# FCC Test Report

# (PART 22)

| | |
|---|---|
| **Report No.:** | RF181005C08-1 |
| **FCC ID:** | NKRIMQ3 |
| **Test Model:** | IMQ3-2 |
| **Series Model:** | IMQ3-0, IMQ3-1, IMQ3-3 (See section 3.1 for more detail) |
| **Received Date:** | Oct. 05, 2018 |
| **Test Date:** | Jan. 04, 2019 ~ Jan. 23, 2019 |
| **Issued Date:** | Jan. 25, 2019 |
| **Applicant:** | Wistron NeWeb Corporation |
| **Address:** | 20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan, R.O.C |
| **Issued By:** | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch |
| **Lab Address:** | No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan ( R.O.C ) |
| **Test Location :** | No. 19, Hwa Ya 2nd Rd, Wen Hwa Vil, Kwei Shan Dist., Taoyuan City 33383, Taiwan (R.O.C) |
| **FCC Registration / Designation Number:** | 788550 / TW0003 |

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## Release Control Record

| Issue No. | Description | Date Issued |
|---|---|---|
| RF181005C08-1 | Original Release | Jan. 25, 2019 |

## 1 Certificate of Conformity

| | |
|---|---|
| **Product:** | M2M DATA MODULE |
| **Brand:** | WNC |
| **Test Model:** | IMQ3-2 |
| **Series Model:** | IMQ3-0, IMQ3-1, IMQ3-3 (See section 3.1 for more detail) |
| **Sample Status:** | Engineering Sample |
| **Applicant:** | Wistron NeWeb Corporation |
| **Test Date:** | Jan. 04, 2019 ~ Jan. 23, 2019 |
| **Standards:** | FCC Part 22, Subpart H |

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

**Prepared by :** Lena Wang , **Date:** Jan. 25, 2019

Lena Wang / Specialist

**Approved by :** , **Date:** Jan. 25, 2019

Dylan Chiou / Project Engineer

## 2 Summary of Test Results

| Applied Standard: FCC Part 22 & Part 2 | | | |
|---|---|---|---|
| **FCC Clause** | **Test Item** | **Result** | **Remarks** |
| 2.1046<br>22.913 (a) | Effective Radiated Power | Pass | Meet the requirement of limit. |
| 2.1047 | Modulation Characteristics | Pass | Meet the requirement. |
| --- | Peak to Average Ratio | Pass | Meet the requirement of limit. |
| 2.1055<br>22.355 | Frequency Stability | Pass | Meet the requirement of limit. |
| 2.1049 | Occupied Bandwidth | Pass | Meet the requirement of limit. |
| 22.917 | Band Edge Measurements | Pass | Meet the requirement of limit. |
| 2.1051<br>22.917 | Conducted Spurious Emissions | Pass | Meet the requirement of limit. |
| 2.1053<br>22.917 | Radiated Spurious Emissions | Pass | Meet the requirement of limit.<br>Minimum passing margin is -28.58 dB at 2487.00 MHz. |

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

### 2.1 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** | **Frequency** | **Expended Uncertainty (k=2) (±)** |
|---|---|---|
| Radiated Emissions up to 1 GHz | 30 MHz ~ 200 MHz | 2.93 dB |
| | 200 MHz ~ 1000 MHz | 2.95 dB |
| Radiated Emissions above 1 GHz | 1 GHz ~ 18 GHz | 2.26 dB |
| | 18 GHz ~ 40 GHz | 1.94 dB |

## 2.2 Test Site and Instruments

| Description & Manufacturer | Model No. | Serial No. | Date of Calibration | Due Date of Calibration |
|---|---|---|---|---|
| Test Receiver<br>Agilent | N9038A | MY51210203 | Mar. 16, 2018 | Mar. 15, 2019 |
| Spectrum Analyzer<br>Agilent | N9010A | MY52220314 | Dec. 13, 2018 | Dec. 12, 2019 |
| Spectrum Analyzer<br>ROHDE & SCHWARZ | FSU43 | 101261 | Jan. 11, 2018 | Jan. 10, 2019 |
| HORN Antenna<br>SCHWARZBECK | BBHA 9120D | 9120D-969 | Nov. 25, 2018 | Nov. 24, 2019 |
| BILOG Antenna<br>SCHWARZBECK | VULB 9168 | 9168-472 | Nov. 23, 2018 | Nov. 22, 2019 |
| Fixed Attenuator<br>Mini-Circuits | MDCS18N-10 | MDCS18N-10-01 | Apr. 16, 2018 | Apr. 15, 2019 |
| MXG Vector signal generator<br>Agilent | N5182B | MY53050430 | Nov. 19, 2018 | Nov. 18, 2019 |
| Preamplifier<br>EMCI | EMC 012645 | 980115 | Oct. 12, 2018 | Oct. 11, 2019 |
| Preamplifier<br>EMCI | EMC 330H | 980112 | Oct. 12, 2018 | Oct. 11, 2019 |
| RF Coaxial Cable<br>HUBER+SUHNNER | EMC104-SM-SM-8000&3000 | 140811+170717 | Oct. 12, 2018 | Oct. 11, 2019 |
| RF Coaxial Cable<br>HUBER+SUHNNER | SUCOFLEX 104 | EMC104-SM-SM-1000(140807) | Oct. 12, 2018 | Oct. 11, 2019 |
| RF Coaxial Cable<br>WOKEN | 8D-FB | Cable-Ch10-01 | Oct. 12, 2018 | Oct. 11, 2019 |
| Boresight Antenna Fixture | FBA-01 | FBA-SIP01 | NA | NA |
| Software<br>BV ADT | E3<br>6.120103 | NA | NA | NA |
| Antenna Tower<br>MF | MFA-440H | NA | NA | NA |
| Turn Table<br>MF | MFT-201SS | NA | NA | NA |
| Antenna Tower &Turn Table Controller<br>MF | MF-7802 | NA | NA | NA |
| LTE Wireless Communication Test Set<br>Keysight | E7515A | MY56030229 | Mar. 14, 2018 | Mar. 13, 2019 |
| Communications Tester-Wireless<br>Agilent | 8960 Series 10 | MY53201073 | Jun. 28, 2017 | Jun. 27, 2019 |
| Radio Communication Analyzer<br>Anritsu | MT8821C | 6201502978 | Jul. 20, 2018 | Jul. 19, 2019 |
| Temperature & Humidity Chamber | GTH-120-40-CP-AR | MAA1306-019 | Sep. 05, 2018 | Sep. 04, 2019 |

| | | | | |
|---|---|---|---|---|
| DC Power Supply Agilent | 66319D | MY43005576 | Oct. 19, 2018 | Oct. 18, 2019 |

