|---|---|---|
| **MODE** | TX channel 128 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60Hz |
| **TESTED BY** | Jace Hu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 4995.000 | -60.17 | 12.47 | -47.70 | -13.00 | -34.70 | Peak |
| 6622.500 | -58.51 | 16.93 | -41.58 | -13.00 | -28.58 | Peak |
| 6862.500 | -56.92 | 17.95 | -38.97 | -13.00 | -25.97 | Peak |

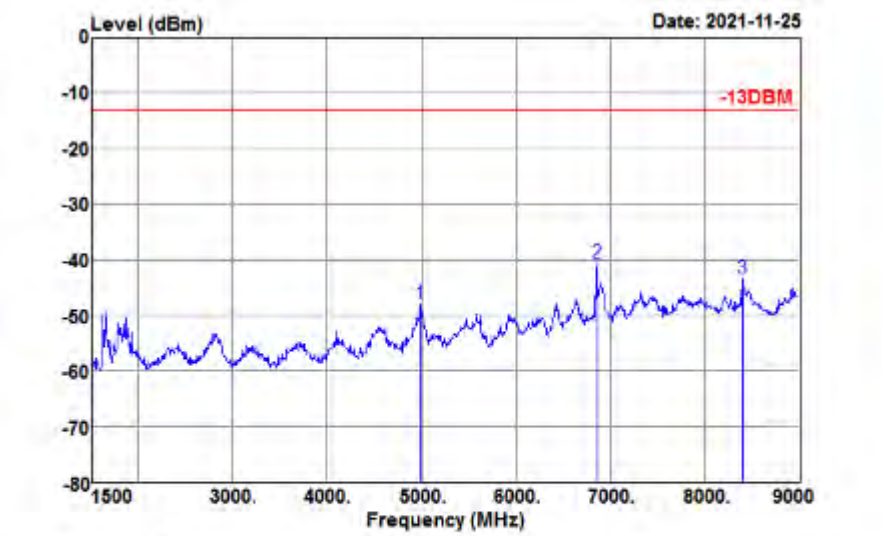
| MODE | TX channel 128 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1627.500 | -56.02 | 6.30 | -49.72 | -13.00 | -36.72 | Peak |
| 5002.500 | -60.20 | 12.89 | -47.31 | -13.00 | -34.31 | Peak |
| 6862.500 | -57.97 | 18.38 | -39.59 | -13.00 | -26.59 | Peak |

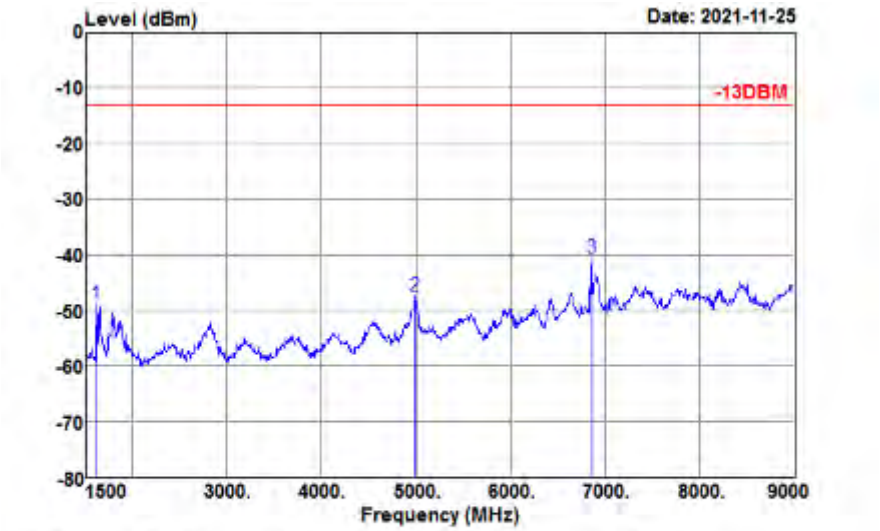
**CH 189:**

| MODE | TX channel 189 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 4987.500 | -60.24 | 12.45 | -47.79 | -13.00 | -34.79 | Peak |
| 6862.500 | -58.64 | 17.95 | -40.69 | -13.00 | -27.69 | Peak |
| 8400.000 | -62.65 | 19.25 | -43.40 | -13.00 | -30.40 | Peak |

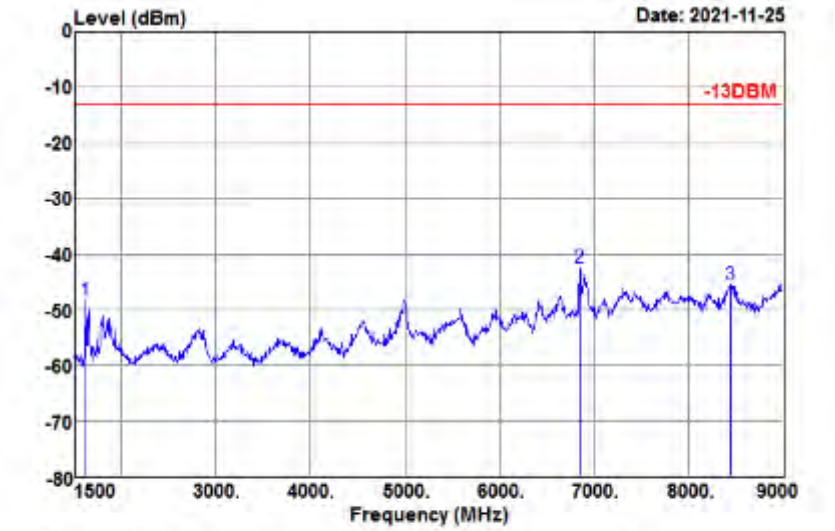
| MODE | TX channel 189 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1627.500 | -55.18 | 6.30 | -48.88 | -13.00 | -35.88 | Peak |
| 4987.500 | -60.24 | 12.86 | -47.38 | -13.00 | -34.38 | Peak |
| 6862.500 | -59.05 | 18.38 | -40.67 | -13.00 | -27.67 | Peak |

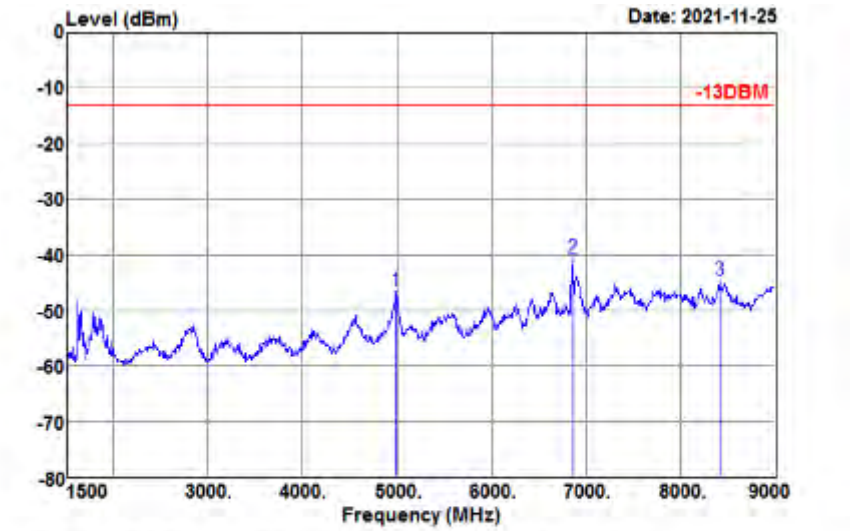
**CH 251:**

| MODE | TX channel 251 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1627.500 | -54.25 | 5.95 | -48.30 | -13.00 | -35.30 | Peak |
| 6855.000 | -60.41 | 17.92 | -42.49 | -13.00 | -29.49 | Peak |
| 8445.000 | -64.77 | 19.26 | -45.51 | -13.00 | -32.51 | Peak |

| MODE | TX channel 251 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

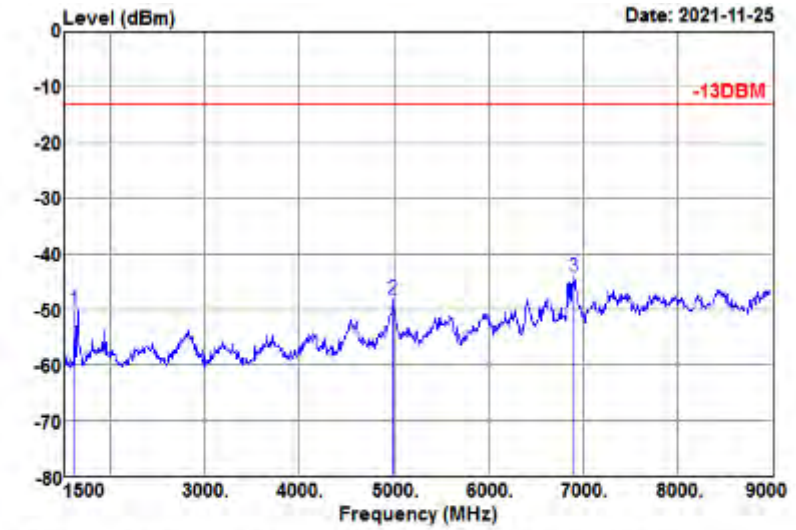



| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 4987.500 | -59.23 | 12.86 | -46.37 | -13.00 | -33.37 | Peak |
| 6862.500 | -58.91 | 18.38 | -40.53 | -13.00 | -27.53 | Peak |
| 8415.000 | -64.03 | 19.53 | -44.50 | -13.00 | -31.50 | Peak |

**EDGE 850(Ant1)**

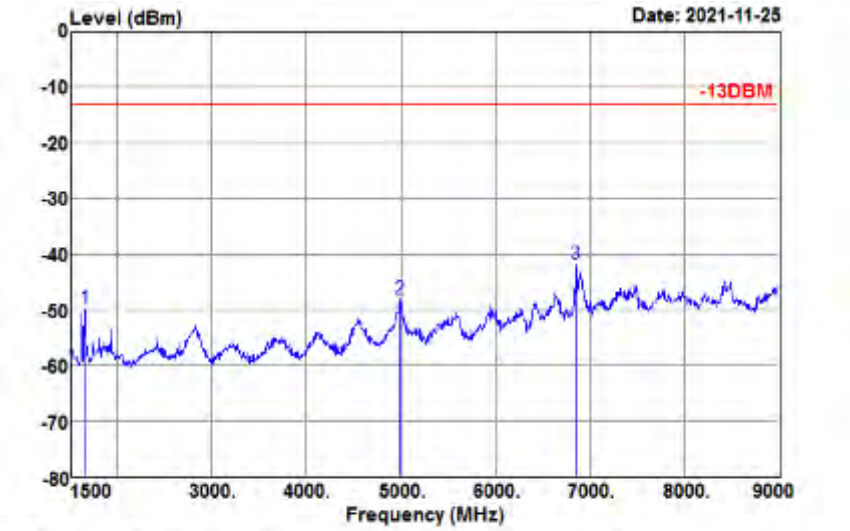
**CH 128:**

| | | | |
|---|---|---|---|
| **MODE** | TX channel 128 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60Hz |
| **TESTED BY** | Jace Hu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1627.500 | -55.93 | 5.95 | -49.98 | -13.00 | -36.98 | Peak |
| 4987.500 | -60.61 | 12.45 | -48.16 | -13.00 | -35.16 | Peak |
| 6907.500 | -62.19 | 18.15 | -44.04 | -13.00 | -31.04 | Peak |

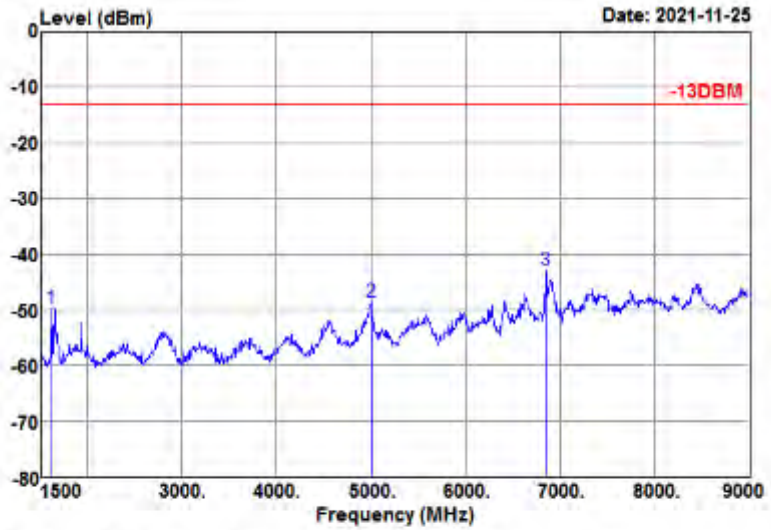
| MODE | TX channel 128 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1665.000 | -56.37 | 6.51 | -49.86 | -13.00 | -36.86 | Peak |
| 4987.500 | -60.89 | 12.86 | -48.03 | -13.00 | -35.03 | Peak |
| 6855.000 | -60.04 | 18.35 | -41.69 | -13.00 | -28.69 | Peak |

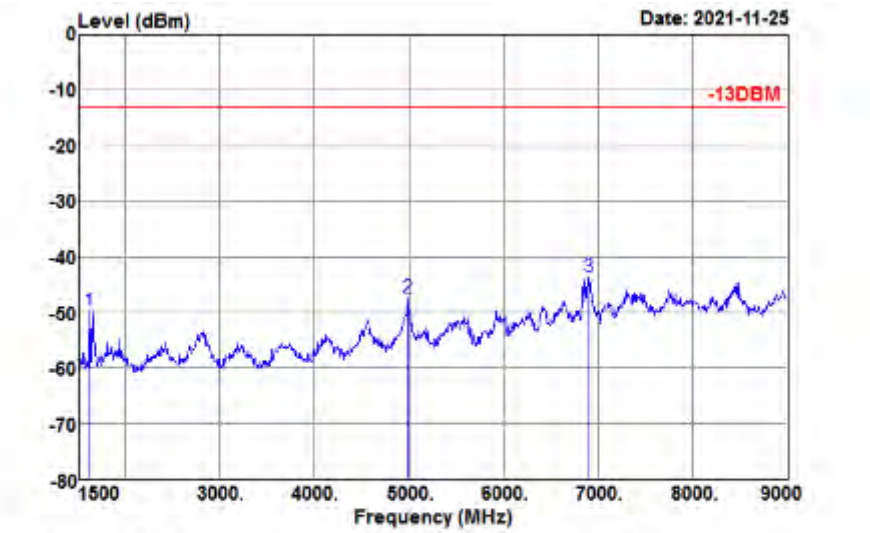
**CH 189:**

| MODE | TX channel 189 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1627.500 | -55.76 | 5.95 | -49.81 | -13.00 | -36.81 | Peak |
| 5002.500 | -61.11 | 12.48 | -48.63 | -13.00 | -35.63 | Peak |
| 6855.000 | -60.94 | 17.92 | -43.02 | -13.00 | -30.02 | Peak |

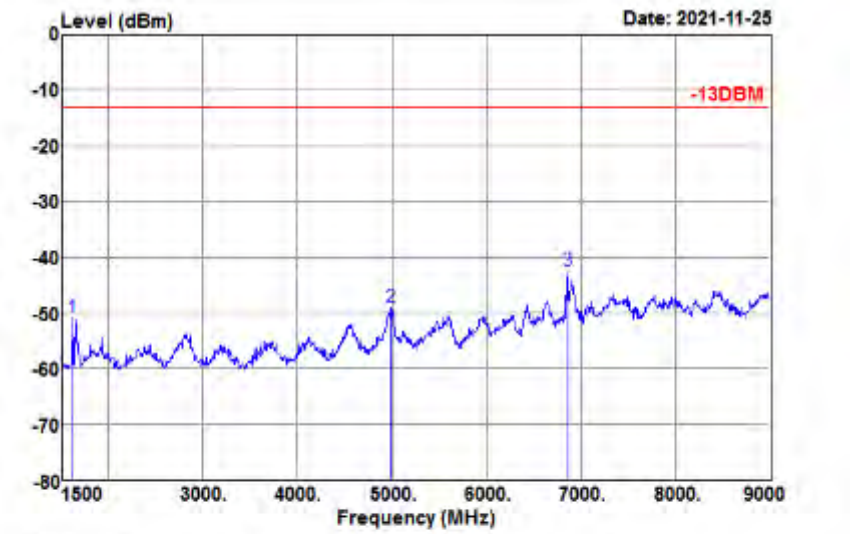
| MODE | TX channel 189 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1627.500 | -56.00 | 6.30 | -49.70 | -13.00 | -36.70 | Peak |
| 4987.500 | -60.34 | 12.86 | -47.48 | -13.00 | -34.48 | Peak |
| 6900.000 | -62.21 | 18.53 | -43.68 | -13.00 | -30.68 | Peak |

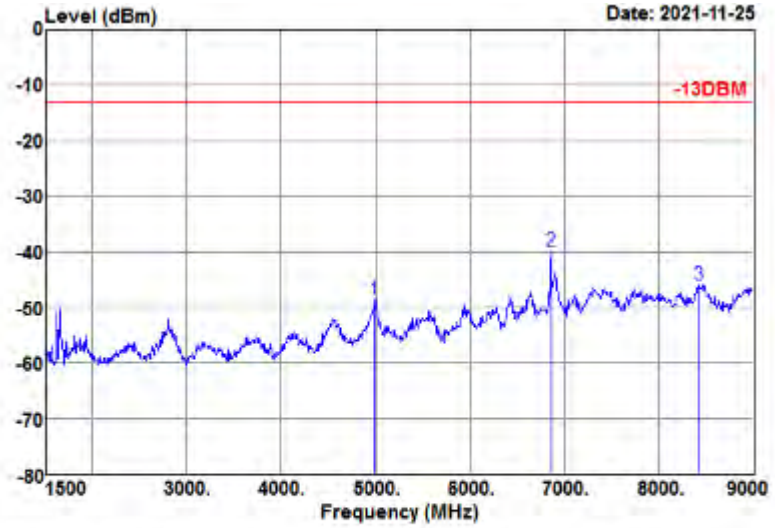
**CH 251:**

| MODE | TX channel 251 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1627.500 | -57.00 | 5.95 | -51.05 | -13.00 | -38.05 | Peak |
| 4987.500 | -61.49 | 12.45 | -49.04 | -13.00 | -36.04 | Peak |
| 6862.500 | -60.36 | 17.95 | -42.41 | -13.00 | -29.41 | Peak |

| MODE | TX channel 251 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

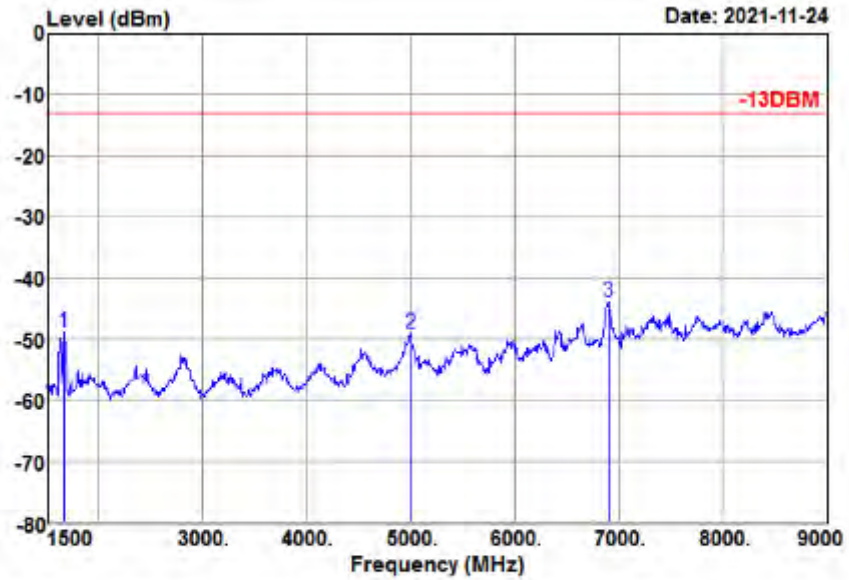



| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 4995.000 | -61.48 | 12.88 | -48.60 | -13.00 | -35.60 | Peak |
| 6862.500 | -58.32 | 18.38 | -39.94 | -13.00 | -26.94 | Peak |
| 8430.000 | -65.48 | 19.53 | -45.95 | -13.00 | -32.95 | Peak |