Note:
1. The calibration interval of the above test instruments is 12 / 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.
3. The horn antenna and preamplifier (model: EMC 184045) are used only for the measurement of emission frequency above 1 GHz if tested.
4. The IC Site Registration No. is 7450F-10.

## 3 General Information

### 3.1 General Description of EUT

| | | |
|---|---|---|
| **Product** | M2M DATA MODULE | |
| **Brand** | WNC | |
| **Test Model** | IMQ3-2 | |
| **Series Model** | IMQ3-0, IMQ3-1, IMQ3-3 | |
| **Status of EUT** | Engineering Sample | |
| **Power Supply Rating** | 3.8 Vdc | |
| **Modulation Type** | GSM/GPRS | GMSK |
| | EDGE | GMSK, 8PSK |
| | LTE | QPSK, 16QAM |
| **Frequency Range** | GSM/GPRS/EDGE | 824.2 ~ 848.8 MHz |
| | LTE 5 (Channel Bandwidth: 1.4 MHz) | 824.7 ~ 848.3 MHz |
| | LTE 5 (Channel Bandwidth: 3 MHz) | 825.5 ~ 847.5 MHz |
| | LTE 5 (Channel Bandwidth: 5 MHz) | 826.5 ~ 846.5 MHz |
| | LTE 5 (Channel Bandwidth: 10 MHz) | 829 ~ 844 MHz |
| | LTE 26 (Channel Bandwidth: 1.4 MHz) | 824.7 ~ 848.3 MHz |
| | LTE 26 (Channel Bandwidth: 3 MHz) | 825.5 ~ 847.5 MHz |
| | LTE 26 (Channel Bandwidth: 5 MHz) | 826.5 ~ 846.5 MHz |
| | LTE 26 (Channel Bandwidth: 10 MHz) | 829 ~ 844 MHz |
| | LTE 26 (Channel Bandwidth: 15 MHz) | 831.5 ~ 841.5 MHz |
| **Max. ERP Power** | GSM/GPRS | 53.33 mW |
| | EDGE | 52.48 mW |
| | LTE 5 (Channel Bandwidth: 1.4 MHz) | 88.72 mW |
| | LTE 5 (Channel Bandwidth: 3 MHz) | 94.19 mW |
| | LTE 5 (Channel Bandwidth: 5 MHz) | 99.54 mW |
| | LTE 5 (Channel Bandwidth: 10 MHz) | 104.95 mW |
| | LTE 26 (Channel Bandwidth: 1.4 MHz) | 69.50 mW |
| | LTE 26 (Channel Bandwidth: 3 MHz) | 73.62 mW |
| | LTE 26 (Channel Bandwidth: 5 MHz) | 77.62 mW |
| | LTE 26 (Channel Bandwidth: 10 MHz) | 82.04 mW |
| | LTE 26 (Channel Bandwidth: 15 MHz) | 86.90 mW |
| **Emission Designator** | GSM/GPRS | 245KGXW |
| | EDGE | 246KG7W |
| | LTE 5 (Channel Bandwidth: 1.4 MHz) | 1M09G7D |
| | LTE 5 (Channel Bandwidth: 3 MHz) | 1M09G7D |
| | LTE 5 (Channel Bandwidth: 5 MHz) | 1M08G7D |
| | LTE 5 (Channel Bandwidth: 10 MHz) | 1M09G7D |
| | LTE 26 (Channel Bandwidth: 1.4 MHz) | 1M09G7D |
| | LTE 26 (Channel Bandwidth: 3 MHz) | 1M09G7D |
| | LTE 26 (Channel Bandwidth: 5 MHz) | 1M08G7D |
| | LTE 26 (Channel Bandwidth: 10 MHz) | 1M09G7D |
| | LTE 26 (Channel Bandwidth: 15 MHz) | 1M10G7D |
| **Antenna Type** | Dipole Antenna with -3.5 dBi gain | |

| | |
|---|---|
| **Accessory Device** | N/A |
| **Data Cable Supplied** | N/A |

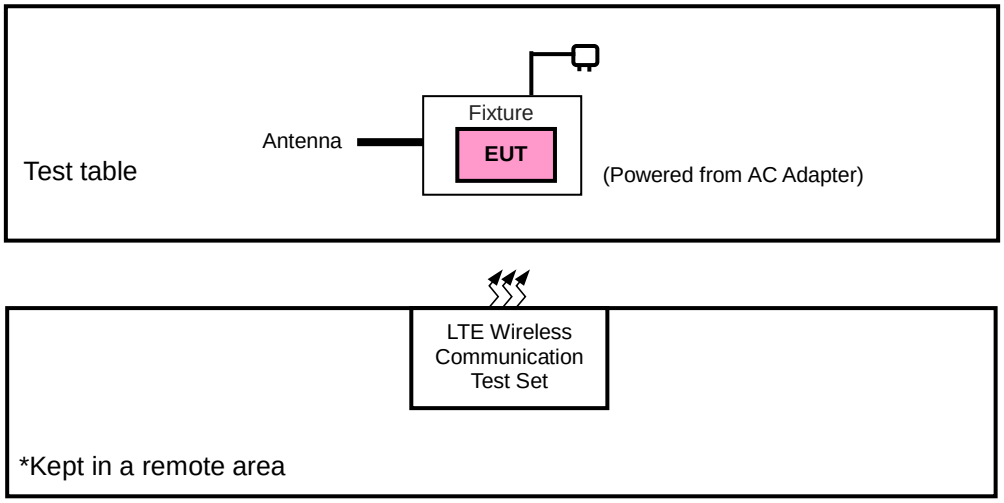
Note:

1. All models are listed as below. Model IMQ3-2 was chosen for final test and present in the report.

| Brand | Model | Difference |
|---|---|---|
| WNC | IMQ3-2 | LTE M1+2G+GPS |
| | IMQ3-0 | LTE M1+GPS |
| | IMQ3-1 | LTE M1+2G |
| | IMQ3-3 | LTE M1 |

2. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.
3. In addition to Frequency Stability Measurement, the other tests are tested with Adapter (12 Vdc).

## 3.2 Configuration of System under Test




### 3.2.1 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. | LTE Wireless Communication Test Set | Keysight | E7515A | MY56030229 | N/A |
| 2. | Adapter | Asian Power Devices Inc. | WA-24Q12FU | N/A | N/A |
| 3. | Antenna | Cortec | AN0727-6706BSM | N/A | N/A |
| 4. | DC Power Supply | Agilent | 66319D | MY43005576 | N/A |

| No. | Signal Cable Description Of The Above Support Units |
|---|---|
| 1. | N/A |
| 2. | N/A |
| 3. | N/A |
| 4. | N/A |

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items 1 acted as communication partners to transfer data.
3. Item 2、3 was provided by client.

### 3.3 Test Mode Applicability and Tested Channel Detail

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 was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

| Band | ERP | Radiated Emission |
|---|---|---|
| **GSM** | X-plane | X-axis |
| **EDGE** | X-plane | X-axis |
| **LTE Band 5** | X-plane | Z-axis |
| **LTE Band 26** | X-plane | Z-axis |

**GSM**

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Mode |
|---|---|---|---|---|
| - | ERP | 128 to 251 | 128, 189, 251 | GSM, EDGE |
| - | Modulation Characteristics | 128 to 251 | 189 | GSM, EDGE |
| - | Frequency Stability | 128 to 251 | 128, 251 | GSM, EDGE |
| - | Occupied Bandwidth | 128 to 251 | 128, 189, 251 | GSM, EDGE |
| - | Band Edge | 128 to 251 | 128, 251 | GSM, EDGE |
| - | Peak to Average Ratio | 128 to 251 | 128, 189, 251 | GSM, EDGE |
| - | Conducted Emission | 128 to 251 | 128, 189, 251 | GSM, EDGE |
| - | Radiated Emission | 128 to 251 | 128, 189, 251 | GSM, EDGE |

**LTE Band 5**

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Channel Bandwidth | Modulation | Mode |
|---|---|---|---|---|---|---|
| - | ERP | 20407 to 20643 | 20407, 20525, 20643 | 1.4 MHz | QPSK, 16QAM | 1 RB / 5 RB Offset |
| | | 20415 to 20635 | 20415, 20525, 20635 | 3 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| | | 20425 to 20625 | 20425, 20525, 20625 | 5 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| | | 20450 to 20600 | 20450, 20525, 20600 | 10 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| - | Modulation Characteristics | 20450 to 20600 | 20525 | 10 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| - | Frequency Stability | 20407 to 20643 | 20407, 20643 | 1.4 MHz | QPSK | 1 RB / 0 RB Offset |
| | | 20415 to 20635 | 20415, 20635 | 3 MHz | QPSK | 1 RB / 0 RB Offset |
| | | 20425 to 20625 | 20425, 20625 | 5 MHz | QPSK | 1 RB / 0 RB Offset |
| | | 20450 to 20600 | 20450, 20600 | 10 MHz | QPSK | 1 RB / 0 RB Offset |
| - | Occupied Bandwidth | 20407 to 20643 | 20407, 20525, 20643 | 1.4 MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |
| | | 20415 to 20635 | 20415, 20525, 20635 | 3 MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |
| | | 20425 to 20625 | 20425, 20525, 20625 | 5 MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |
| | | 20450 to 20600 | 20450, 20525, 20600 | 10 MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Channel Bandwidth | Modulation | Mode |
|---|---|---|---|---|---|---|
| - | Band Edge | 20407 to 20643 | 20407 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | | 20643 | 1.4MHz | QPSK | 1 RB / 5 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | 20415 to 20635 | 20415 | 3 MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | | 20635 | 3 MHz | QPSK | 1 RB / 5 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | 20425 to 20625 | 20425 | 5 MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | | 20625 | 5 MHz | QPSK | 1 RB / 5 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | 20450 to 20600 | 20450 | 10 MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | | 20600 | 10 MHz | QPSK | 1 RB / 5 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| - | Peak to Average Ratio | 20407 to 20643 | 20407, 20525, 20643 | 1.4 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| | | 20415 to 20635 | 20415, 20525, 20635 | 3 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| | | 20425 to 20625 | 20425, 20525, 20625 | 5 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| | | 20450 to 20600 | 20450, 20525, 20600 | 10 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| - | Conducted Emission | 20407 to 20643 | 20407, 20525, 20643 | 1.4 MHz | QPSK | 1 RB / 5 RB Offset |
| | | 20415 to 20635 | 20415, 20525, 20635 | 3 MHz | QPSK | 1 RB / 0 RB Offset |
| | | 20425 to 20625 | 20425, 20525, 20625 | 5 MHz | QPSK | 1 RB / 0 RB Offset |
| | | 20450 to 20600 | 20450, 20525, 20600 | 10 MHz | QPSK | 1 RB / 0 RB Offset |
| - | Radiated Emission | 20407 to 20643 | 20407, 20525, 20643 | 1.4 MHz | QPSK | 1 RB / 5 RB Offset |
| | | 20425 to 20625 | 20425, 20525, 20625 | 5 MHz | QPSK | 1 RB / 0 RB Offset |
| | | 20450 to 20600 | 20450, 20525, 20600 | 10 MHz | QPSK | 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.