**WCDMA Band V(Ant0)**

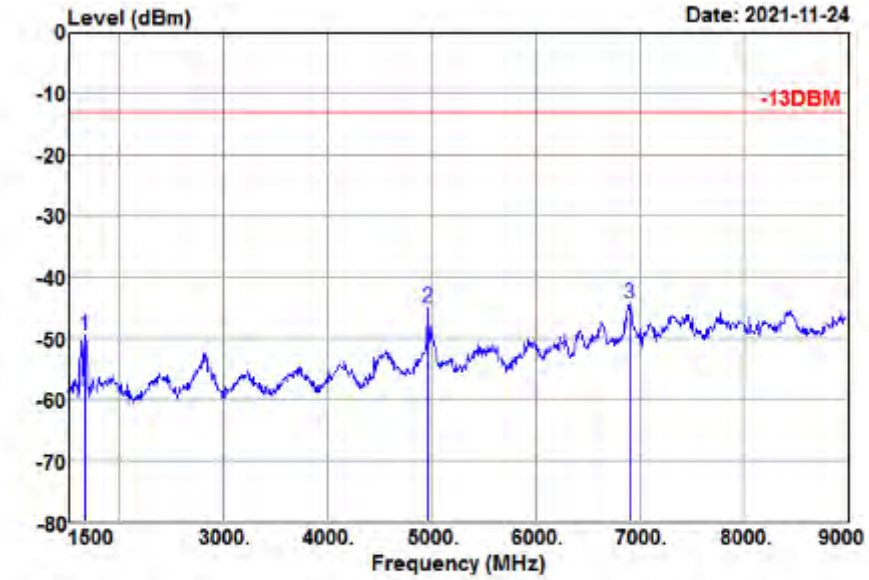
**CH 4132:**

| MODE | TX channel 4132 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1665.000 | -55.14 | 6.19 | -48.95 | -13.00 | -35.95 | Peak |
| 5002.500 | -61.61 | 12.48 | -49.13 | -13.00 | -36.13 | Peak |
| 6900.000 | -62.06 | 18.11 | -43.95 | -13.00 | -30.95 | Peak |

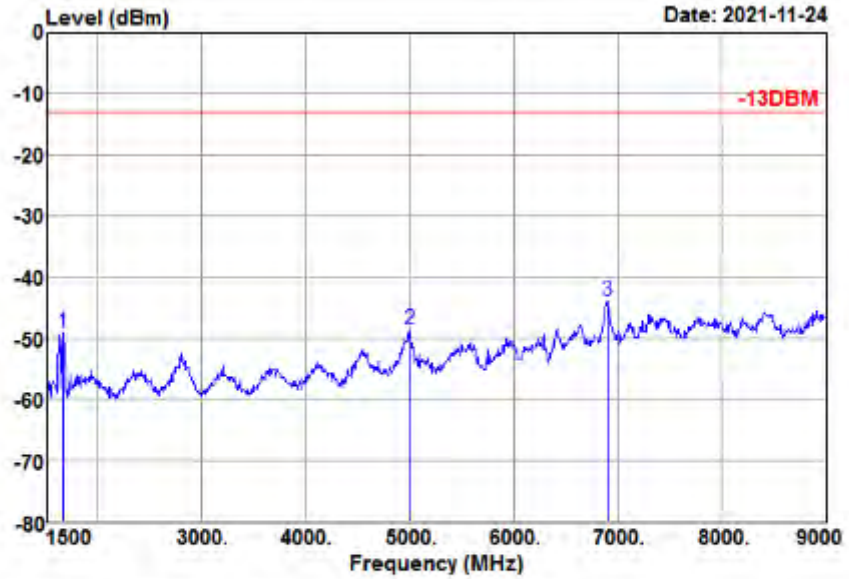
| MODE | TX channel 4132 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1665.000 | -55.98 | 6.51 | -49.47 | -13.00 | -36.47 | Peak |
| 4965.000 | -57.77 | 12.80 | -44.97 | -13.00 | -31.97 | Peak |
| 6900.000 | -62.94 | 18.53 | -44.41 | -13.00 | -31.41 | Peak |

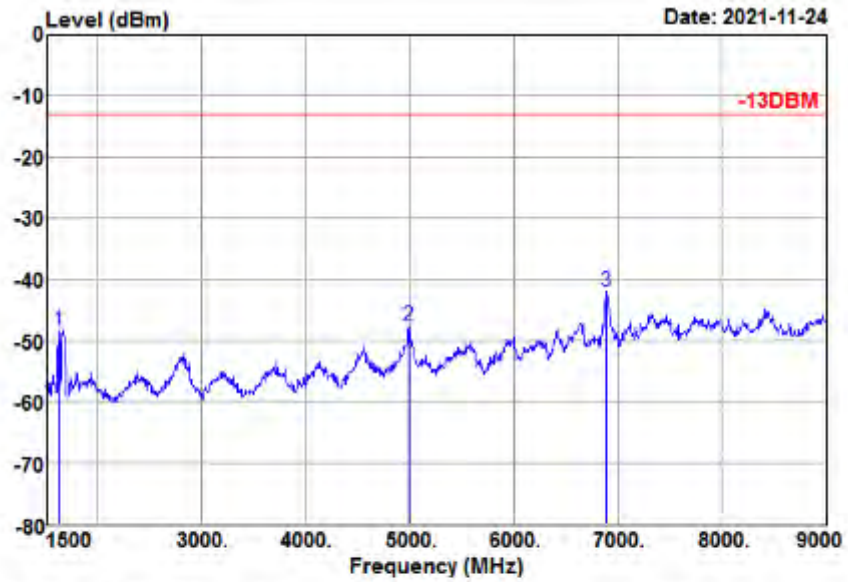
**CH 4182:**

| MODE | TX channel 4182 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1665.000 | -55.31 | 6.19 | -49.12 | -13.00 | -36.12 | Peak |
| 5002.500 | -61.17 | 12.48 | -48.69 | -13.00 | -35.69 | Peak |
| 6900.000 | -61.96 | 18.11 | -43.85 | -13.00 | -30.85 | Peak |

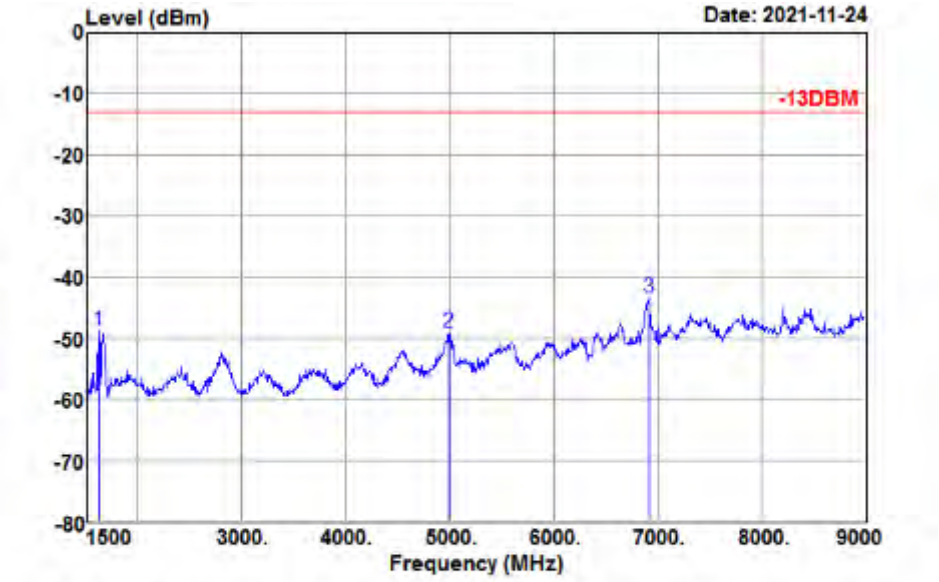
| MODE | TX channel 4182 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1627.500 | -54.62 | 6.30 | -48.32 | -13.00 | -35.32 | Peak |
| 4987.500 | -60.47 | 12.86 | -47.61 | -13.00 | -34.61 | Peak |
| 6892.500 | -60.54 | 18.50 | -42.04 | -13.00 | -29.04 | Peak |

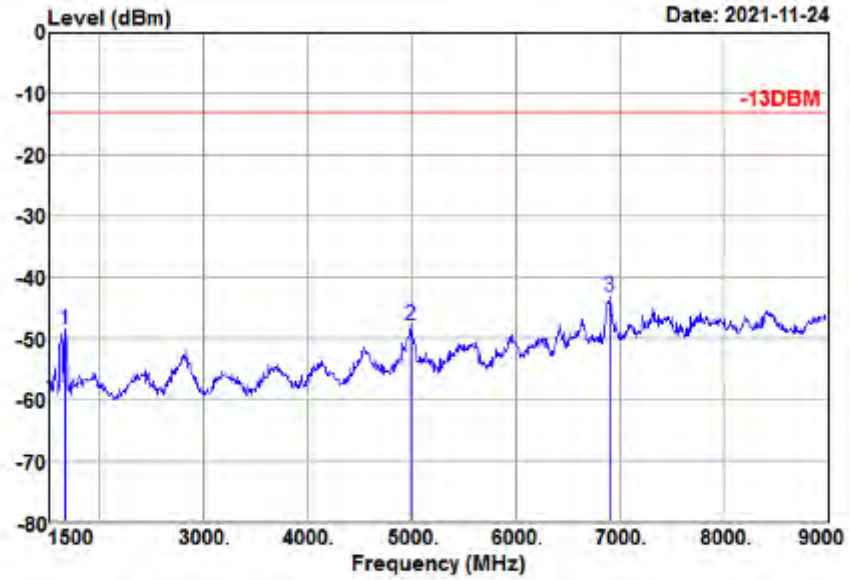
**CH 4233:**

| MODE | TX channel 4233 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1627.500 | -54.85 | 5.95 | -48.90 | -13.00 | -35.90 | Peak |
| 4987.500 | -61.44 | 12.45 | -48.99 | -13.00 | -35.99 | Peak |
| 6915.000 | -61.68 | 18.18 | -43.50 | -13.00 | -30.50 | Peak |

| MODE | TX channel 4233 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

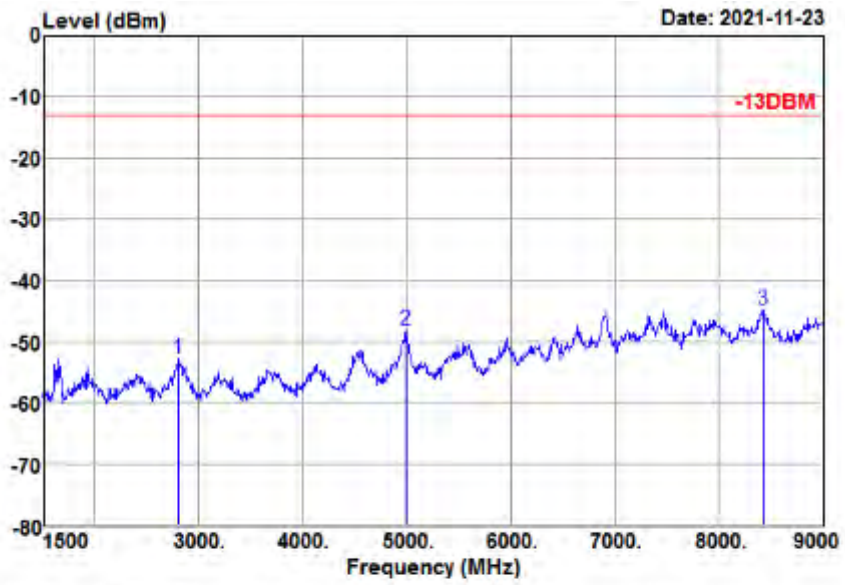



| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1672.500 | -55.21 | 6.55 | -48.66 | -13.00 | -35.66 | Peak |
| 4987.500 | -60.83 | 12.86 | -47.97 | -13.00 | -34.97 | Peak |
| 6900.000 | -61.71 | 18.53 | -43.18 | -13.00 | -30.18 | Peak |

**LTE Band 5(Ant0)**

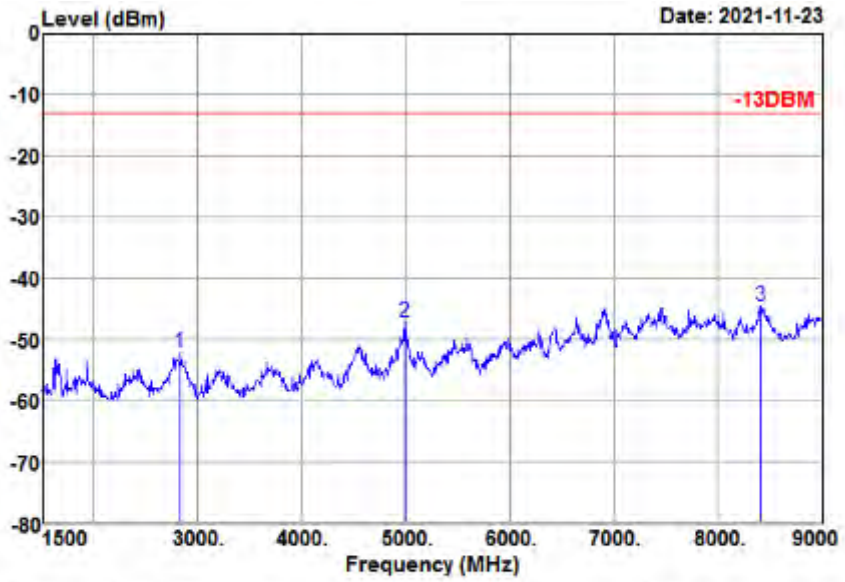
**CHANNEL BANDWIDTH: 1.4MHz / QPSK**

| MODE | TX channel 20525 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 2797.500 | -60.65 | 7.89 | -52.76 | -13.00 | -39.76 | Peak |
| 4987.500 | -60.53 | 12.45 | -48.08 | -13.00 | -35.08 | Peak |
| 8437.500 | -64.10 | 19.26 | -44.84 | -13.00 | -31.84 | Peak |

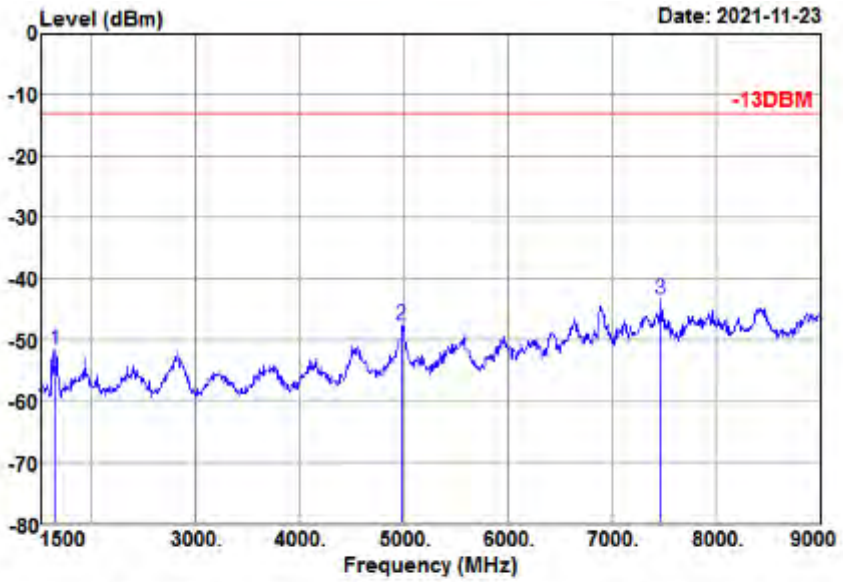
| MODE | TX channel 20525 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 2835.000 | -60.10 | 8.03 | -52.07 | -13.00 | -39.07 | Peak |
| 4995.000 | -60.03 | 12.88 | -47.15 | -13.00 | -34.15 | Peak |
| 8415.000 | -64.06 | 19.53 | -44.53 | -13.00 | -31.53 | Peak |

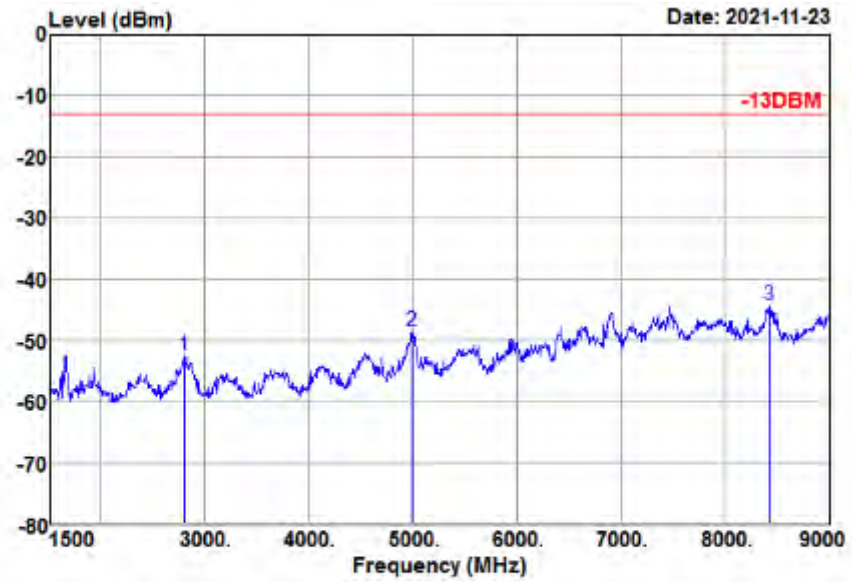
**CHANNEL BANDWIDTH: 3MHz / QPSK**

| | | | |
|---|---|---|---|
| **MODE** | TX channel 20525 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60Hz |
| **TESTED BY** | Jace Hu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1657.500 | -57.84 | 6.14 | -51.70 | -13.00 | -38.70 | Peak |
| 4980.000 | -59.99 | 12.44 | -47.55 | -13.00 | -34.55 | Peak |
| 7477.500 | -63.86 | 20.47 | -43.39 | -13.00 | -30.39 | Peak |

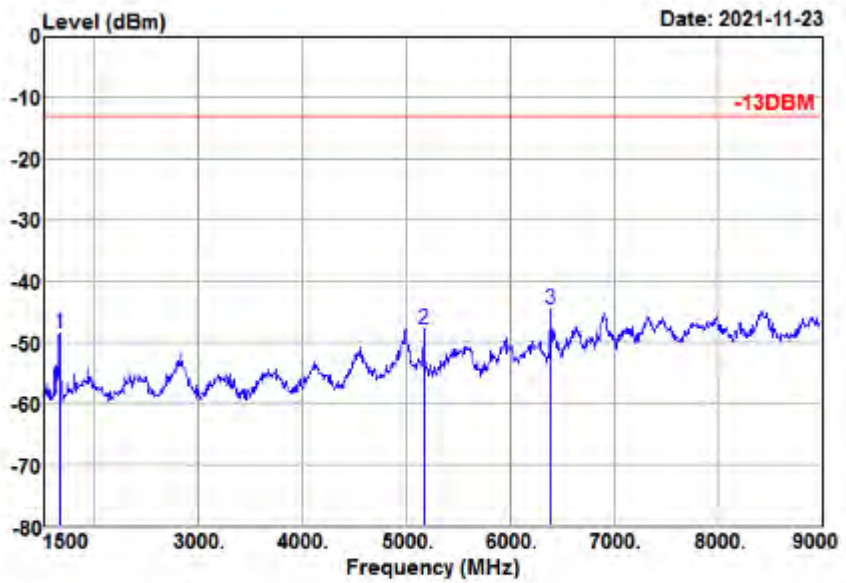
| MODE | TX channel 20525 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 2797.500 | -60.84 | 8.27 | -52.57 | -13.00 | -39.57 | Peak |
| 4987.500 | -61.45 | 12.86 | -48.59 | -13.00 | -35.59 | Peak |
| 8437.500 | -63.81 | 19.53 | -44.28 | -13.00 | -31.28 | Peak |