## LTE Band 26

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Channel Bandwidth | Modulation | Mode |
|---|---|---|---|---|---|---|
| - | ERP | 26797 to 27033 | 26797, 26915, 27033 | 1.4 MHz | QPSK, 16QAM | 1 RB / 5 RB Offset |
| | | 26805 to 27025 | 26805, 26915, 27025 | 3 MHz | QPSK, 16QAM | 1 RB / 5 RB Offset |
| | | 26815 to 27015 | 26815, 26915, 27015 | 5 MHz | QPSK, 16QAM | 1 RB / 5 RB Offset |
| | | 26840 to 26990 | 26840, 26915, 26990 | 10 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| | | 26865 to 26965 | 26865, 26915, 26965 | 15 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| - | Modulation Characteristics | 26865 to 26965 | 26915 | 15 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| - | Frequency Stability | 26797 to 27033 | 26797, 27033 | 1.4 MHz | QPSK | 1 RB / 0 RB Offset |
| | | 26805 to 27025 | 26805, 27025 | 3 MHz | QPSK | 1 RB / 0 RB Offset |
| | | 26815 to 27015 | 26815, 27015 | 5 MHz | QPSK | 1 RB / 0 RB Offset |
| | | 26840 to 26990 | 26840, 26990 | 10 MHz | QPSK | 1 RB / 0 RB Offset |
| | | 26865 to 26965 | 26865, 26965 | 15 MHz | QPSK | 1 RB / 0 RB Offset |
| - | Occupied Bandwidth | 26797 to 27033 | 26797, 26915, 27033 | 1.4 MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |
| | | 26805 to 27025 | 26805, 26915, 27025 | 3 MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |
| | | 26815 to 27015 | 26815, 26915, 27015 | 5 MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |
| | | 26840 to 26990 | 26840, 26915, 26990 | 10 MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |
| | | 26865 to 26965 | 26865, 26915, 26965 | 15 MHz | QPSK, 16QAM | 6 RB / 0 RB Offset |
| - | Band Edge | 26797 to 27033 | 26797 | 1.4 MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | | 27033 | 1.4 MHz | QPSK | 1 RB / 5 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | 26805 to 27025 | 26805 | 3 MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | | 27025 | 3 MHz | QPSK | 1 RB / 5 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | 26815 to 27015 | 26815 | 5 MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | | 27015 | 5 MHz | QPSK | 1 RB / 5 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | 26840 to 26990 | 26840 | 10 MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | | 26990 | 10 MHz | QPSK | 1 RB / 5 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | 26865 to 26965 | 26865 | 15 MHz | QPSK | 1 RB / 0 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | | 26965 | 15 MHz | QPSK | 1 RB / 5 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| - | Peak to Average Ratio | 26797 to 27033 | 26797, 26915, 27033 | 1.4 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| | | 26805 to 27025 | 26805, 26915, 27025 | 3 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| | | 26815 to 27015 | 26815, 26915, 27015 | 5 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| | | 26840 to 26990 | 26840, 26915, 26990 | 10 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| | | 26865 to 26965 | 26865, 26915, 26965 | 15 MHz | QPSK, 16QAM | 1 RB / 0 RB Offset |
| - | Conducted Emission | 26797 to 27033 | 26797, 26915, 27033 | 1.4 MHz | QPSK | 1 RB / 5 RB Offset |
| | | 26805 to 27025 | 26805, 26915, 27025 | 3 MHz | QPSK | 1 RB / 5 RB Offset |
| | | 26815 to 27015 | 26815, 26915, 27015 | 5 MHz | QPSK | 1 RB / 5 RB Offset |
| | | 26840 to 26990 | 26840, 26915, 26990 | 10 MHz | QPSK | 1 RB / 0 RB Offset |
| | | 26865 to 26965 | 26865, 26915, 26965 | 15 MHz | QPSK | 1 RB / 0 RB Offset |
| - | Radiated Emission | 26797 to 27033 | 26797, 26915, 27033 | 1.4 MHz | QPSK | 1 RB / 5 RB Offset |
| | | 26815 to 27015 | 26815, 26915, 27015 | 5 MHz | QPSK | 1 RB / 5 RB Offset |
| | | 26865 to 26965 | 26865, 26915, 26965 | 15 MHz | QPSK | 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 | 25 deg. C, 65 % RH | 12 Vdc | Thomas Wei |
| Modulation Characteristics | 25 deg. C, 65 % RH | 12 Vdc | Getaz Yang |
| Frequency Stability | 25 deg. C, 65 % RH | 12 Vdc | Getaz Yang |
| Occupied Bandwidth | 25 deg. C, 65 % RH | 12 Vdc | Getaz Yang |
| Band Edge | 25 deg. C, 65 % RH | 12 Vdc | Getaz Yang |
| Peak to Average Ratio | 25 deg. C, 65 % RH | 12 Vdc | Getaz Yang |
| Conducted Emission | 25 deg. C, 65 % RH | 12 Vdc | Getaz Yang |
| Radiated Emission | 25 deg. C, 65 % RH | 12 Vdc | Thomas Wei, Jisyong Wang |

### 3.4 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.

### 3.5 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-E 2016**
**ANSI 63.26-2015**

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

# 4 Test Types and Results

## 4.1 Output Power Measurement

### 4.1.1 Limits of Output Power Measurement

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

### 4.1.2 Test Procedures

**EIRP / ERP Measurement:**

a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1 MHz for GSM, GPRS & EDGE, and 10 MHz for LTE mode.

b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) 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 1 m to 4 m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

c. 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 b. Record the power level of S.G.

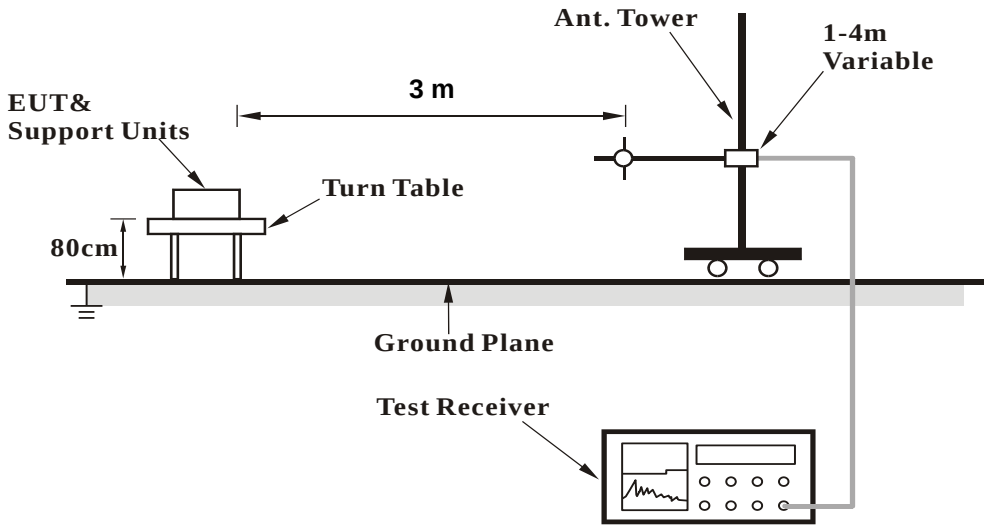
d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15 dB.

**Conducted Power Measurement:**

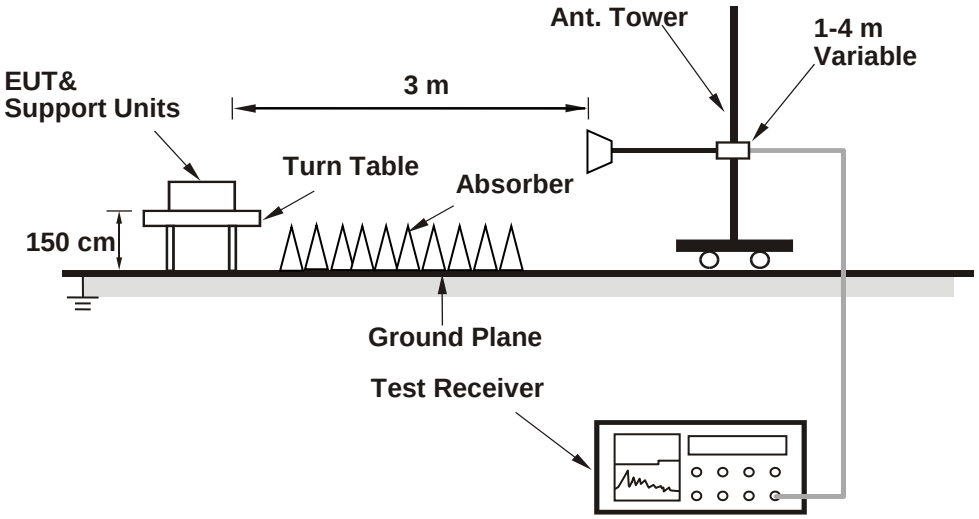
The EUT was set up for the maximum power with GSM, GPRS, EDGE, and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

4.1.3 Test Setup

**EIRP / ERP Measurement:**
**<Radiated Emission below or equal 1 GHz>**




**<Radiated Emission above 1 GHz>**




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

**Conducted Power Measurement:**

4.1.4 Test Results

**Conducted Output Power (dBm)**

| Band | GSM850 | | |
|---|---|---|---|
| Channel | 128 | 189 | 251 |
| Frequency (MHz) | 824.2 | 836.4 | 848.8 |
| GPRS (GMSK, 1Tx-slot) | 23.21 | 23.24 | 23.19 |
| EDGE (8PSK, 1Tx-slot) | 23.11 | 23.17 | 23.08 |

| eMTC | Band 5 | Region(s): | FCC | Power: | Class 3 | 23 | Tolerance: | 2.7 | maximum: | 23.72 |
|---|---|---|---|---|---|---|---|---|---|---|

| BW(MHz): | 1.4 |
|---|---|

| Test Frequency ID | $N_{UL}$ | Frequency of Uplink [MHz] | Test Configuration Initial of Power | | | | EUT | |
|---|---|---|---|---|---|---|---|---|
| | | | Modulation | RB Size | RB Offset | Narrowband Index | Cell power (dBm/15kHz) | power (dBm) |
| Low Range | 20407 | 824.7 | QPSK | 1 | 0 | 0 | -85 | 23.67 |
| | | | QPSK | 1 | 5 | 0 | -85 | 23.68 |
| | | | QPSK | 3 | 3 | 0 | -85 | 22.27 |
| | | | QPSK | 6 | 0 | 0 | -85 | 21.34 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 22.29 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 22.2 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 21.86 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.69 |
| Mid Range | 20525 | 836.5 | QPSK | 1 | 0 | 0 | -85 | 23.59 |
| | | | QPSK | 1 | 5 | 0 | -85 | 23.7 |
| | | | QPSK | 3 | 3 | 0 | -85 | 22.22 |
| | | | QPSK | 6 | 0 | 0 | -85 | 21.3 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 21.86 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 22.63 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 21.8 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.85 |
| High Range | 20643 | 848.3 | QPSK | 1 | 0 | 0 | -85 | 23.51 |
| | | | QPSK | 1 | 5 | 0 | -85 | 23.41 |
| | | | QPSK | 3 | 3 | 0 | -85 | 22.36 |
| | | | QPSK | 6 | 0 | 0 | -85 | 21.16 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 22.62 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 22.19 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 21.86 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.2 |