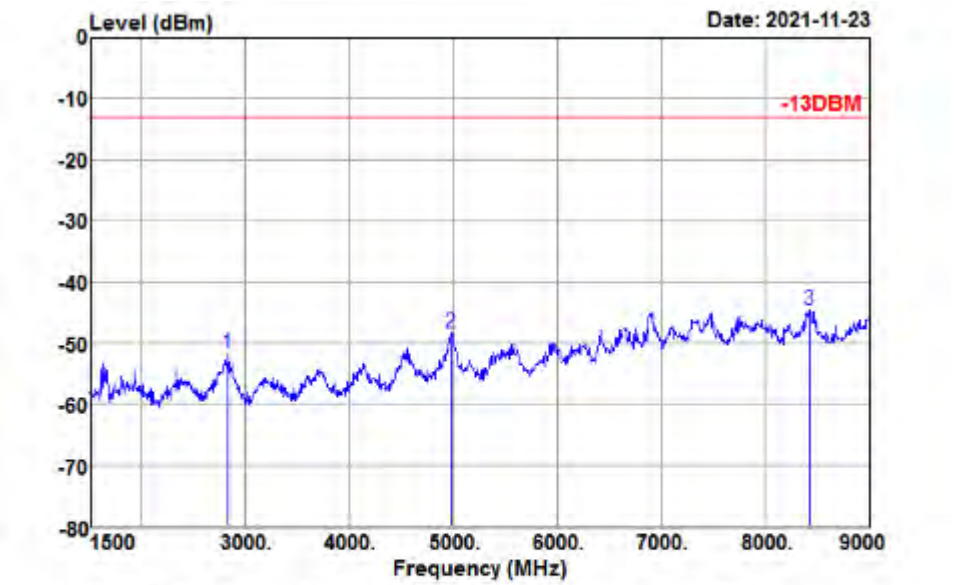
**CHANNEL BANDWIDTH: 5MHz / QPSK**

| | | | |
|---|---|---|---|
| **MODE** | TX channel 20525 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60Hz |
| **TESTED BY** | Jace Hu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1665.000 | -54.76 | 6.19 | -48.57 | -13.00 | -35.57 | Peak |
| 5167.500 | -60.42 | 12.59 | -47.83 | -13.00 | -34.83 | Peak |
| 6390.000 | -60.41 | 15.92 | -44.49 | -13.00 | -31.49 | Peak |

| MODE | TX channel 20525 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

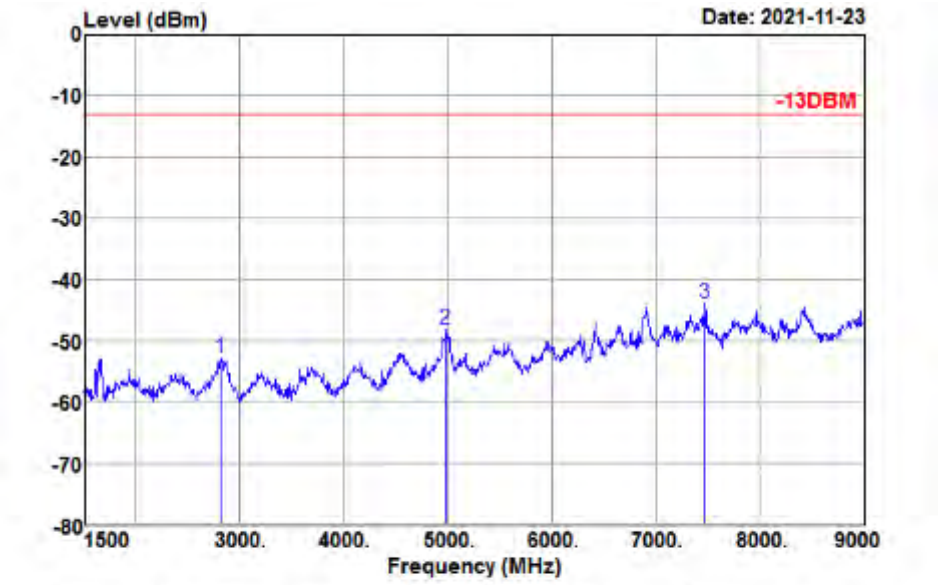



| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 2835.000 | -59.71 | 8.03 | -51.68 | -13.00 | -38.68 | Peak |
| 4980.000 | -61.15 | 12.84 | -48.31 | -13.00 | -35.31 | Peak |
| 8437.500 | -64.04 | 19.53 | -44.51 | -13.00 | -31.51 | Peak |

**CHANNEL BANDWIDTH: 10MHz / QPSK**

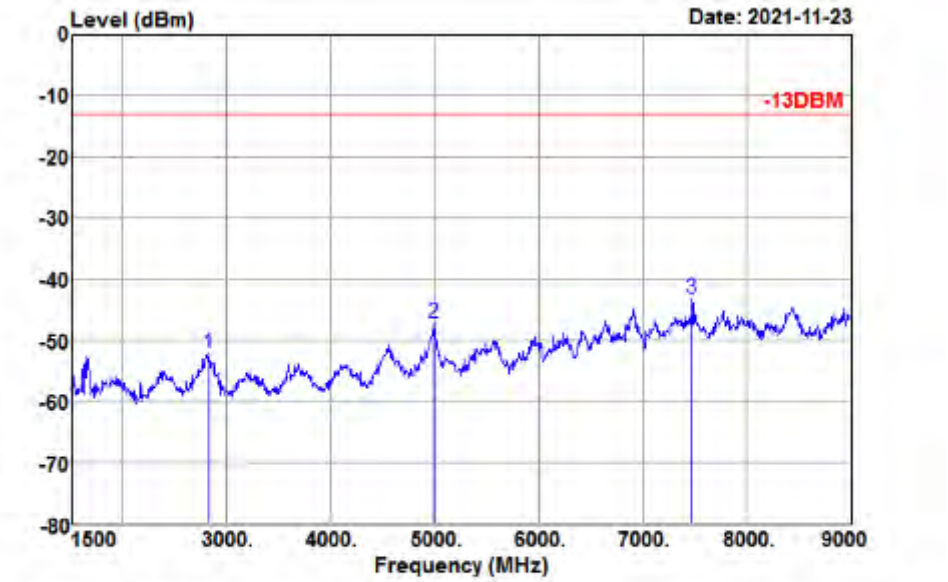
**CH20450:**

| | | | |
|---|---|---|---|
| **MODE** | TX channel 20450 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60Hz |
| **TESTED BY** | Jace Hu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 2820.000 | -60.61 | 7.78 | -52.83 | -13.00 | -39.83 | Peak |
| 4980.000 | -60.48 | 12.44 | -48.04 | -13.00 | -35.04 | Peak |
| 7477.500 | -64.30 | 20.47 | -43.83 | -13.00 | -30.83 | Peak |

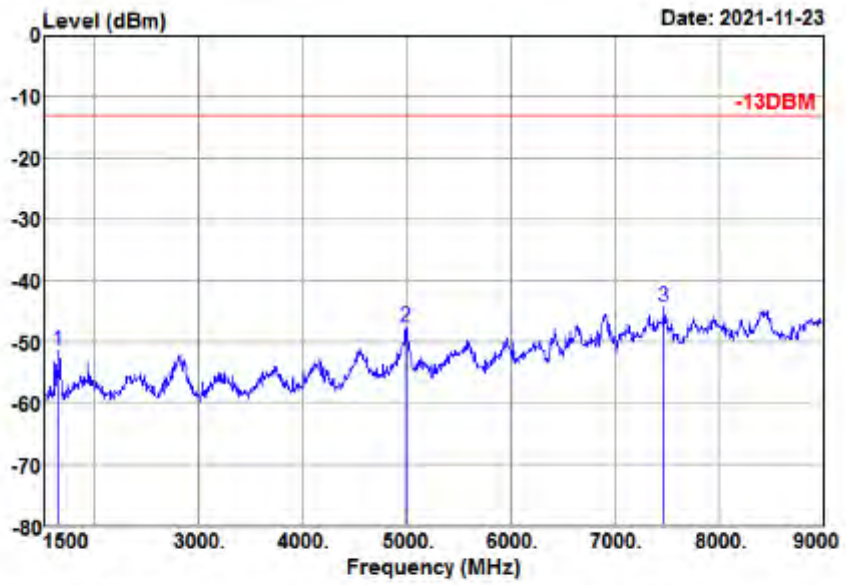
| MODE | TX channel 20450 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 2827.500 | -60.17 | 8.08 | -52.09 | -13.00 | -39.09 | Peak |
| 4995.000 | -60.15 | 12.88 | -47.27 | -13.00 | -34.27 | Peak |
| 7477.500 | -64.30 | 21.02 | -43.28 | -13.00 | -30.28 | Peak |

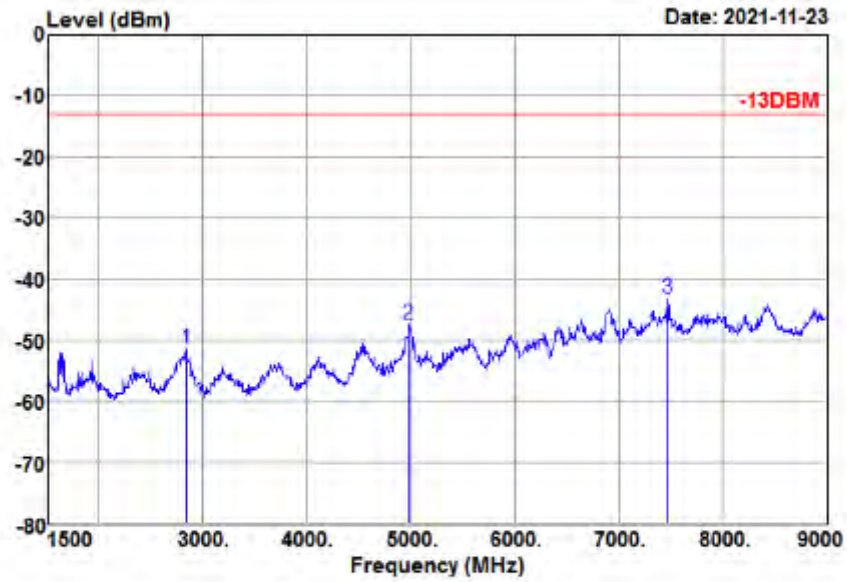
**CH20525:**

| MODE | TX channel 20525 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1657.500 | -57.49 | 6.14 | -51.35 | -13.00 | -38.35 | Peak |
| 4987.500 | -60.02 | 12.45 | -47.57 | -13.00 | -34.57 | Peak |
| 7477.500 | -64.89 | 20.47 | -44.42 | -13.00 | -31.42 | Peak |

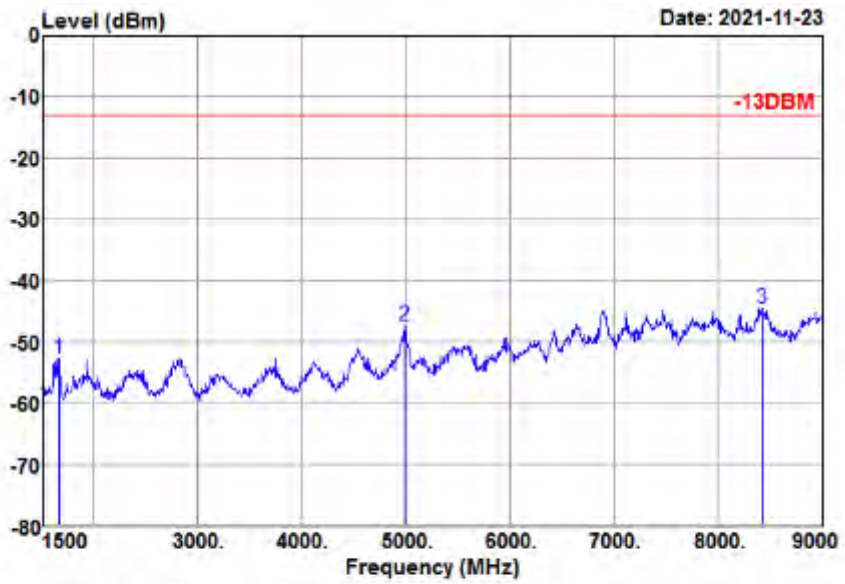
| MODE | TX channel 20525 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 2842.500 | -59.53 | 7.98 | -51.55 | -13.00 | -38.55 | Peak |
| 4980.000 | -60.36 | 12.84 | -47.52 | -13.00 | -34.52 | Peak |
| 7477.500 | -64.15 | 21.02 | -43.13 | -13.00 | -30.13 | Peak |

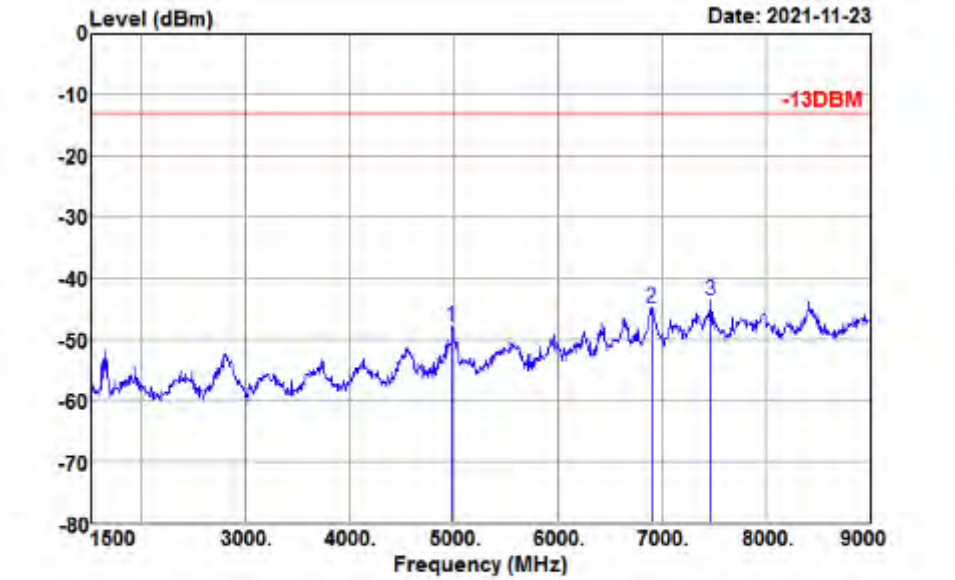
**CH20600:**

| MODE | TX channel 20600 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |




| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 1672.500 | -59.05 | 6.24 | -52.81 | -13.00 | -39.81 | Peak |
| 4995.000 | -60.00 | 12.47 | -47.53 | -13.00 | -34.53 | Peak |
| 8430.000 | -63.73 | 19.25 | -44.48 | -13.00 | -31.48 | Peak |

| MODE | TX channel 20600 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |



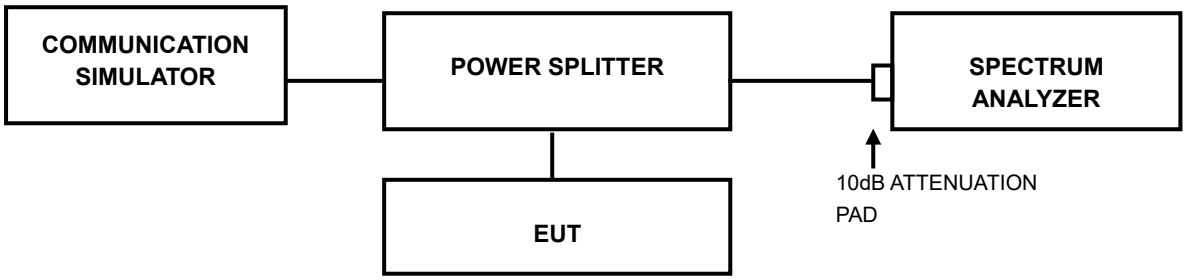

| Freq MHz | Reading level dBm | Aux factor dB | level dBm | Limit level dBm | Over limit dB | Remark |
|---|---|---|---|---|---|---|
| 4980.000 | -60.85 | 12.84 | -48.01 | -13.00 | -35.01 | Peak |
| 6907.500 | -63.37 | 18.57 | -44.80 | -13.00 | -31.80 | Peak |
| 7470.000 | -64.72 | 20.99 | -43.73 | -13.00 | -30.73 | Peak |

## 3.7 PEAK TO AVERAGE RATIO

### 3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

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

### 3.7.2 TEST SETUP




### 3.7.3 TEST PROCEDURES

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. Record the maximum PAPR level associated with a probability of 0.1%.

### 3.7.4 TEST RESULTS

Please Refer to Appendix B Of this test report.

# 4 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

# 5 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

**Shenzhen EMC/RF Lab**:
Tel: +86-755-88696566
Fax: +86-755-88696577

**Email:** customerservice.sw@bureauveritas.com
**Web Site**: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

# 6 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

Please Refer to Appendix B Of this test report.

APPENDIX B :

GSM850

FREQUENCY STABILITY

GSM850

TEST RESULT

| Band: GSM850 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Network | Frequency (MHz) | Temp. (°C) | Voltage (VDC) | Freq. Error (Hz) | Freq. vs. Rated (ppm) | | Verdict |
| | | | | | Result | Limit | |
| GSM | 824.2 | 20 | 3.27 | 0.07 | 0.00 | -2.5 to 2.5 | Pass |
| | | | 3.85 | 1.20 | 0.00 | -2.5 to 2.5 | Pass |
| | | | 4.43 | 0.29 | 0.00 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | 0.19 | 0.00 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | -1.74 | -0.00 | -2.5 to 2.5 | Pass |
| | | -10 | 3.85 | 1.65 | 0.00 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | 1.00 | 0.00 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | 2.26 | 0.00 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | 2.71 | 0.00 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | -0.26 | -0.00 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | 2.81 | 0.00 | -2.5 to 2.5 | Pass |
| | 836.6 | 20 | 3.27 | 2.49 | 0.00 | -2.5 to 2.5 | Pass |
| | | | 3.85 | -0.29 | -0.00 | -2.5 to 2.5 | Pass |
| | | | 4.43 | -0.48 | -0.00 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | 2.42 | 0.00 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | 3.46 | 0.00 | -2.5 to 2.5 | Pass |
| | | -10 | 3.85 | 2.81 | 0.00 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | 2.13 | 0.00 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | 2.87 | 0.00 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | 2.23 | 0.00 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | -0.45 | -0.00 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | 3.49 | 0.00 | -2.5 to 2.5 | Pass |
| | 848.8 | 20 | 3.27 | 0.10 | 0.00 | -2.5 to 2.5 | Pass |
| | | | 3.85 | 2.71 | 0.00 | -2.5 to 2.5 | Pass |
| | | | 4.43 | 2.23 | 0.00 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | 4.91 | 0.01 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | 2.10 | 0.00 | -2.5 to 2.5 | Pass |
| | | -10 | 3.85 | 2.94 | 0.00 | -2.5 to 2.5 | Pass |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 0 | 3.85 | -1.45 | -0.00 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | 3.10 | 0.00 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | -1.97 | -0.00 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | 2.36 | 0.00 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | 1.39 | 0.00 | -2.5 to 2.5 | Pass |
| EGPRS | 824.2 | 20 | 3.27 | 4.20 | 0.01 | -2.5 to 2.5 | Pass |
| | | | 3.85 | 0.61 | 0.00 | -2.5 to 2.5 | Pass |
| | | | 4.43 | 7.01 | 0.01 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | 0.00 | 0.00 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | 3.97 | 0.00 | -2.5 to 2.5 | Pass |
| | | -10 | 3.85 | 1.23 | 0.00 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | 1.23 | 0.00 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | 1.87 | 0.00 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | 2.71 | 0.00 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | 6.46 | 0.01 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | 1.49 | 0.00 | -2.5 to 2.5 | Pass |
| | 836.6 | 20 | 3.27 | 5.04 | 0.01 | -2.5 to 2.5 | Pass |
| | | | 3.85 | -0.52 | -0.00 | -2.5 to 2.5 | Pass |
| | | | 4.43 | -0.45 | -0.00 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | 0.81 | 0.00 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | 6.59 | 0.01 | -2.5 to 2.5 | Pass |
| | | -10 | 3.85 | 0.35 | 0.00 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | 6.10 | 0.01 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | 2.78 | 0.00 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | 2.07 | 0.00 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | 2.29 | 0.00 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | 5.10 | 0.01 | -2.5 to 2.5 | Pass |
| | 848.8 | 20 | 3.27 | 0.61 | 0.00 | -2.5 to 2.5 | Pass |
| | | | 3.85 | 1.55 | 0.00 | -2.5 to 2.5 | Pass |
| | | | 4.43 | 4.23 | 0.01 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | 6.59 | 0.01 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | 2.36 | 0.00 | -2.5 to 2.5 | Pass |
| | | -10 | 3.85 | 3.87 | 0.00 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | 4.65 | 0.01 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | 3.62 | 0.00 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | 0.26 | 0.00 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | 6.23 | 0.01 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | 4.97 | 0.01 | -2.5 to 2.5 | Pass |