| BW(MHz): | 3 |
|---|---|

| | $N_{UL}$ | | Test Configuration Initial of Power | EUT |
|---|---|---|---|---|

| Test Frequency ID | | Frequency of Uplink [MHz] | Modulation | RB Size | RB Offset | Narrowband Index | Cell power (dBm/15kHz) | power (dBm) |
|---|---|---|---|---|---|---|---|---|
| Low Range | 20415 | 825.5 | QPSK | 1 | 0 | 0 | -85 | 23.35 |
| | | | QPSK | 1 | 5 | 0 | -85 | 23.17 |
| | | | QPSK | 1 | 0 | 1 | -85 | 23.21 |
| | | | QPSK | 1 | 5 | 1 | -85 | 23.3 |
| | | | QPSK | 3 | 3 | 0 | -85 | 22.32 |
| | | | QPSK | 3 | 3 | 1 | -85 | 22.35 |
| | | | QPSK | 6 | 0 | 0 | -85 | 21.26 |
| | | | QPSK | 6 | 0 | 1 | -85 | 21.28 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 22.43 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 22.34 |
| | | | 16QAM | 1 | 0 | 1 | -85 | 22.36 |
| | | | 16QAM | 1 | 5 | 1 | -85 | 22.56 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 21.76 |
| | | | 16QAM | 3 | 3 | 1 | -85 | 21.77 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.21 |
| | | | 16QAM | 5 | 0 | 1 | -85 | 21.45 |
| Mid Range | 20525 | 836.5 | QPSK | 1 | 0 | 0 | -85 | 23.34 |
| | | | QPSK | 1 | 5 | 0 | -85 | 23.37 |
| | | | QPSK | 1 | 0 | 1 | -85 | 23.28 |
| | | | QPSK | 1 | 5 | 1 | -85 | 23.3 |
| | | | QPSK | 3 | 3 | 0 | -85 | 22.35 |
| | | | QPSK | 3 | 3 | 1 | -85 | 22.31 |
| | | | QPSK | 6 | 0 | 0 | -85 | 21.3 |
| | | | QPSK | 6 | 0 | 1 | -85 | 21.22 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 22.51 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 22.38 |
| | | | 16QAM | 1 | 0 | 1 | -85 | 22.39 |
| | | | 16QAM | 1 | 5 | 1 | -85 | 22.31 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 21.67 |
| | | | 16QAM | 3 | 3 | 1 | -85 | 21.7 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.35 |
| | | | 16QAM | 5 | 0 | 1 | -85 | 21.15 |
| High Range | 20635 | 847.5 | QPSK | 1 | 0 | 0 | -85 | 23.38 |
| | | | QPSK | 1 | 5 | 0 | -85 | 23.29 |
| | | | QPSK | 1 | 0 | 1 | -85 | 23.22 |
| | | | QPSK | 1 | 5 | 1 | -85 | 23.24 |
| | | | QPSK | 3 | 3 | 0 | -85 | 22.22 |
| | | | QPSK | 3 | 3 | 1 | -85 | 22.3 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | QPSK | 6 | 0 | 0 | -85 | 21.26 |
| | | | QPSK | 6 | 0 | 1 | -85 | 21.23 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 22.45 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 22.38 |
| | | | 16QAM | 1 | 0 | 1 | -85 | 22.34 |
| | | | 16QAM | 1 | 5 | 1 | -85 | 22.35 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 21.66 |
| | | | 16QAM | 3 | 3 | 1 | -85 | 21.65 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.18 |
| | | | 16QAM | 5 | 0 | 1 | -85 | 21.53 |