99% & 26DB BANDWIDTH

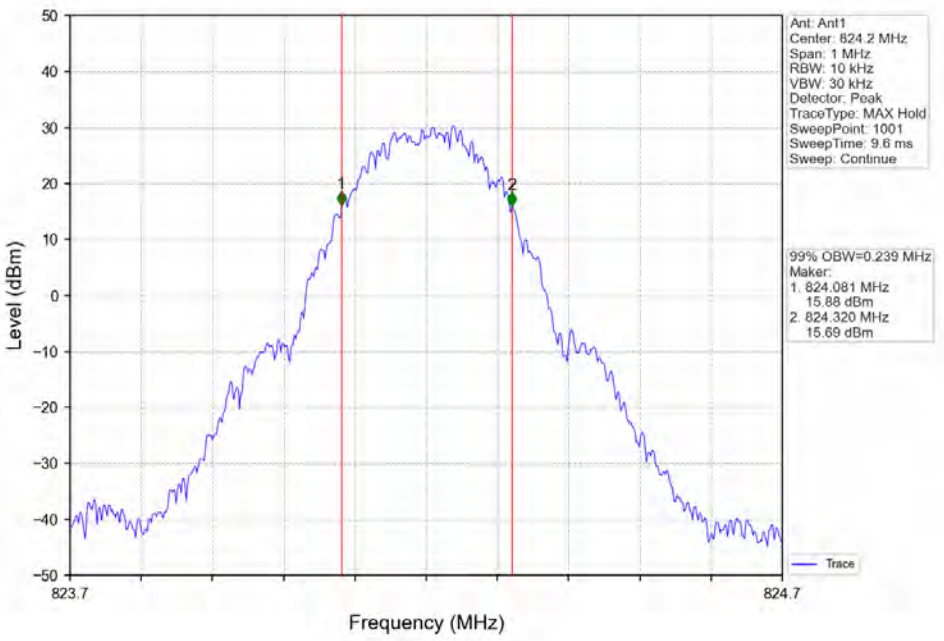
GSM850_OBW

TEST RESULT

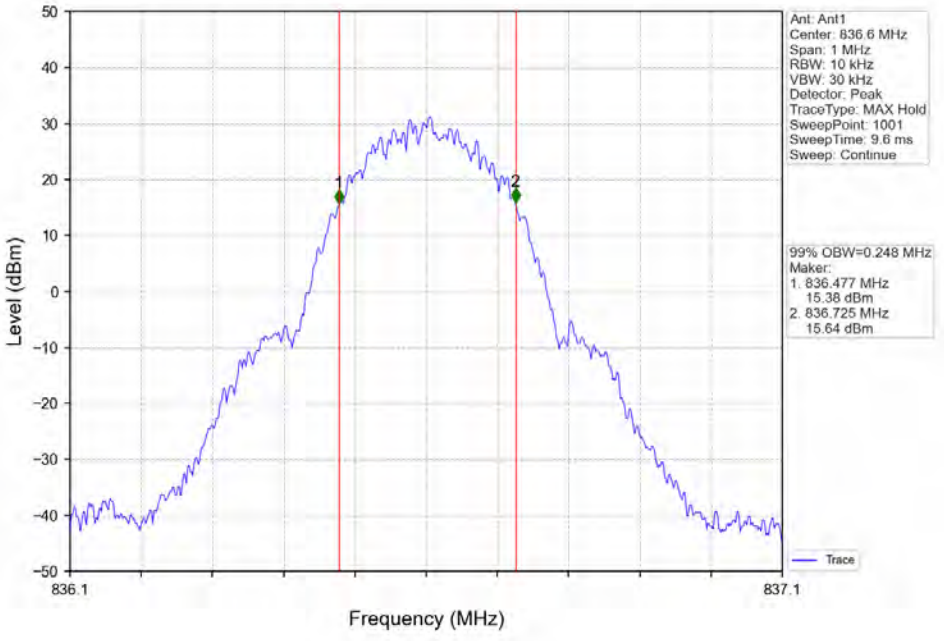
| Band: GSM850 | | | | | |
|---|---|---|---|---|---|
| ENV | Mode | | Frequency (MHz) | 99% Occupied Bandwidth (MHz) Result | Verdict |
| | Network | Subset | | | |
| NTNV | GSM | / | 824.2 | 0.239 | Pass |
| | | | 836.6 | 0.248 | Pass |
| | | | 848.8 | 0.238 | Pass |
| | EGPRS | / | 824.2 | 0.244 | Pass |
| | | | 836.6 | 0.243 | Pass |
| | | | 848.8 | 0.241 | Pass |

## TEST GRAPH

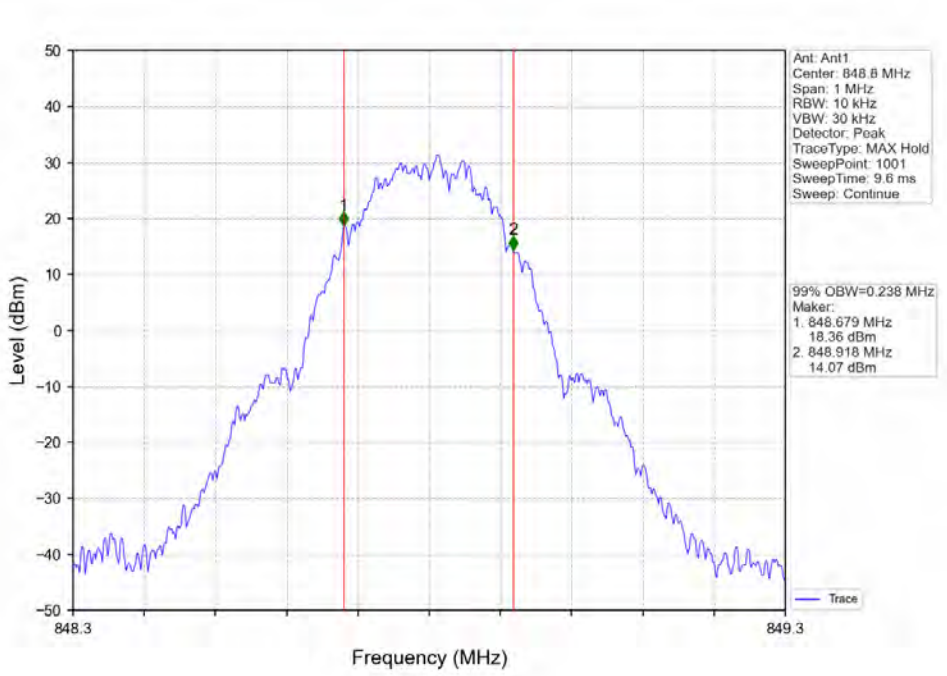
GSM850_ GSM _LCH_824.2MHz_NTNV



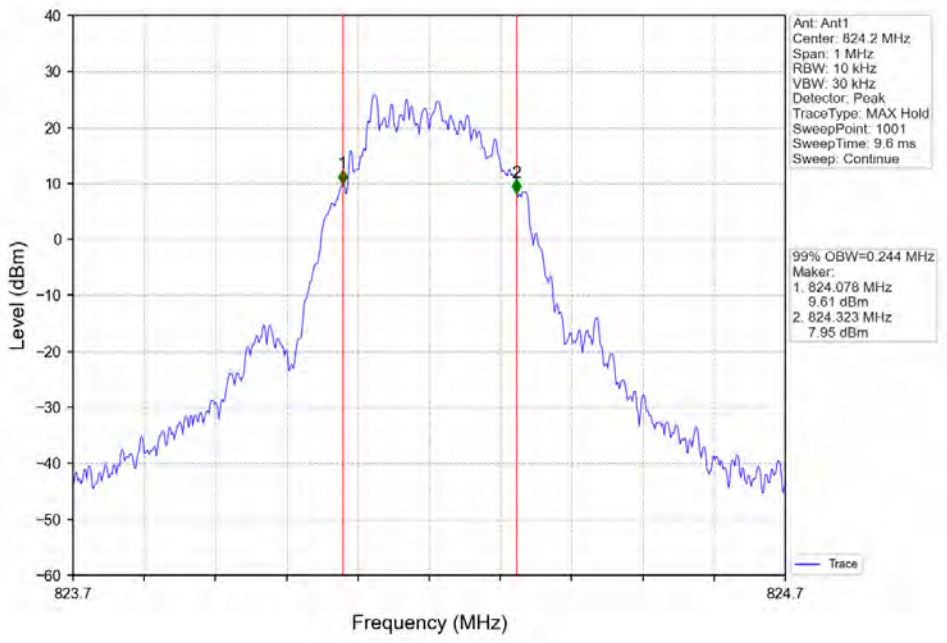

GSM850_GSM_MCH_836.6MHz_NTNV



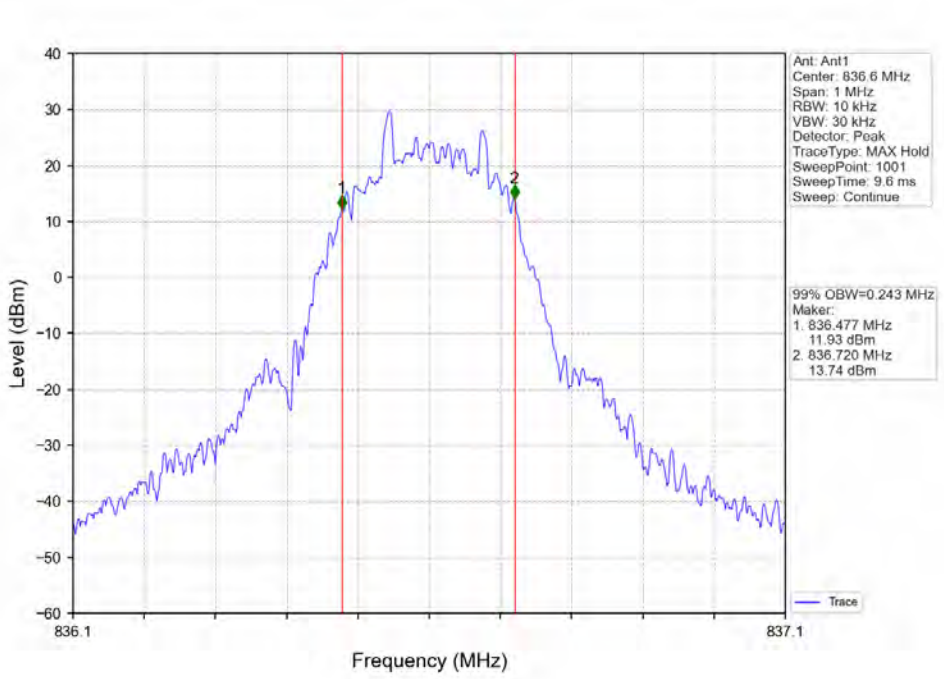
GSM850_GSM_HCH_848.8MHz_NTNV



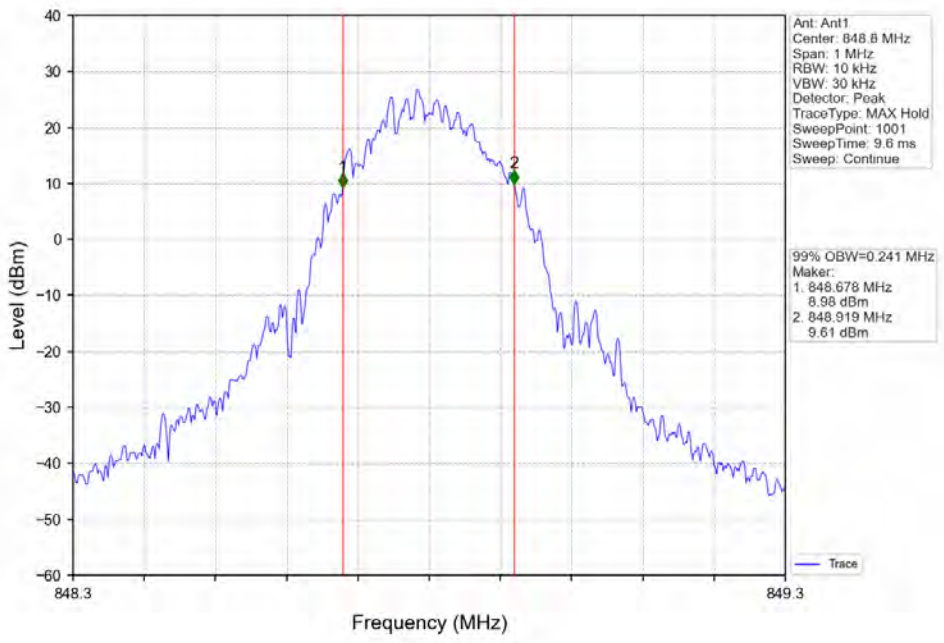

GSM850_EGPRS_LCH_824.2MHz_NTNV



GSM850_EGPRS_MCH_836.6MHz_NTNV




GSM850_EGPRS_HCH_848.8MHz_NTNV



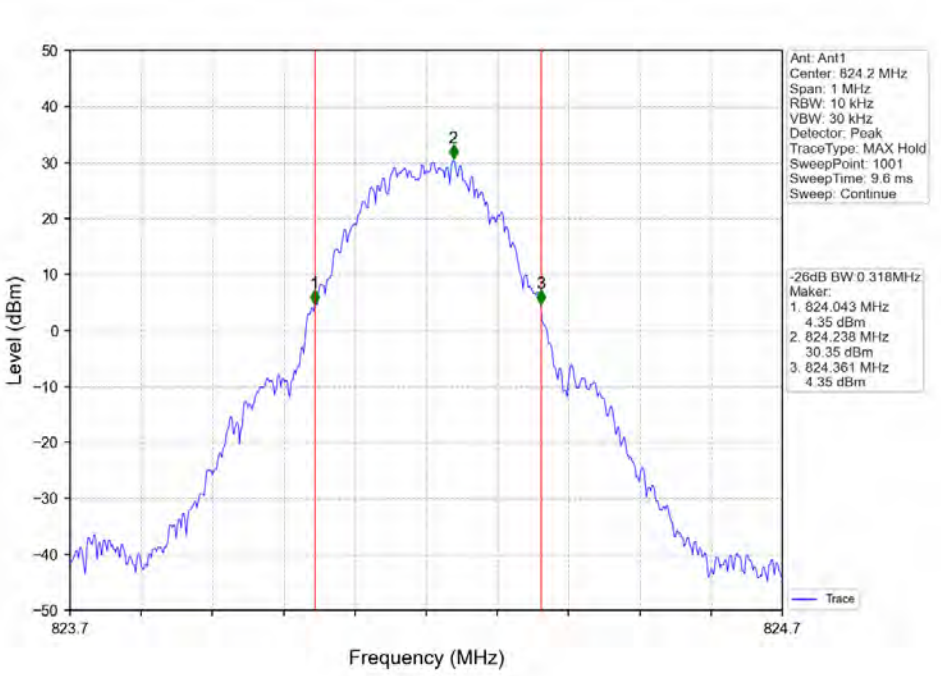
GSM850_XDB

TEST RESULT

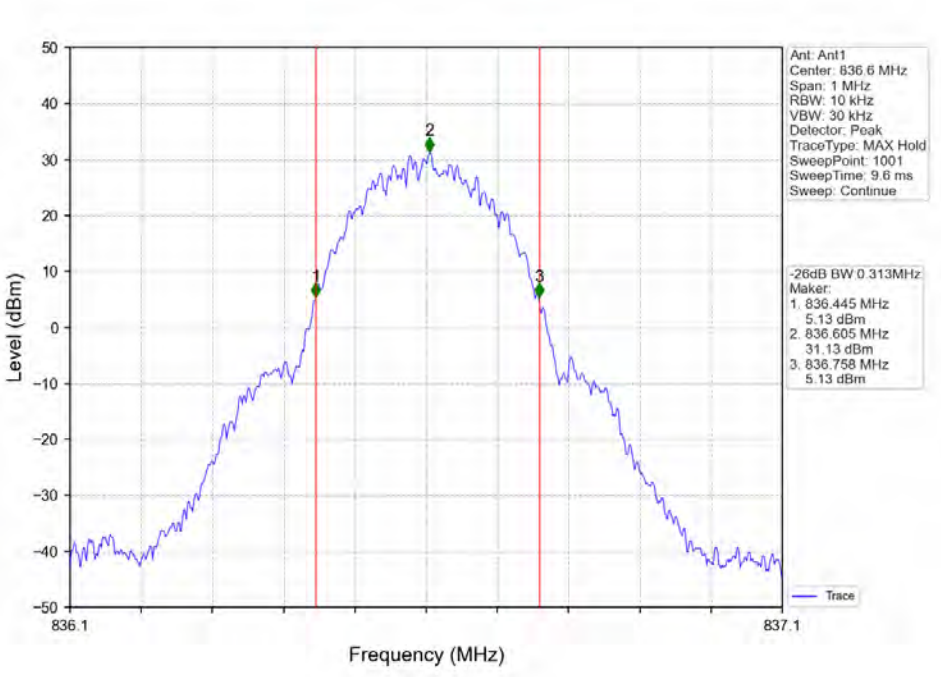
| Band: GSM850 | | | | | |
|---|---|---|---|---|---|
| ENV | Mode | | Frequency (MHz) | 26dB Bandwidth (MHz) | Verdict |
| | Network | Subset | | Result | |
| NTNV | GSM | 1 TX Slot | 824.2 | 0.318 | Pass |
| | | | 836.6 | 0.313 | Pass |
| | | | 848.8 | 0.308 | Pass |
| | EGPRS | 1 TX Slot | 824.2 | 0.304 | Pass |
| | | | 836.6 | 0.279 | Pass |
| | | | 848.8 | 0.306 | Pass |