| BW(MHz): | 5 |
|---|---|

| Test Frequency ID | $N_{UL}$ | Frequency of Uplink [MHz] | Test Configuration Initial of Power | | | | EUT | |
|---|---|---|---|---|---|---|---|---|
| | | | Modulation | RB Size | RB Offset | Narrowband Index | Cell power (dBm/15kHz) | power (dBm) |
| Low Range | 20425 | 826.5 | QPSK | 1 | 0 | 0 | -85 | 23.38 |
| | | | QPSK | 1 | 5 | 0 | -85 | 23.15 |
| | | | QPSK | 1 | 0 | 1 | -85 | 23.21 |
| | | | QPSK | 1 | 5 | 1 | -85 | 23.11 |
| | | | QPSK | 1 | 0 | 3 | -85 | 23.22 |
| | | | QPSK | 1 | 5 | 3 | -85 | 23.21 |
| | | | QPSK | 3 | 0 | 0 | -85 | 22.35 |
| | | | QPSK | 3 | 3 | 3 | -85 | 22.35 |
| | | | QPSK | 6 | 0 | 0 | -85 | 22.34 |
| | | | QPSK | 6 | 0 | 1 | -85 | 22.37 |
| | | | QPSK | 6 | 0 | 3 | -85 | 22.34 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 23.51 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 23.23 |
| | | | 16QAM | 1 | 0 | 1 | -85 | 23.35 |
| | | | 16QAM | 1 | 5 | 1 | -85 | 23.16 |
| | | | 16QAM | 1 | 0 | 3 | -85 | 23.24 |
| | | | 16QAM | 1 | 5 | 3 | -85 | 23.24 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 22.51 |
| | | | 16QAM | 3 | 3 | 3 | -85 | 22.71 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.46 |
| | | | 16QAM | 5 | 0 | 1 | -85 | 21.56 |
| | | | 16QAM | 5 | 0 | 3 | -85 | 21.62 |
| Mid Range | 20525 | 836.5 | QPSK | 1 | 0 | 0 | -85 | 23.34 |
| | | | QPSK | 1 | 5 | 0 | -85 | 23.14 |
| | | | QPSK | 1 | 0 | 1 | -85 | 23.24 |
| | | | QPSK | 1 | 5 | 1 | -85 | 23.27 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | QPSK | 1 | 0 | 3 | -85 | 23.33 |
| | | | QPSK | 1 | 5 | 3 | -85 | 23.16 |
| | | | QPSK | 3 | 0 | 0 | -85 | 22.21 |
| | | | QPSK | 3 | 3 | 3 | -85 | 22.22 |
| | | | QPSK | 6 | 0 | 0 | -85 | 22.38 |
| | | | QPSK | 6 | 0 | 1 | -85 | 22.27 |
| | | | QPSK | 6 | 0 | 3 | -85 | 22.33 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 23.19 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 23.42 |
| | | | 16QAM | 1 | 0 | 1 | -85 | 23.35 |
| | | | 16QAM | 1 | 5 | 1 | -85 | 23.26 |
| | | | 16QAM | 1 | 0 | 3 | -85 | 23.23 |
| | | | 16QAM | 1 | 5 | 3 | -85 | 23.29 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 22.53 |
| | | | 16QAM | 3 | 3 | 3 | -85 | 22.64 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.54 |
| | | | 16QAM | 5 | 0 | 1 | -85 | 21.19 |
| | | | 16QAM | 5 | 0 | 3 | -85 | 21.45 |
| High Range | 20625 | 846.5 | QPSK | 1 | 0 | 0 | -85 | 23.17 |
| | | | QPSK | 1 | 5 | 0 | -85 | 23.27 |
| | | | QPSK | 1 | 0 | 1 | -85 | 23.21 |
| | | | QPSK | 1 | 5 | 1 | -85 | 23.16 |
| | | | QPSK | 1 | 0 | 3 | -85 | 23.23 |
| | | | QPSK | 1 | 5 | 3 | -85 | 23.26 |
| | | | QPSK | 3 | 0 | 0 | -85 | 22.24 |
| | | | QPSK | 3 | 3 | 3 | -85 | 22.25 |
| | | | QPSK | 6 | 0 | 0 | -85 | 22.25 |
| | | | QPSK | 6 | 0 | 1 | -85 | 22.36 |
| | | | QPSK | 6 | 0 | 3 | -85 | 22.26 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 23.23 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 23.47 |
| | | | 16QAM | 1 | 0 | 1 | -85 | 23.24 |
| | | | 16QAM | 1 | 5 | 1 | -85 | 23.21 |
| | | | 16QAM | 1 | 0 | 3 | -85 | 23.27 |
| | | | 16QAM | 1 | 5 | 3 | -85 | 22.37 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 22.41 |
| | | | 16QAM | 3 | 3 | 3 | -85 | 22.49 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.42 |
| | | | 16QAM | 5 | 0 | 1 | -85 | 21.44 |
| | | | 16QAM | 5 | 0 | 3 | -85 | 21.33 |

| BW(MHz): | 10 |
|---|---|

| Test Frequency ID | $N_{UL}$ | Frequency of Uplink [MHz] | Test Configuration Initial of Power | | | | EUT | |
|---|---|---|---|---|---|---|---|---|
| | | | Modulation | RB Size | RB Offset | Narrowband Index | Cell power (dBm/15kHz) | power (dBm) |
| Low Range | 20450 | 829 | QPSK | 1 | 0 | 0 | -85 | 23.35 |
| | | | QPSK | 1 | 5 | 0 | -85 | 23.14 |
| | | | QPSK | 1 | 0 | 3 | -85 | 23.11 |
| | | | QPSK | 1 | 5 | 3 | -85 | 23.08 |
| | | | QPSK | 1 | 0 | 7 | -85 | 23.25 |
| | | | QPSK | 1 | 5 | 7 | -85 | 23.33 |
| | | | QPSK | 4 | 0 | 0 | -85 | 23.41 |
| | | | QPSK | 4 | 2 | 7 | -85 | 23.28 |
| | | | QPSK | 6 | 0 | 0 | -85 | 22.36 |
| | | | QPSK | 6 | 0 | 7 | -85 | 22.29 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 23.19 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 23.22 |
| | | | 16QAM | 1 | 0 | 3 | -85 | 23.14 |
| | | | 16QAM | 1 | 5 | 3 | -85 | 23.08 |
| | | | 16QAM | 1 | 0 | 7 | -85 | 23.02 |
| | | | 16QAM | 1 | 5 | 7 | -85 | 23.27 |
| | | | 16QAM | 4 | 2 | 0 | -85 | 22.43 |
| | | | 16QAM | 4 | 2 | 7 | -85 | 22.49 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 22.56 |
| | | | 16QAM | 5 | 0 | 7 | -85 | 22.31 |
| Mid Range | 20525 | 836.5 | QPSK | 1 | 0 | 0 | -85 | 23.23 |
| | | | QPSK | 1 | 5 | 0 | -85 | 23.17 |
| | | | QPSK | 1 | 0 | 3 | -85 | 23.27 |
| | | | QPSK | 1 | 5 | 3 | -85 | 23.26 |
| | | | QPSK | 1 | 0 | 7 | -85 | 23.28 |
| | | | QPSK | 1 | 5 | 7 | -85 | 23.21 |
| | | | QPSK | 4 | 0 | 0 | -85 | 23.28 |
| | | | QPSK | 4 | 2 | 7 | -85 | 23.31 |
| | | | QPSK | 6 | 0 | 0 | -85 | 22.19 |
| | | | QPSK | 6 | 0 | 7 | -85 | 22.35 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 23.11 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 23.12 |
| | | | 16QAM | 1 | 0 | 3 | -85 | 23.02 |
| | | | 16QAM | 1 | 5 | 3 | -85 | 23 |
| | | | 16QAM | 1 | 0 | 7 | -85 | 23.02 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 16QAM | 1 | 5 | 7 | -85 | 23.01 |
| | | | 16QAM | 4 | 2 | 0 | -85 | 22.37 |
| | | | 16QAM | 4 | 2 | 7 | -85 | 22.47 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 22.62 |
| | | | 16QAM | 5 | 0 | 7 | -85 | 22.61 |
| High Range | 20600 | 844 | QPSK | 1 | 0 | 0 | -85 | 23.31 |
| | | | QPSK | 1 | 5 | 0 | -85 | 23.33 |
| | | | QPSK | 1 | 5 | 7 | -85 | 23.34 |
| | | | QPSK | 1 | 0 | 3 | -85 | 23.31 |
| | | | QPSK | 1 | 5 | 3 | -85 | 23.34 |
| | | | QPSK | 1 | 0 | 7 | -85 | 23.37 |
| | | | QPSK | 4 | 0 | 0 | -85 | 23.11 |
| | | | QPSK | 4 | 2 | 7 | -85 | 23.32 |
| | | | QPSK | 6 | 0 | 0 | -85 | 22.39 |
| | | | QPSK | 6 | 0 | 7 | -85 | 22.36 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 23.01 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 23.07 |
| | | | 16QAM | 1 | 0 | 3 | -85 | 23.11 |
| | | | 16QAM | 1 | 5 | 3 | -85 | 23.26 |
| | | | 16QAM | 1 | 0 | 7 | -85 | 23.72 |
| | | | 16QAM | 1 | 5 | 7 | -85 | 23.23 |
| | | | 16QAM | 4 | 2 | 0 | -85 | 22.55 |
| | | | 16QAM | 4 | 2 | 7 | -85 | 22.06 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 22.48 |
| | | | 16QAM | 5 | 0 | 7 | -85 | 22.66 |