## TEST GRAPH

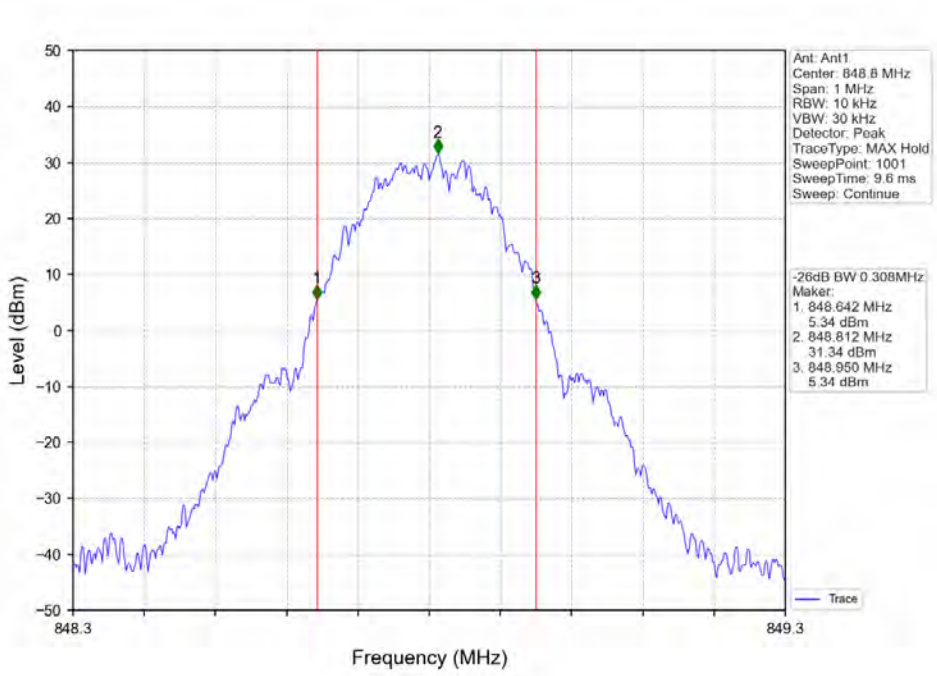
GSM850_GSM_LCH_824.2MHz_NTNV



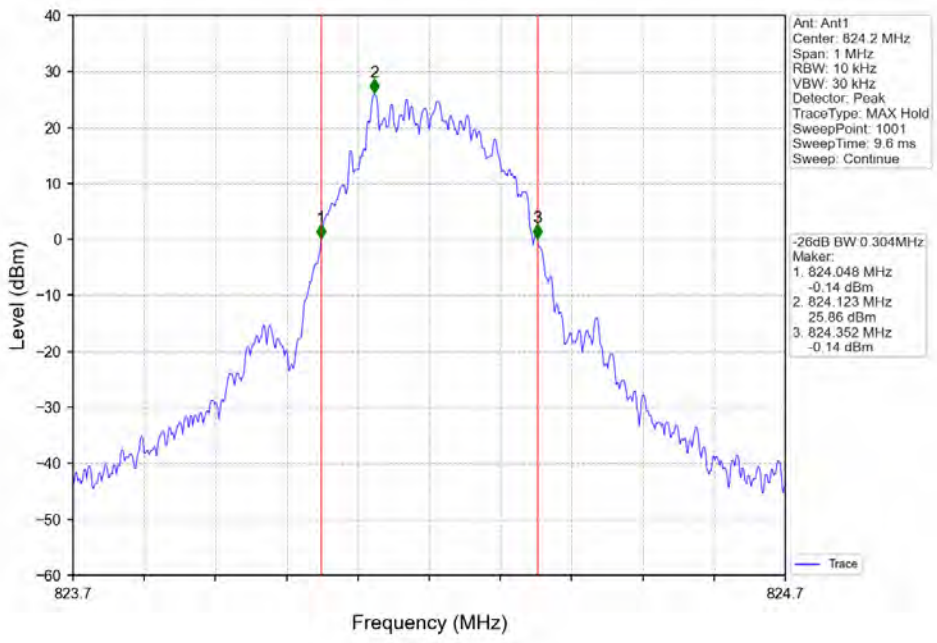

GSM850_ GSM _MCH_836.6MHz_NTNV



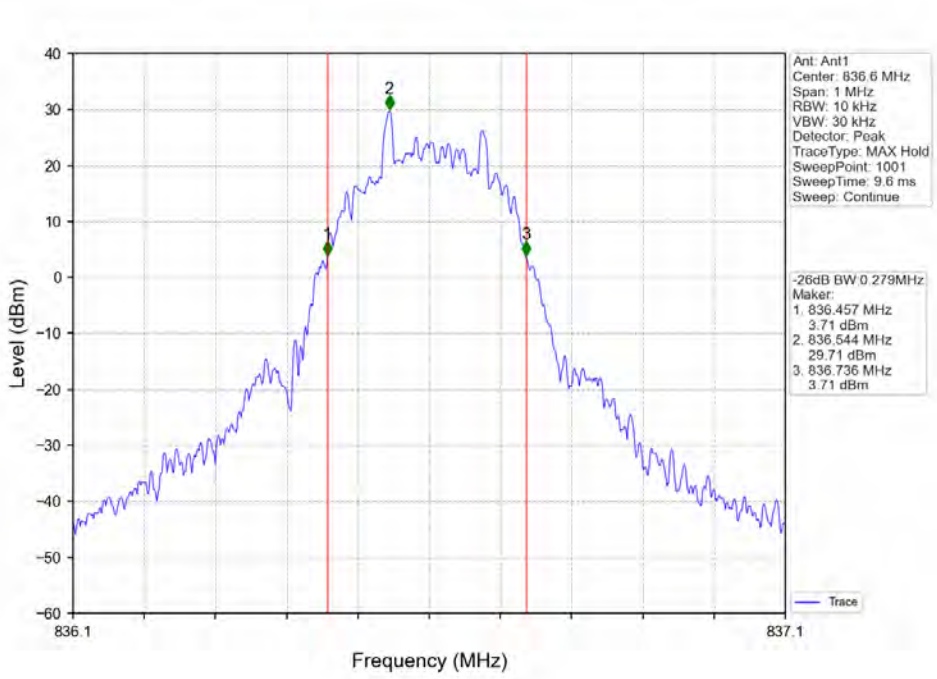
GSM850_GSM_HCH_848.8MHz_NTNV



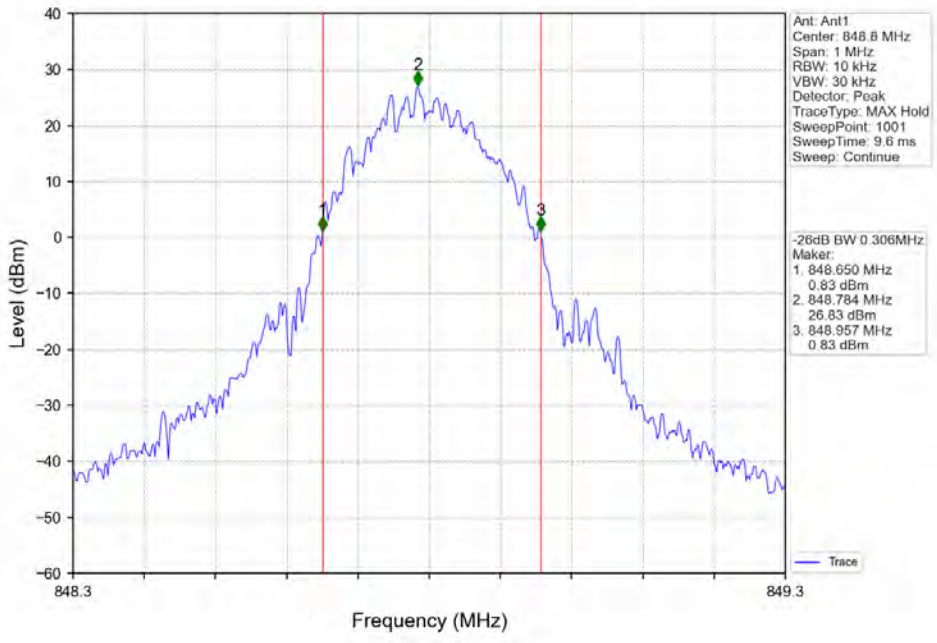

GSM850_EGPRS_LCH_824.2MHz_NTNV



GSM850_EGPRS_MCH_836.6MHz_NTNV




GSM850_EGPRS_HCH_848.8MHz_NTNV



# PEAK-AVERAGE RATIO

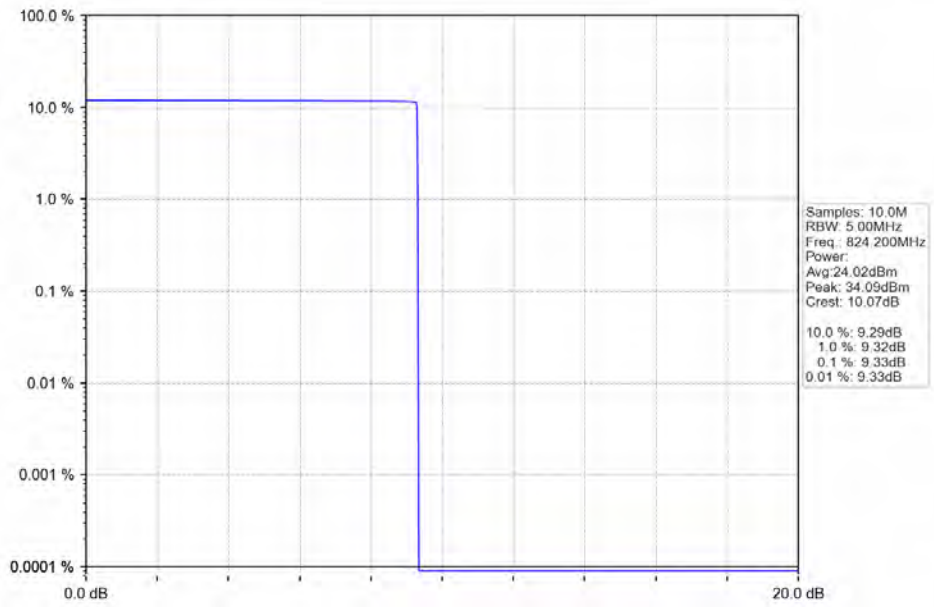
## GSM850

## TEST RESULT

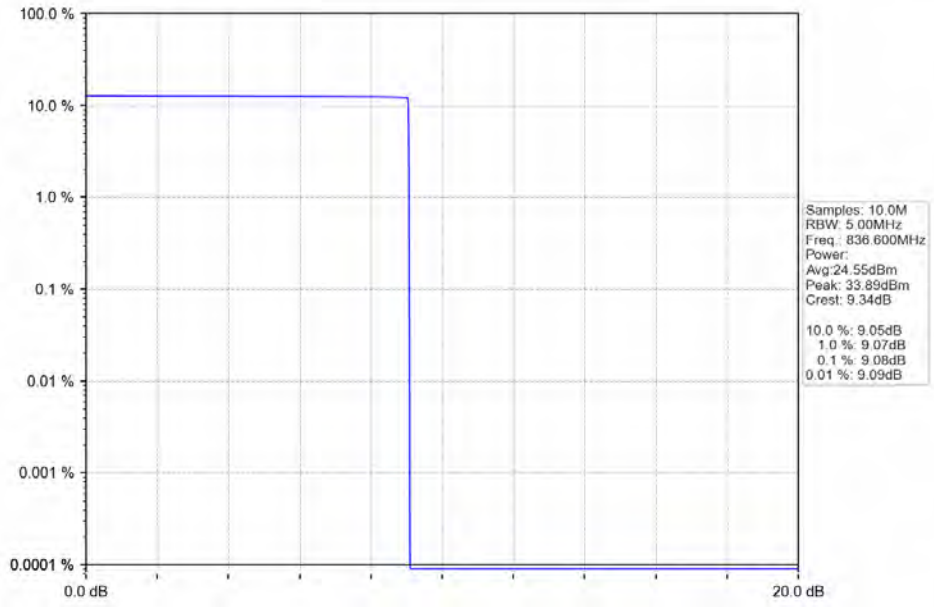
| Band: GSM850 | | | | | | |
|---|---|---|---|---|---|---|
| ENV | Mode | | Frequency (MHz) | Peak-Average Ratio (dB) | | Verdict |
| | Network | Subset | | Result | Limit | |
| NTNV | GSM | / | 824.2 | 9.33 | <=13 | Pass |
| | | | 836.6 | 9.08 | <=13 | Pass |
| | | | 848.8 | 3.57 | <=13 | Pass |
| | EGPRS | / | 824.2 | 9.62 | <=13 | Pass |
| | | | 836.6 | 9.95 | <=13 | Pass |
| | | | 848.8 | 9.65 | <=13 | Pass |

## TEST GRAPH

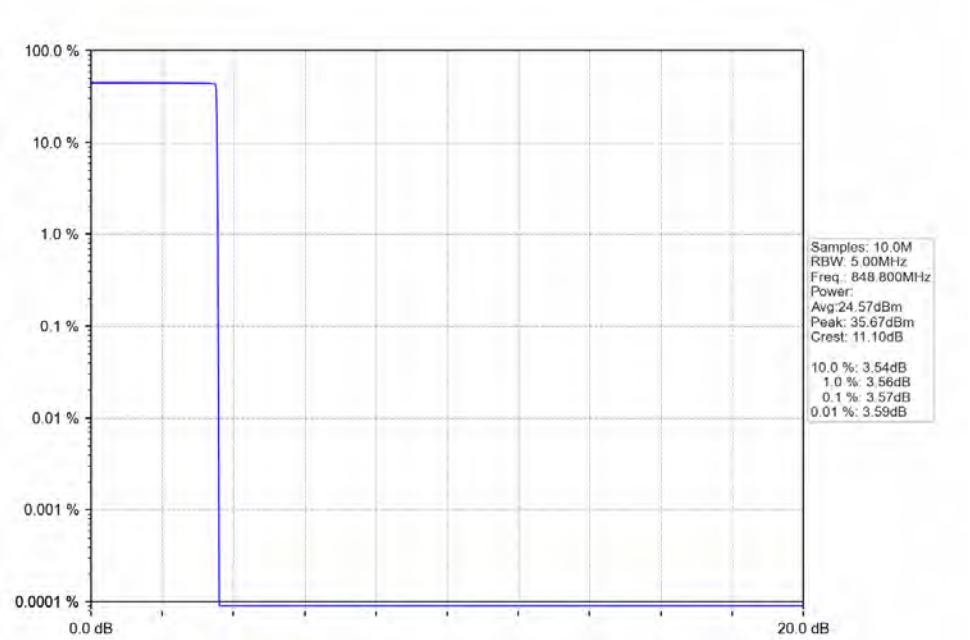
GSM850_GSM_LCH_824.2MHz_NTNV



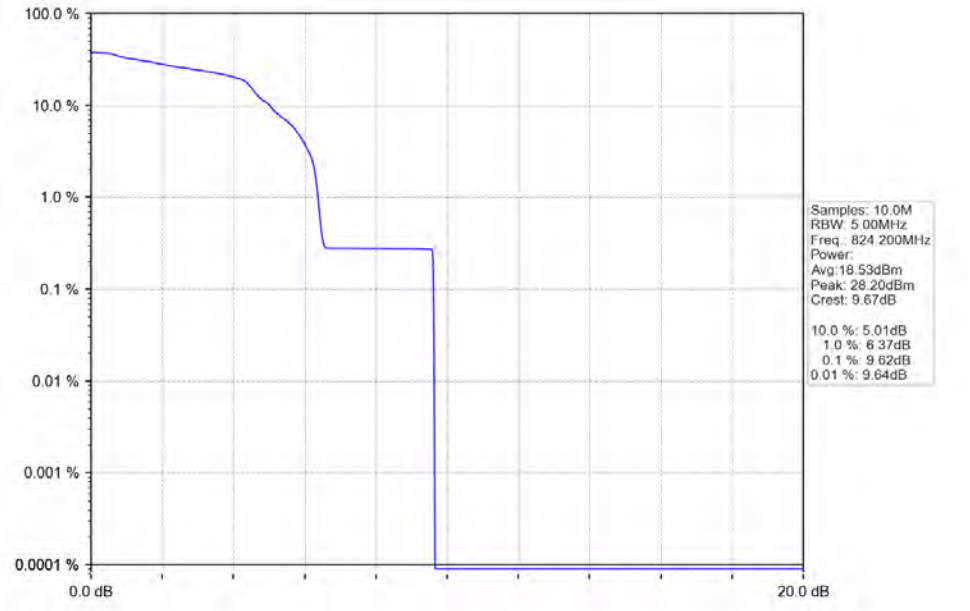

GSM850_GSM_MCH_836.6MHz_NTNV



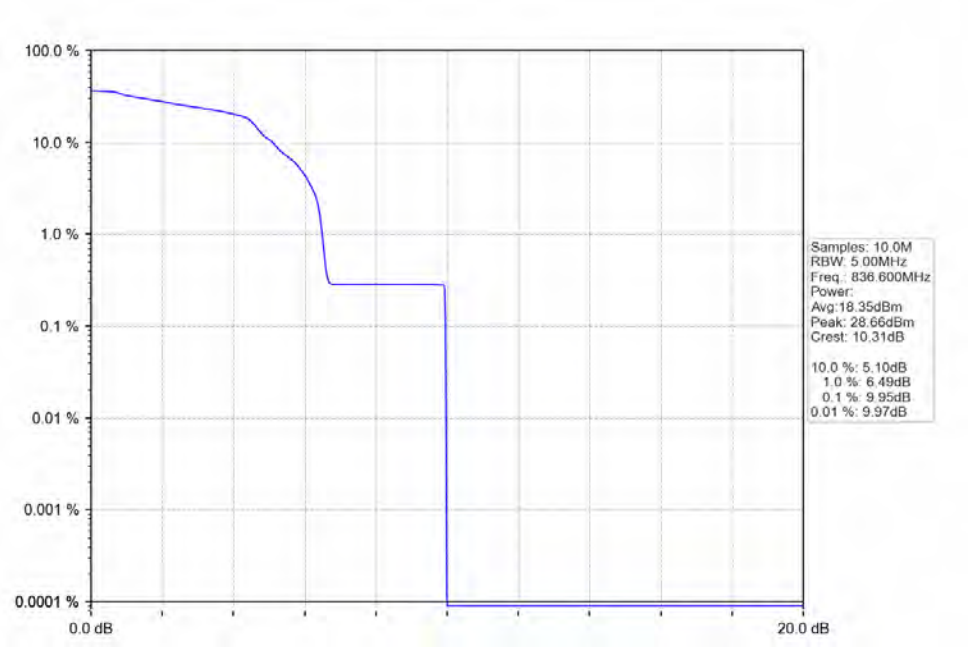
GSM850_GSM_HCH_848.8MHz_NTNV



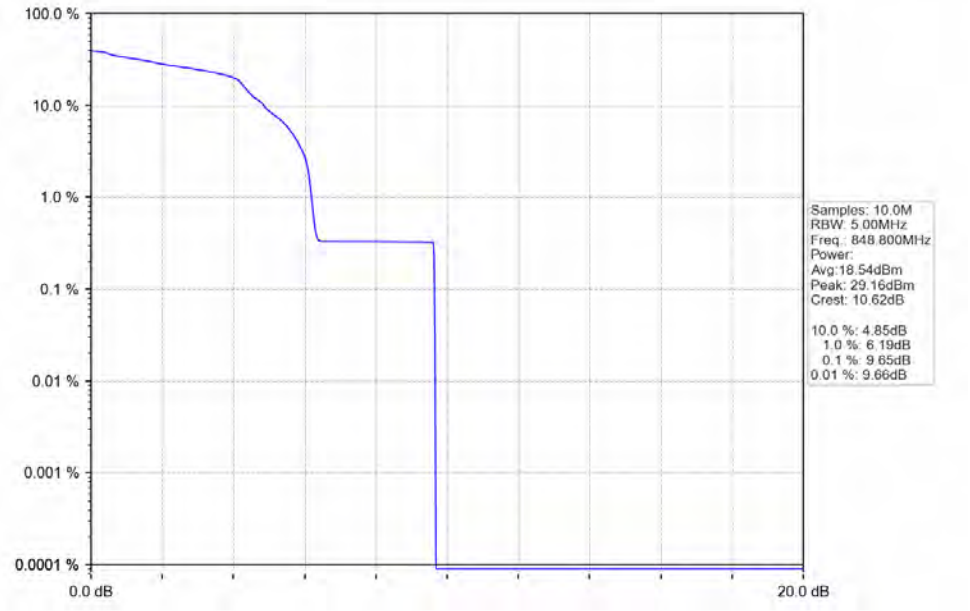

GSM850_EGPRS_LCH_824.2MHz_NTNV



GSM850_EGPRS_MCH_836.6MHz_NTNV




GSM850_EGPRS_HCH_848.8MHz _NTNV



## SPURIOUS EMISSION

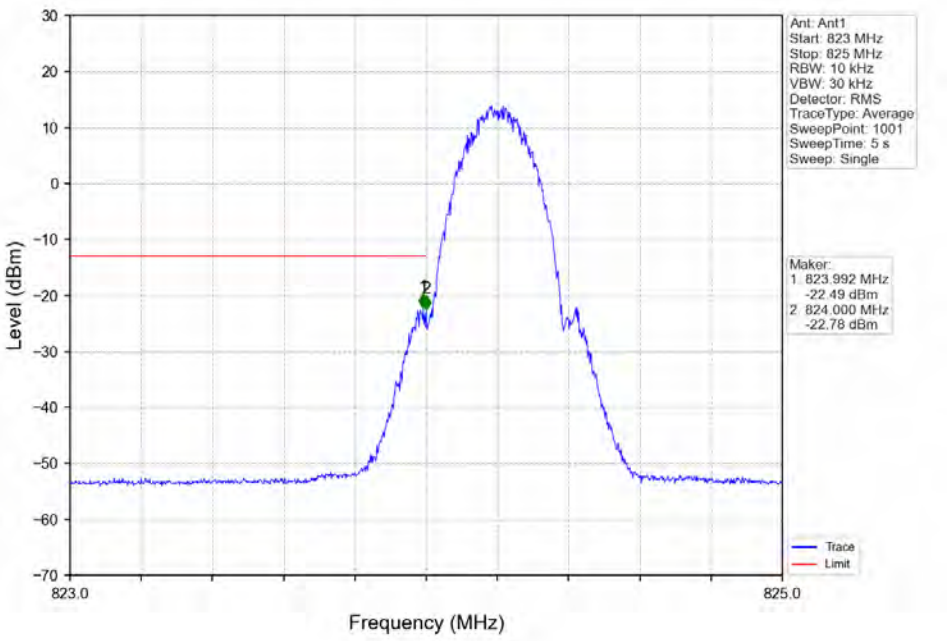
## GSM850

## TEST RESULT

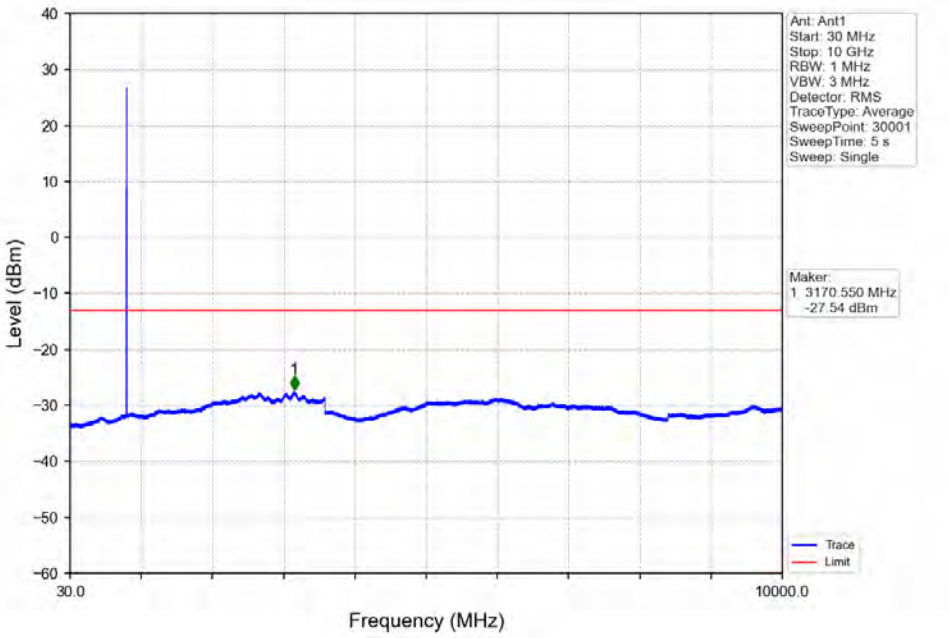
| Band: GSM850 | | | | | | |
|---|---|---|---|---|---|---|
| ENV | Mode | | Frequency (MHz) | Spurious Emission | | Verdict |
| | Network | Subset | | Result | Limit | |
| NTNV | GSM | / | 824.2 | Refer To Test Graph | | Pass |
| | | | 836.6 | Refer To Test Graph | | Pass |
| | | | 848.8 | Refer To Test Graph | | Pass |
| | EGPRS | / | 824.2 | Refer To Test Graph | | Pass |
| | | | 836.6 | Refer To Test Graph | | Pass |
| | | | 848.8 | Refer To Test Graph | | Pass |

## TEST GRAPH

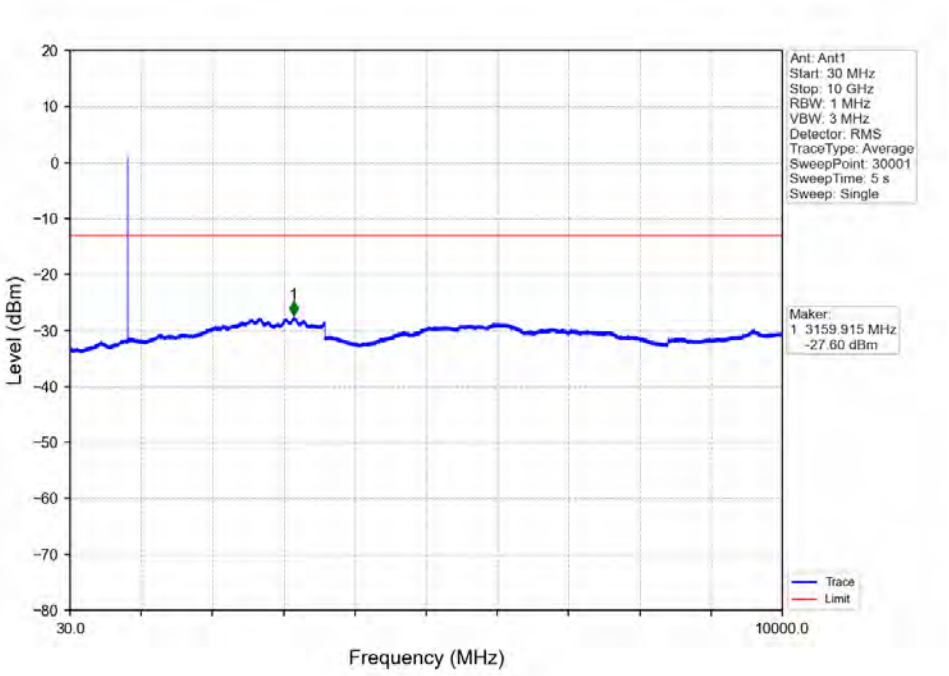
GSM850_GSM_LCH_824.2MHz_NTNV



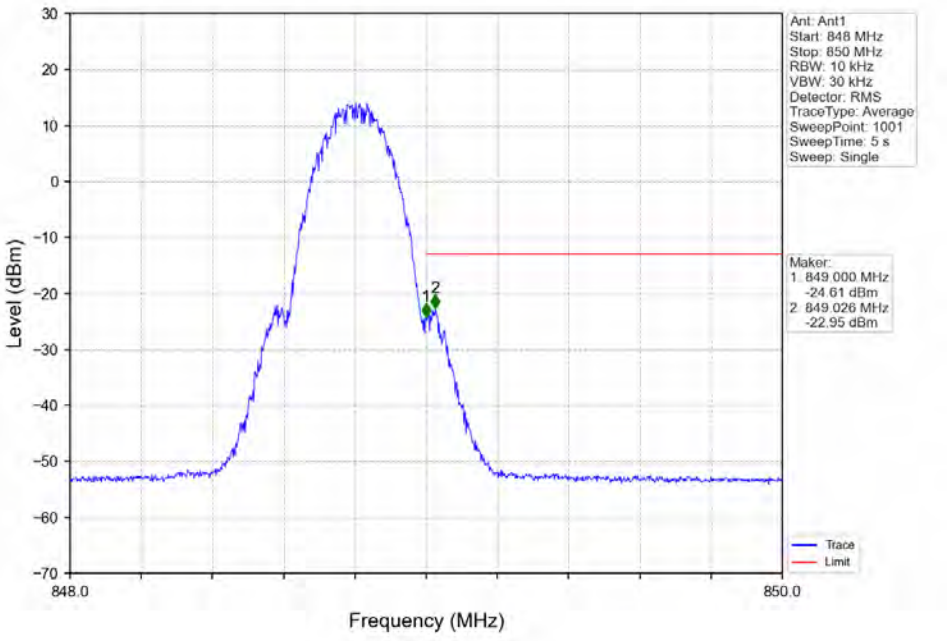

GSM850_GSM_LCH_824.2MHz_NTNV



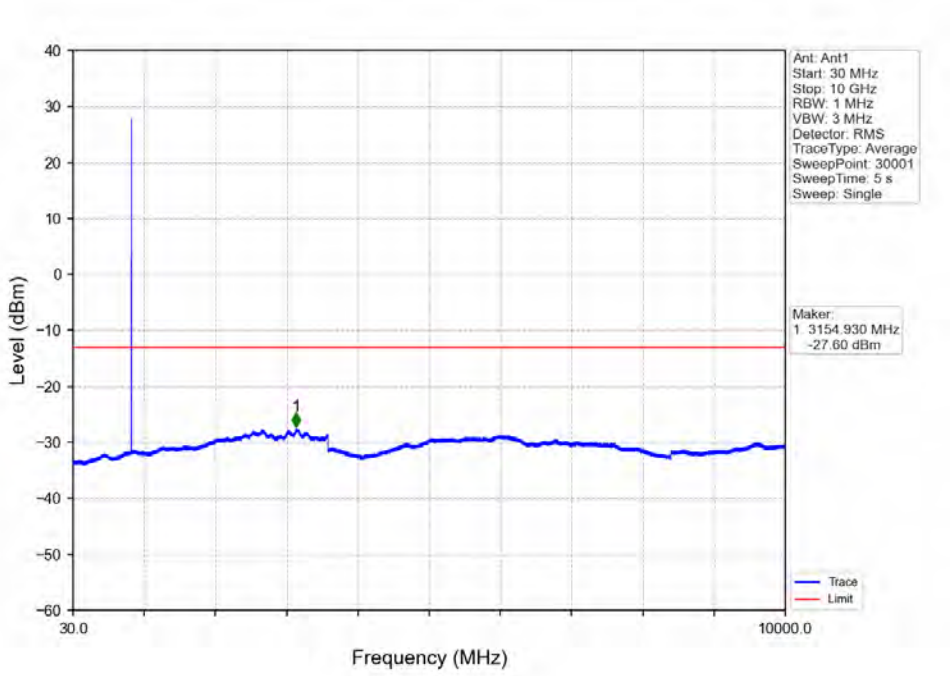
GSM850_GSM_MCH_836.6MHz_NTNV



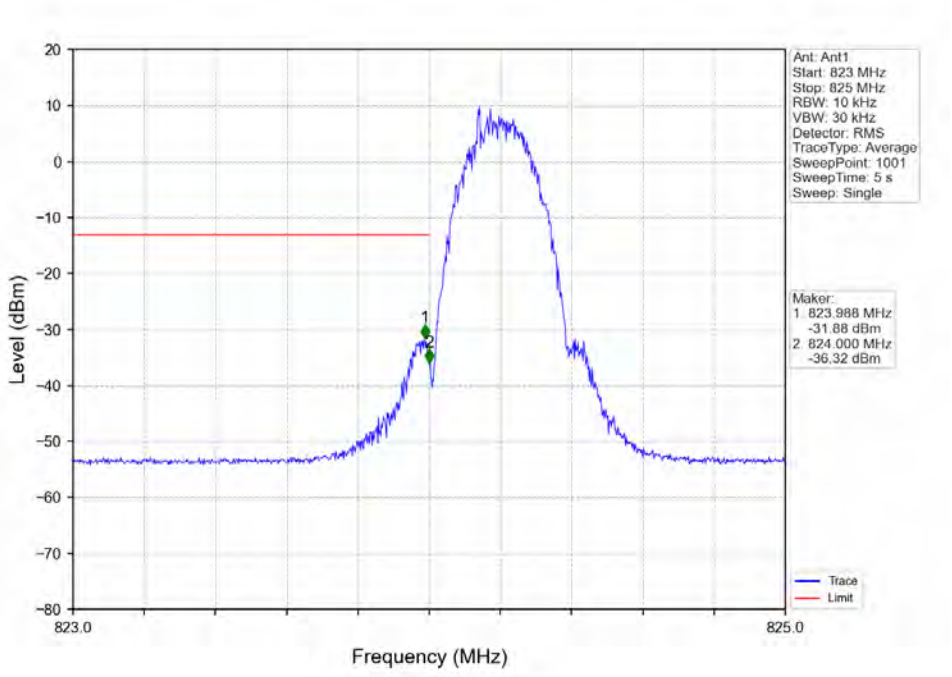

GSM850_ GSM _HCH_848.8MHz_NTNV



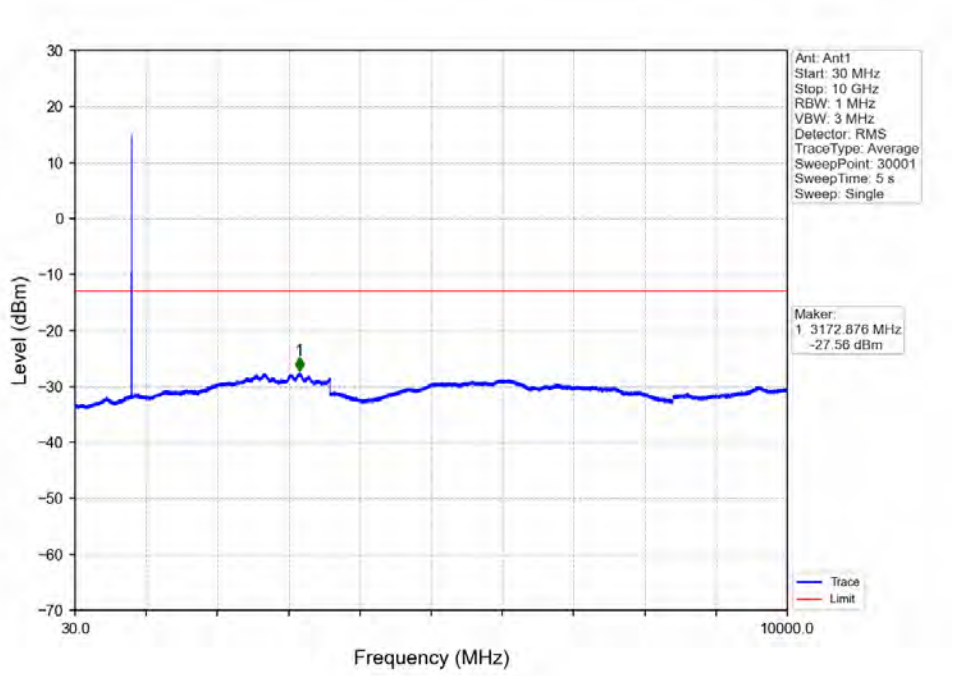
GSM850_GSM_HCH_848.8MHz_NTNV



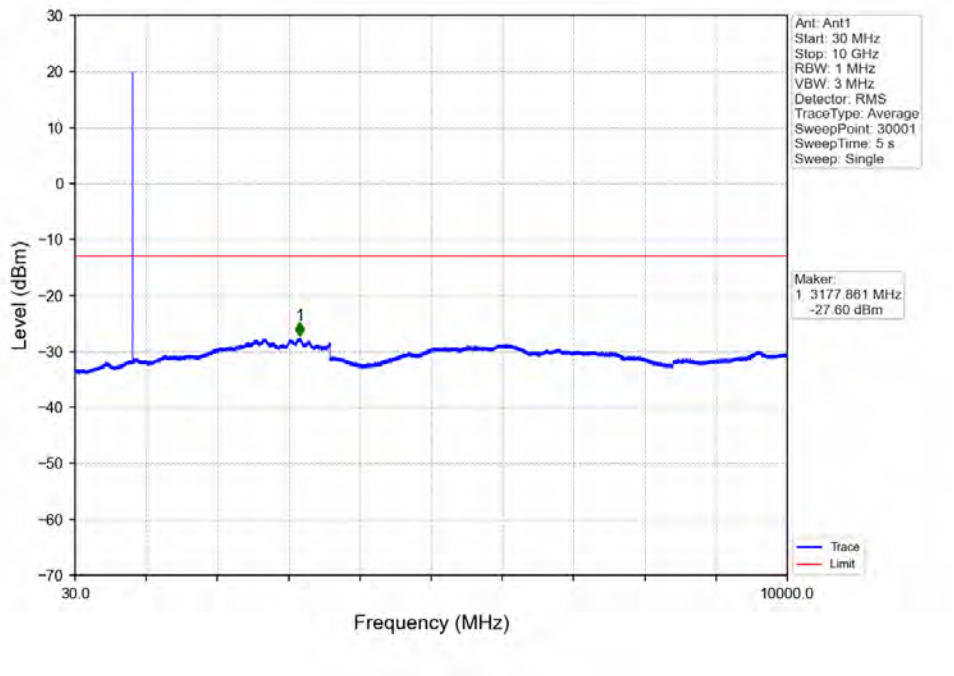

GSM850_EGPRS_LCH_824.2MHz_NTNV



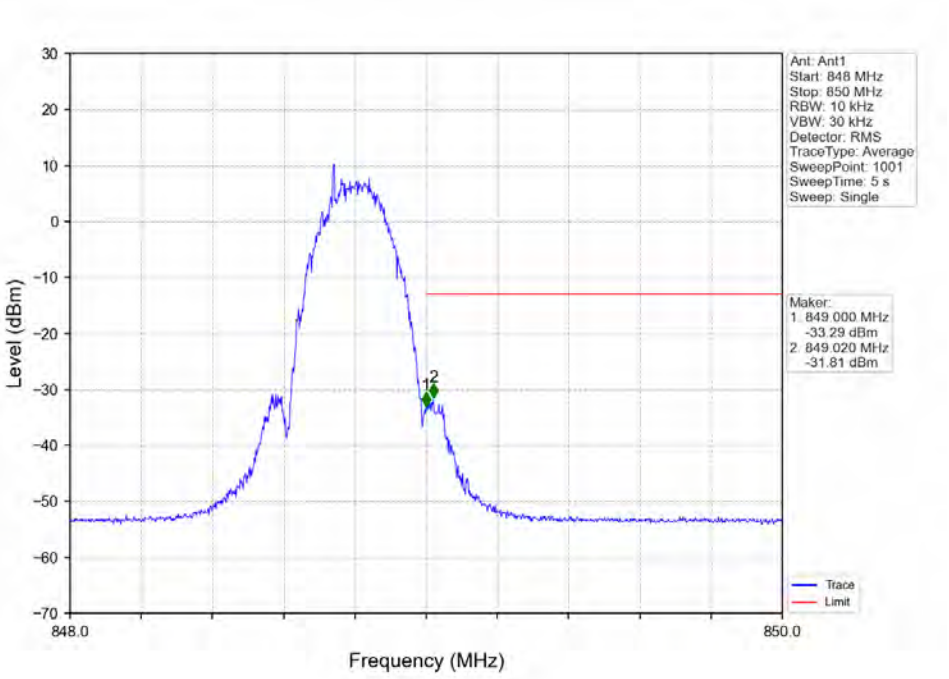
GSM850_EGPRS_LCH_824.2MHz_NTNV



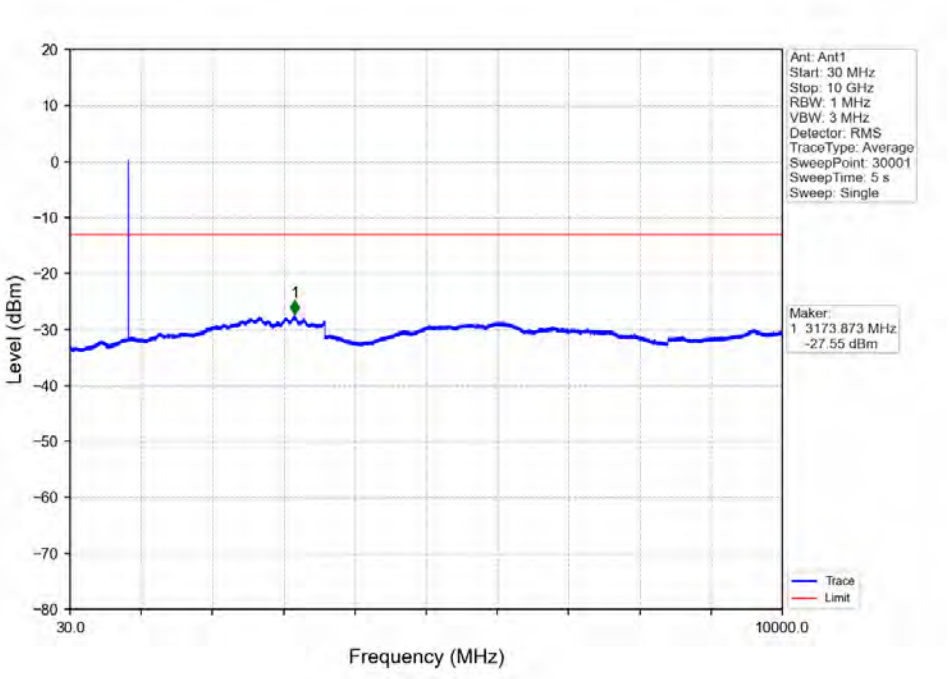

GSM850_EGPRS_MCH_836.6MHz_NTNV



GSM850_EGPRS_HCH_848.8MHz _NTNV




GSM850_EGPRS_HCH_848.8MHz_NTNV



WCDMA BAND5

FREQUENCY STABILITY

BAND5

TEST RESULT

| Band: 5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Network | Frequency (MHz) | Temp. (°C) | Voltage (VDC) | Freq. Error (Hz) | Freq. vs. Rated (ppm) | | Verdict |
| | | | | | Result | Limit | |
| RMC | 826.4 | 20 | 3.27 | -2.99 | -0.00 | -2.5 to 2.5 | Pass |
| | | | 3.85 | -1.14 | -0.00 | -2.5 to 2.5 | Pass |
| | | | 4.43 | -2.79 | -0.00 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | -0.88 | -0.00 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | -5.82 | -0.01 | -2.5 to 2.5 | Pass |
| | | -10 | 3.85 | -4.61 | -0.01 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | -5.64 | -0.01 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | -5.07 | -0.01 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | -4.69 | -0.01 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | -5.25 | -0.01 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | -4.15 | -0.01 | -2.5 to 2.5 | Pass |
| | 836.6 | 20 | 3.27 | -4.61 | -0.01 | -2.5 to 2.5 | Pass |
| | | | 3.85 | -6.13 | -0.01 | -2.5 to 2.5 | Pass |
| | | | 4.43 | -2.09 | -0.00 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | -2.37 | -0.00 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | -3.41 | -0.00 | -2.5 to 2.5 | Pass |
| | | -10 | 3.85 | -2.54 | -0.00 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | -4.74 | -0.01 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | -4.69 | -0.01 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | -6.70 | -0.01 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | -2.89 | -0.00 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | -5.14 | -0.01 | -2.5 to 2.5 | Pass |
| | 846.6 | 20 | 3.27 | -2.48 | -0.00 | -2.5 to 2.5 | Pass |
| | | | 3.85 | -3.51 | -0.00 | -2.5 to 2.5 | Pass |
| | | | 4.43 | -2.67 | -0.00 | -2.5 to 2.5 | Pass |
| | | -30 | 3.85 | -5.36 | -0.01 | -2.5 to 2.5 | Pass |
| | | -20 | 3.85 | -3.48 | -0.00 | -2.5 to 2.5 | Pass |
| | | -10 | 3.85 | -5.76 | -0.01 | -2.5 to 2.5 | Pass |
| | | 0 | 3.85 | -5.29 | -0.01 | -2.5 to 2.5 | Pass |
| | | 10 | 3.85 | -6.81 | -0.01 | -2.5 to 2.5 | Pass |
| | | 30 | 3.85 | -1.87 | -0.00 | -2.5 to 2.5 | Pass |
| | | 40 | 3.85 | -2.90 | -0.00 | -2.5 to 2.5 | Pass |
| | | 50 | 3.85 | -3.15 | -0.00 | -2.5 to 2.5 | Pass |

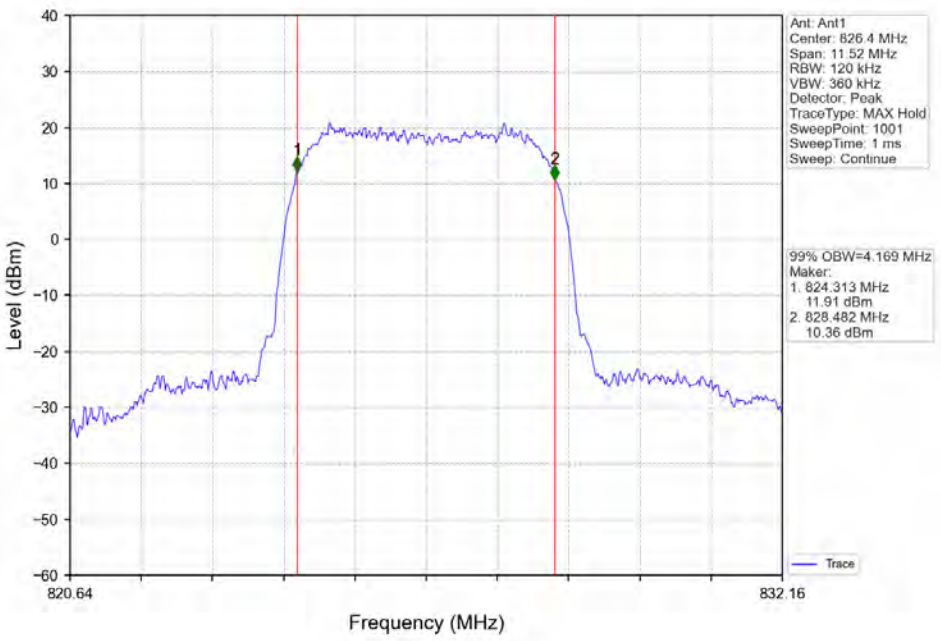
99% & 26DB BANDWIDTH

WCDMA _OBW

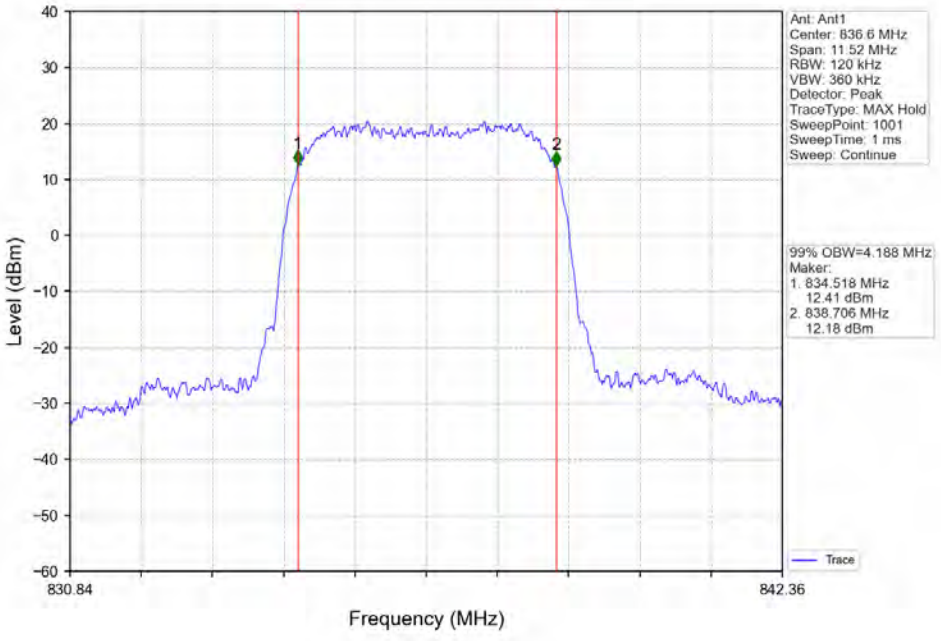
TEST RESULT

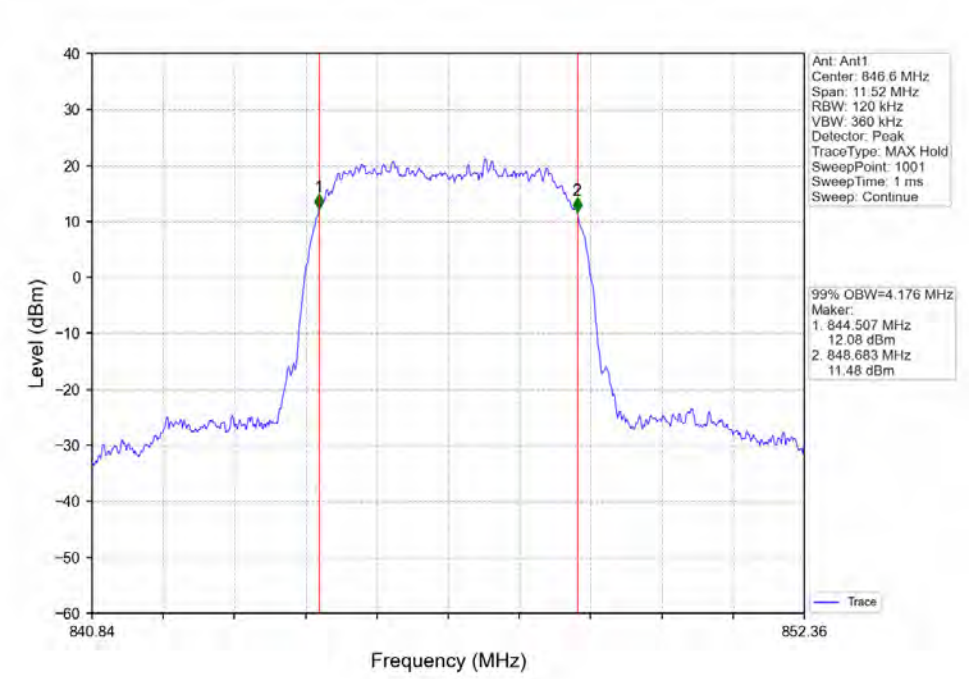
| Band: 5 | | | | | |
|---|---|---|---|---|---|
| ENV | Mode | | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Verdict |
| | Network | Subset | | Result | |
| NTNV | RMC | 12.2kbps RMC | 826.4 | 4.169 | Pass |
| | | | 836.6 | 4.188 | Pass |
| | | | 846.6 | 4.176 | Pass |

## TEST GRAPH

| Band5_RMC_LCH_826.4MHz_12.2kbps RMC_NTNV |
|---|
|  |



| Band5_RMC_MCH_836.6MHz_12.2kbps RMC_NTNV |
|---|
|  |

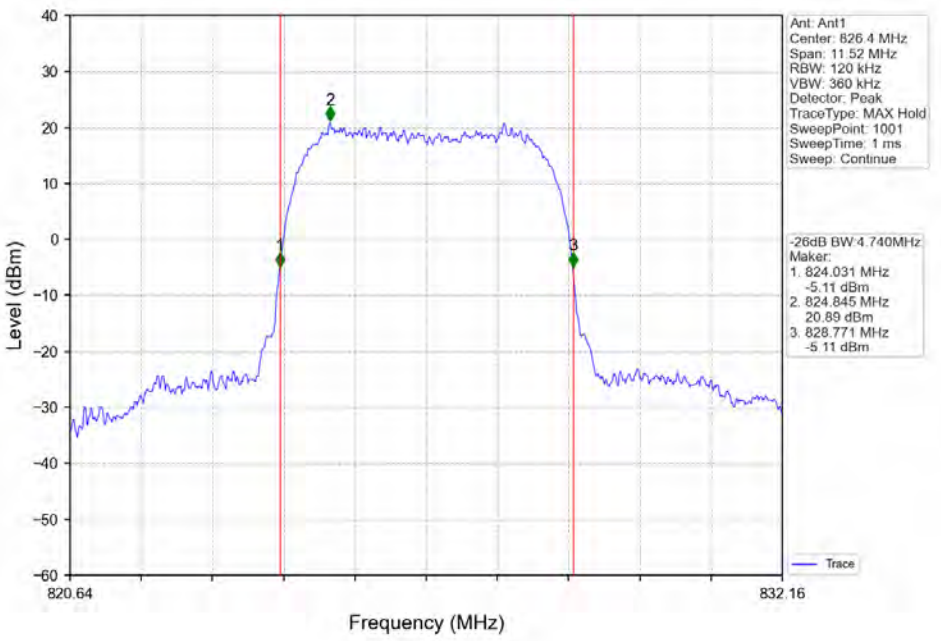
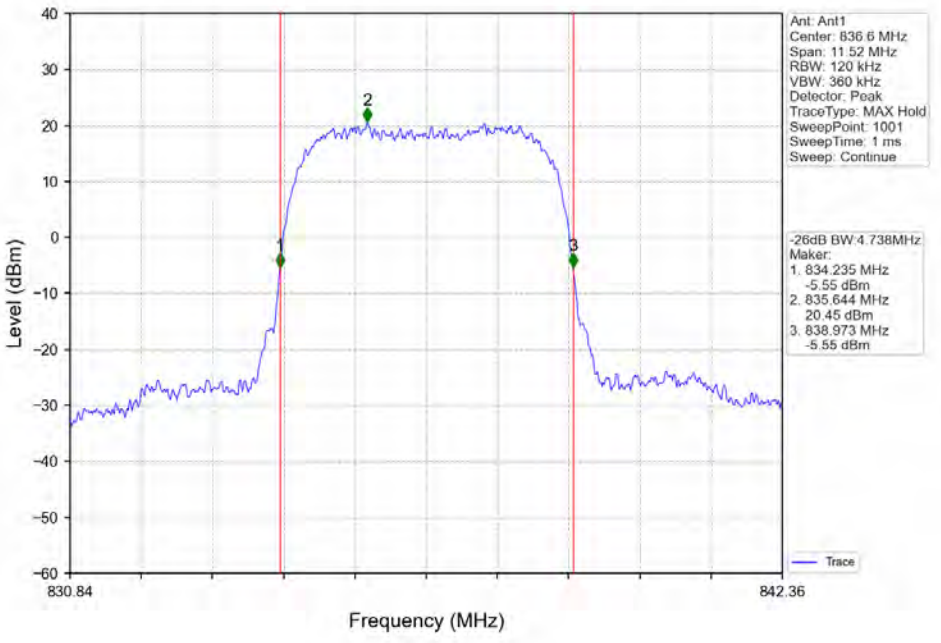
| Band5_RMC_HCH_846.6MHz_12.2kbps RMC_NTNV |
|---|
|  |

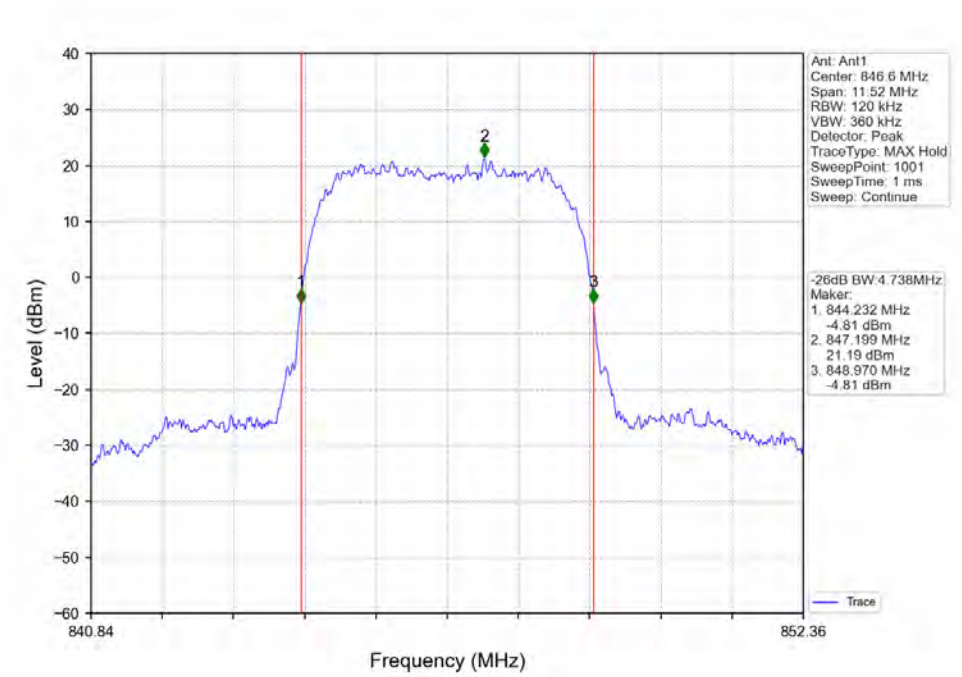
BAND5_XDB

TEST RESULT

| Band: 5 | | | | | |
|---|---|---|---|---|---|
| ENV | Mode | | Frequency (MHz) | 26dB Bandwidth (MHz) | Verdict |
| | Network | Subset | | Result | |
| NTNV | RMC | 12.2kbps RMC | 826.4 | 4.740 | Pass |
| | | | 836.6 | 4.738 | Pass |
| | | | 846.6 | 4.738 | Pass |

## TEST GRAPH

| Band5_RMC_LCH_826.4MHz_12.2kbps RMC_NTNV |
| --- |
|  |
| Band5_RMC_MCH_836.6MHz_12.2kbps RMC_NTNV |
|  |

| Band5_RMC_HCH_846.6MHz_12.2kbps RMC_NTNV |
| --- |
|  |

## PEAK-AVERAGE RATIO

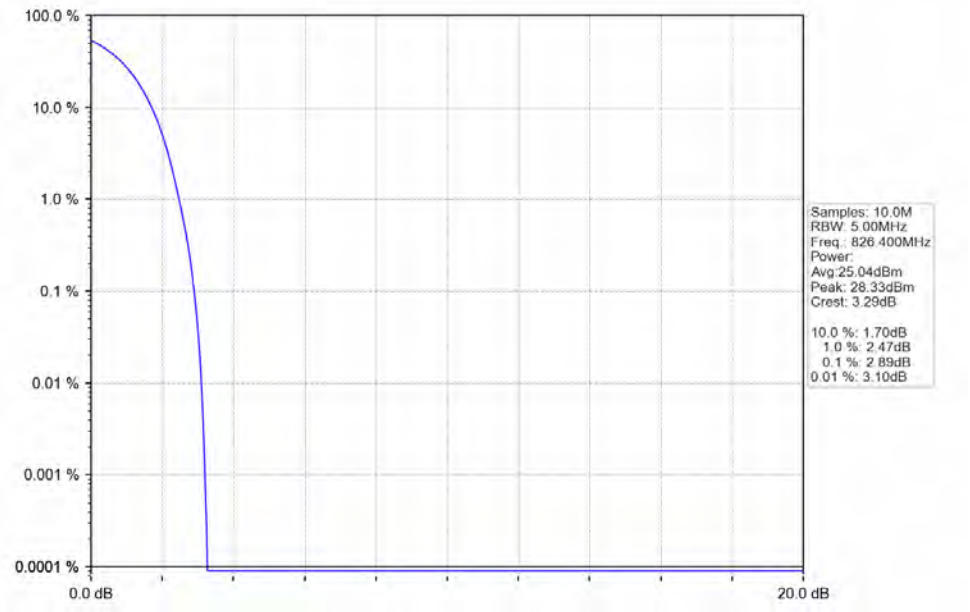
## BAND5

## TEST RESULT

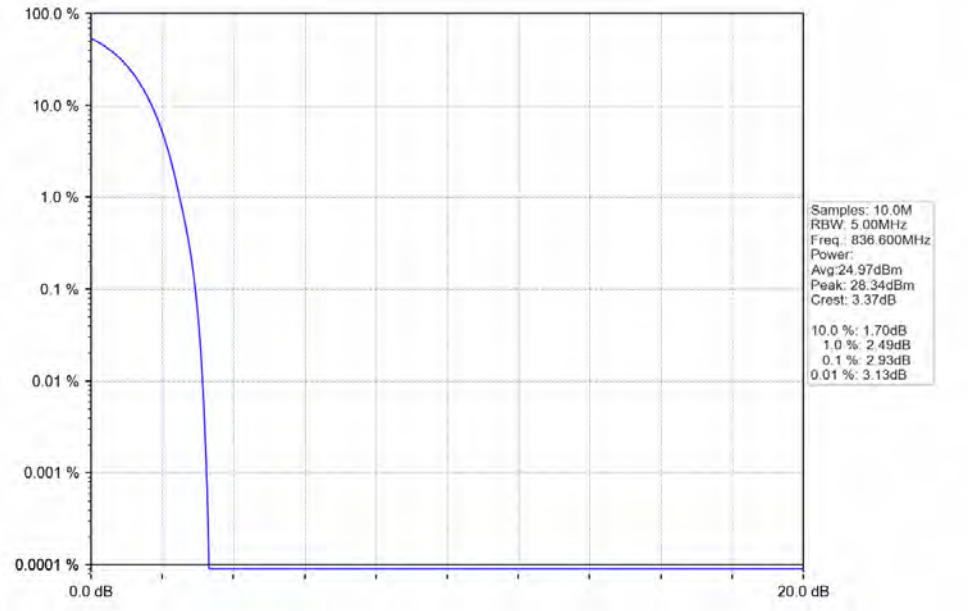
| Band: 5 | | | | | | |
|---|---|---|---|---|---|---|
| ENV | Mode | | Frequency (MHz) | Peak-Average Ratio (dB) | | Verdict |
| | Network | Subset | | Result | Limit | |
| NTNV | RMC | 12.2kbps RMC | 826.4 | 2.89 | <=13 | Pass |
| | | | 836.6 | 2.93 | <=13 | Pass |
| | | | 846.6 | 2.92 | <=13 | Pass |

## TEST GRAPH

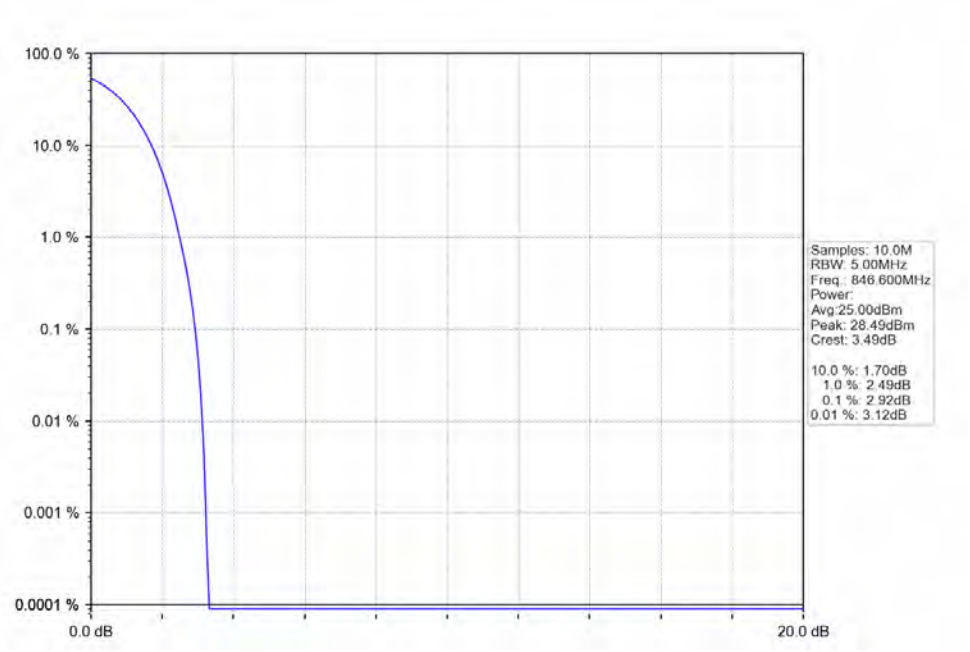
Band5_RMC_LCH_826.4MHz_12.2kbps RMC_NTNV




Band5_RMC_MCH_836.6MHz_12.2kbps RMC_NTNV



Band5_RMC_HCH_846.6MHz_12.2kbps RMC_NTNV



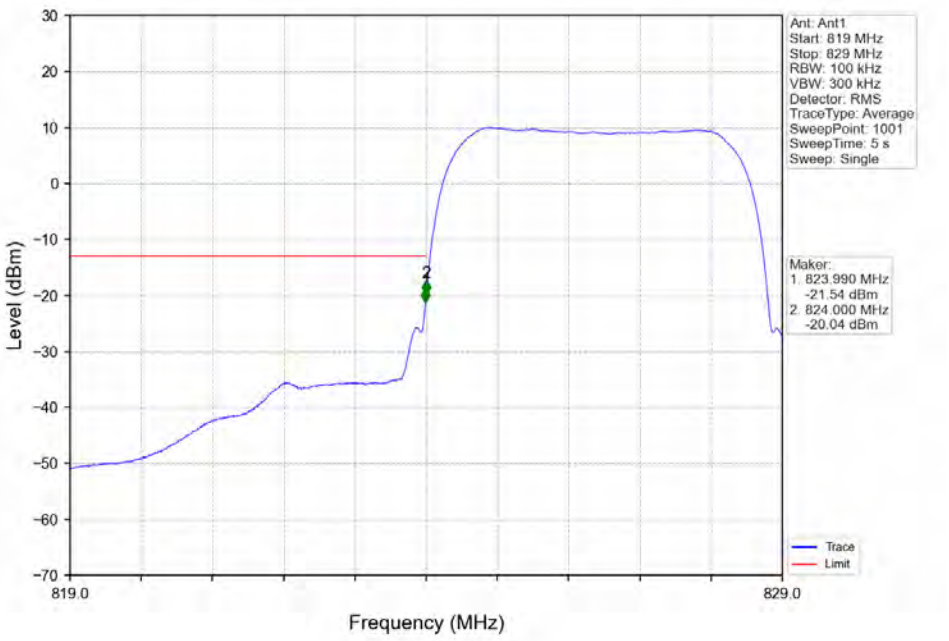
SPURIOUS EMISSION

BAND5

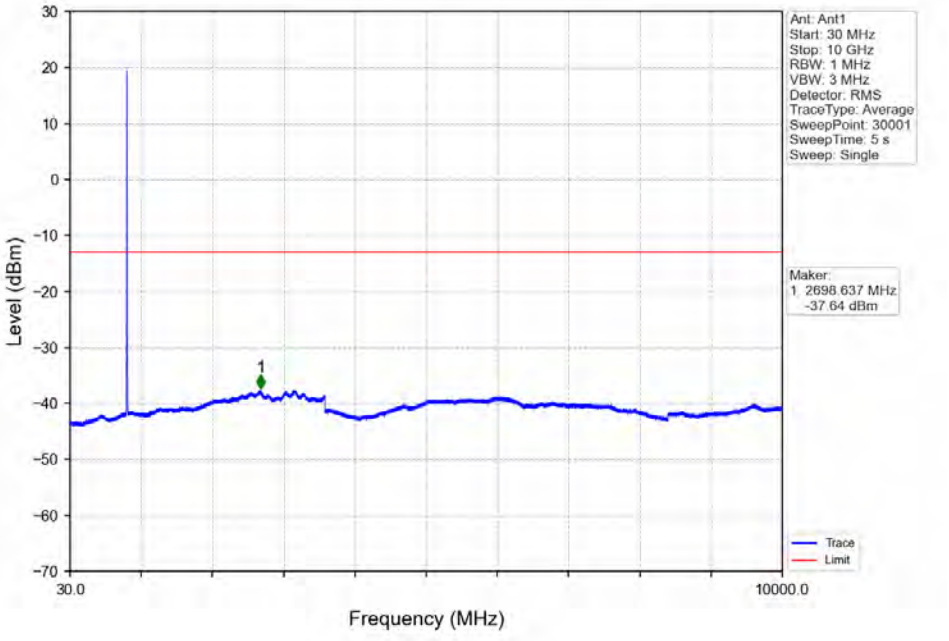
TEST RESULT

| Band: 5 | | | | | | |
|---|---|---|---|---|---|---|
| ENV | Mode | | Frequency (MHz) | Spurious Emission | | Verdict |
| | Network | Subset | | Result | Limit | |
| NTNV | RMC | 12.2kbps RMC | 826.4 | Refer To Test Graph | | Pass |
| | | | 836.6 | Refer To Test Graph | | Pass |
| | | | 846.6 | Refer To Test Graph | | Pass |

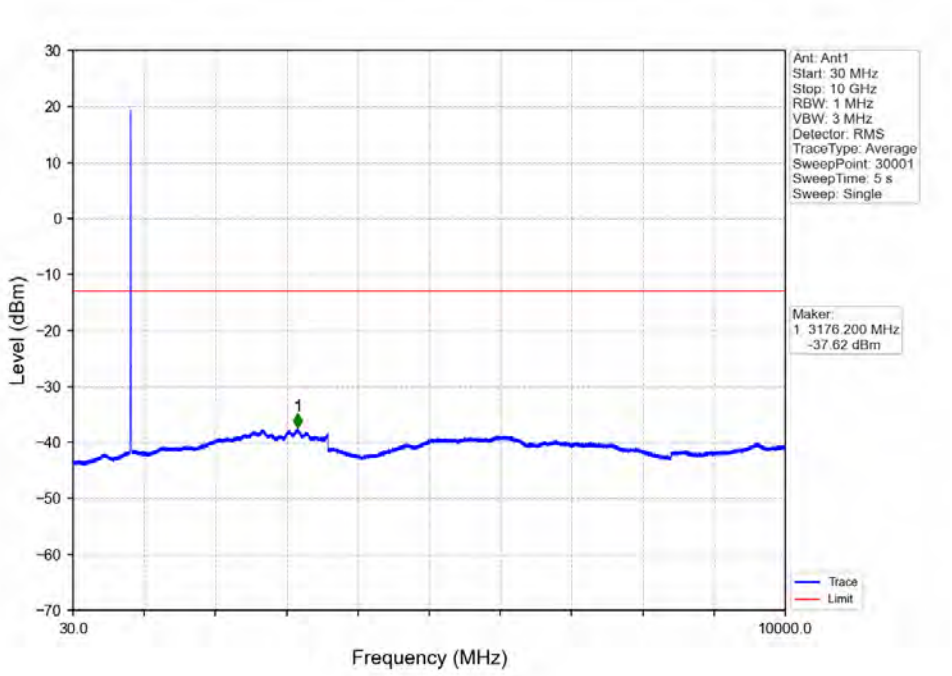
TEST GRAPH

| Band5_RMC_LCH_826.4MHz_12.2kbps RMC_NTNV |
|---|
|  |

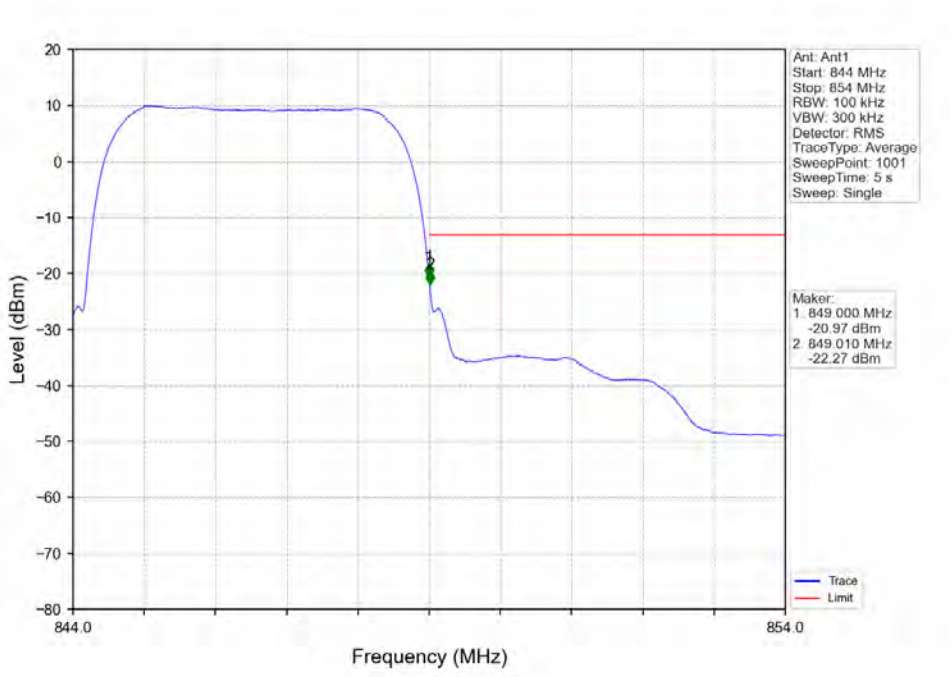


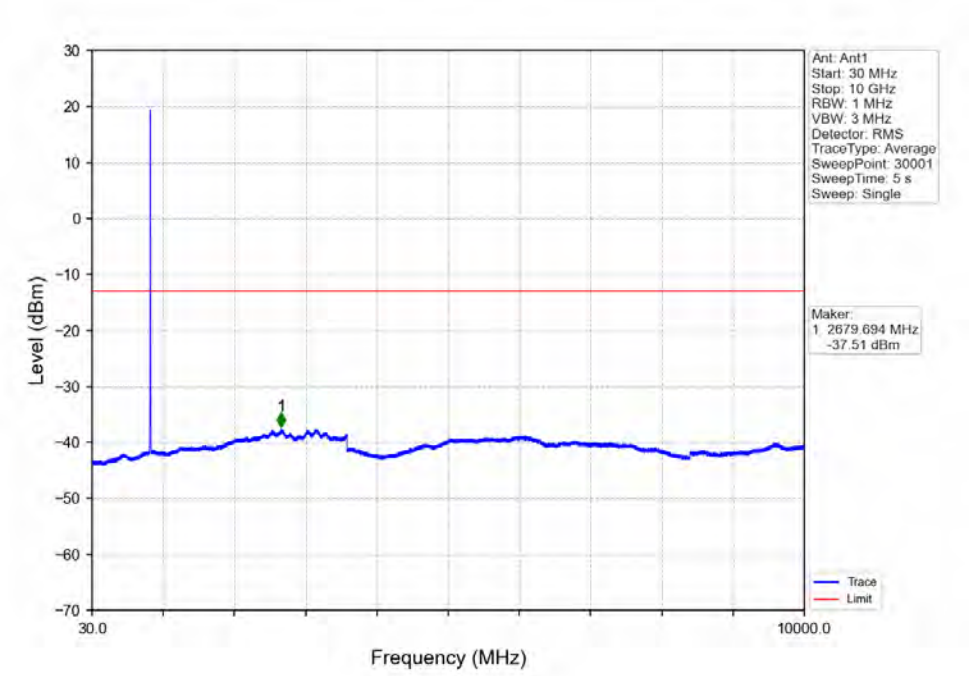
| Band5_RMC_LCH_826.4MHz_12.2kbps RMC_NTNV |
|---|
|  |

Band5_RMC_MCH_836.6MHz_12.2kbps RMC_NTNV




Band5_RMC_HCH_846.6MHz_12.2kbps RMC_NTNV



| Band5_RMC_HCH_846.6MHz_12.2kbps RMC_NTNV |
|---|
|  |

LTE BAND5

FREQUENCY STABILITY

B5_1.4MHZ

TEST RESULT

| Band: 5 / Bandwidth: 1.4MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Modulation | Frequency (MHz) | RB Allocation | | Temp. (°C) | Voltage (VDC) | Freq. Error (Hz) | Freq. vs. Rated (ppm) | | Verdict |
| | | Size | Offset | | | | Result | Limit | |
| QPSK | 824.7 | 6 | 0 | 20 | 3.27 | -1.70 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -0.13 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -0.47 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | 1.27 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | 2.56 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | 1.20 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | 3.83 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | 2.07 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | 2.56 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -0.10 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | 0.24 | 0.00 | -2.5 to 2.5 | Pass |
| | 836.5 | 6 | 0 | 20 | 3.27 | -0.77 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -6.61 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -1.87 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -0.53 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | -4.28 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | -2.36 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | -2.60 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | -2.50 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -1.65 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -4.36 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | -2.63 | -0.00 | -2.5 to 2.5 | Pass |
| | 848.3 | 6 | 0 | 20 | 3.27 | 3.65 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -1.82 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -4.22 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -5.14 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | 0.73 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | -2.36 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | -3.12 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | -3.75 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -2.85 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -0.54 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | -3.20 | -0.00 | -2.5 to 2.5 | Pass |
| 16QAM | 824.7 | 6 | 0 | 20 | 3.27 | -0.80 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | 1.45 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | 1.90 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -1.37 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | -4.12 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | -0.61 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | -1.90 | -0.00 | -2.5 to 2.5 | Pass |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 10 | 3.85 | -3.32 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -0.77 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -2.05 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | 6.75 | 0.01 | -2.5 to 2.5 | Pass |
| | 836.5 | 6 | 0 | 20 | 3.27 | -4.42 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -1.14 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | 0.81 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -0.52 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | -2.52 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | -1.47 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | -0.86 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | 0.01 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -0.41 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -2.39 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | -1.37 | -0.00 | -2.5 to 2.5 | Pass |
| | 848.3 | 6 | 0 | 20 | 3.27 | -3.13 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -4.49 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -1.93 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | 3.30 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | -0.47 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | 0.96 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | -1.95 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | -1.32 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -3.65 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -3.65 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | -1.76 | -0.00 | -2.5 to 2.5 | Pass |
| 64QAM | 824.7 | 6 | 0 | 20 | 3.27 | 0.86 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | 1.14 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -3.58 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -2.83 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | 0.47 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | 0.96 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | -3.33 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | -1.65 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -0.83 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -5.76 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | -0.26 | -0.00 | -2.5 to 2.5 | Pass |
| | 836.5 | 6 | 0 | 20 | 3.27 | -3.98 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -4.46 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -2.59 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -0.87 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | -1.12 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | -3.85 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | -2.55 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | -3.56 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -11.82 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -6.21 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | -0.87 | -0.00 | -2.5 to 2.5 | Pass |
| | 848.3 | 6 | 0 | 20 | 3.27 | -6.14 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -3.82 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -1.60 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -0.64 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | -2.42 | -0.00 | -2.5 to 2.5 | Pass |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | -10 | 3.85 | -2.16 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | -5.41 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | -6.08 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -2.93 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -4.63 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | -3.82 | -0.00 | -2.5 to 2.5 | Pass |

## B5_3MHZ

## TEST RESULT

| Band: 5 / Bandwidth: 3MHz | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Modulation | Frequency (MHz) | RB Allocation | | Temp. (°C) | Voltage (VDC) | Freq. Error (Hz) | Freq. vs. Rated (ppm) | | Verdict |
| | | Size | Offset | | | | Result | Limit | |
| QPSK | 825.5 | 15 | 0 | 20 | 3.27 | -3.85 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -0.13 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | 2.06 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | 2.93 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | 1.22 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | 3.33 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | 2.56 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | 1.19 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | 2.32 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | 0.26 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | 1.54 | 0.00 | -2.5 to 2.5 | Pass |
| | 836.5 | 15 | 0 | 20 | 3.27 | -1.22 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -5.64 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -2.72 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -2.62 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | -3.42 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | -3.92 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | -1.77 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | -1.33 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -3.68 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -5.98 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | 0.11 | 0.00 | -2.5 to 2.5 | Pass |
| | 847.5 | 15 | 0 | 20 | 3.27 | -1.89 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -4.95 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -3.06 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -1.13 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | -1.40 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | -2.98 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | -3.98 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | -3.18 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -2.58 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -3.85 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | -3.28 | -0.00 | -2.5 to 2.5 | Pass |
| 16QAM | 825.5 | 15 | 0 | 20 | 3.27 | 0.53 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | 2.03 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | 0.94 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -0.17 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | 0.77 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | 1.49 | 0.00 | -2.5 to 2.5 | Pass |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 0 | 3.85 | -0.40 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | -0.86 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -3.15 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -1.12 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | -0.94 | -0.00 | -2.5 to 2.5 | Pass |
| | 836.5 | 15 | 0 | 20 | 3.27 | -1.39 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -1.95 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -2.03 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -4.00 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | -3.02 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | -2.59 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | 0.17 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | -2.06 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -0.34 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -4.55 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | -3.55 | -0.00 | -2.5 to 2.5 | Pass |
| | 847.5 | 15 | 0 | 20 | 3.27 | -4.91 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -5.88 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -6.65 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -2.85 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | -4.96 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | -4.08 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | -3.83 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | -2.56 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -5.96 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -2.07 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | -4.09 | -0.00 | -2.5 to 2.5 | Pass |
| 64QAM | 825.5 | 15 | 0 | 20 | 3.27 | -2.29 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -1.17 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -3.08 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -2.10 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | 0.53 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | 0.32 | 0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | -2.67 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | -3.76 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -3.79 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -5.78 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | -2.25 | -0.00 | -2.5 to 2.5 | Pass |
| | 836.5 | 15 | 0 | 20 | 3.27 | -2.03 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -2.32 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -1.69 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -3.15 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -20 | 3.85 | -3.08 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -10 | 3.85 | -2.85 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | 0 | 3.85 | -4.16 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 10 | 3.85 | -5.01 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 30 | 3.85 | -5.12 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 40 | 3.85 | -4.51 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | 50 | 3.85 | -6.67 | -0.01 | -2.5 to 2.5 | Pass |
| | 847.5 | 15 | 0 | 20 | 3.27 | -4.48 | -0.01 | -2.5 to 2.5 | Pass |
| | | | | | 3.85 | -1.25 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | | 4.43 | -2.32 | -0.00 | -2.5 to 2.5 | Pass |
| | | | | -30 | 3.85 | -6.67 | -0.01 | -2.5 to 2.5 | Pass |