| eMTC | Band 26 | Region(s): | FCC | Power: | Class 3 | 23 | Tolerance: | 3.2 | maximum: | 23.27 |
|---|---|---|---|---|---|---|---|---|---|---|

BW(MHz): 1.4

| Test Frequency ID | NUL | Frequency of Uplink [MHz] | T Test Configuration Initial of Power | | | | EUT | |
|---|---|---|---|---|---|---|---|---|
| | | | Modulation | RB Size | RB Offset | Narrowband Index | Cell power (dBm/15kHz) | power (dBm) |
| Low Range | 26797 | 824.7 | QPSK | 1 | 0 | 0 | -85 | 23.11 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.92 |
| | | | QPSK | 3 | 3 | 0 | -85 | 21.46 |
| | | | QPSK | 6 | 0 | 0 | -85 | 20.56 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 22.07 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 22.09 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 21.15 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.28 |
| Mid Range | 26915 | 836.5 | QPSK | 1 | 0 | 0 | -85 | 22.91 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.92 |
| | | | QPSK | 3 | 3 | 0 | -85 | 21.44 |
| | | | QPSK | 6 | 0 | 0 | -85 | 20.41 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 21.42 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 21.46 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 20.92 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.17 |
| High Range | 27033 | 848.3 | QPSK | 1 | 0 | 0 | -85 | 23.02 |
| | | | QPSK | 1 | 5 | 0 | -85 | 23.21 |
| | | | QPSK | 3 | 3 | 0 | -85 | 21.31 |
| | | | QPSK | 6 | 0 | 0 | -85 | 20.29 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 21.84 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 21.96 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 20.79 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.02 |

BW(MHz): 3

| Test Frequency ID | NUL | Frequency of Uplink [MHz] | Test Configuration Initial of Power | | | | EUT | |
|---|---|---|---|---|---|---|---|---|
| | | | Modulation | RB Size | RB Offset | Narrowband Index | Cell power (dBm/15kHz) | power (dBm) |
| Low Range | 26805 | 825.5 | QPSK | 1 | 0 | 0 | -85 | 22.42 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.43 |
| | | | QPSK | 1 | 0 | 1 | -85 | 22.66 |
| | | | QPSK | 1 | 5 | 1 | -85 | 22.89 |
| | | | QPSK | 3 | 3 | 0 | -85 | 21.4 |
| | | | QPSK | 3 | 3 | 1 | -85 | 21.69 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | QPSK | 6 | 0 | 0 | -85 | 20.48 |
| | | | QPSK | 6 | 0 | 1 | -85 | 20.7 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 21.78 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 21.8 |
| | | | 16QAM | 1 | 0 | 1 | -85 | 22.01 |
| | | | 16QAM | 1 | 5 | 1 | -85 | 22.04 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 21.04 |
| | | | 16QAM | 3 | 3 | 1 | -85 | 21.14 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.12 |
| | | | 16QAM | 5 | 0 | 1 | -85 | 21.2 |
| Mid Range | 26915 | 836.5 | QPSK | 1 | 0 | 0 | -85 | 22.47 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.57 |
| | | | QPSK | 1 | 0 | 1 | -85 | 22.31 |
| | | | QPSK | 1 | 5 | 1 | -85 | 22.34 |
| | | | QPSK | 3 | 3 | 0 | -85 | 21.42 |
| | | | QPSK | 3 | 3 | 1 | -85 | 21.29 |
| | | | QPSK | 6 | 0 | 0 | -85 | 20.57 |
| | | | QPSK | 6 | 0 | 1 | -85 | 20.41 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 21.78 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 21.81 |
| | | | 16QAM | 1 | 0 | 1 | -85 | 21.67 |
| | | | 16QAM | 1 | 5 | 1 | -85 | 21.79 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 21.04 |
| | | | 16QAM | 3 | 3 | 1 | -85 | 20.93 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 20.94 |
| | | | 16QAM | 5 | 0 | 1 | -85 | 20.84 |
| High Range | 27025 | 847.5 | QPSK | 1 | 0 | 0 | -85 | 22.28 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.29 |
| | | | QPSK | 1 | 0 | 1 | -85 | 22.23 |
| | | | QPSK | 1 | 5 | 1 | -85 | 22.25 |
| | | | QPSK | 3 | 3 | 0 | -85 | 21.06 |
| | | | QPSK | 3 | 3 | 1 | -85 | 21.27 |
| | | | QPSK | 6 | 0 | 0 | -85 | 20.26 |
| | | | QPSK | 6 | 0 | 1 | -85 | 20.32 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 21.51 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 21.63 |
| | | | 16QAM | 1 | 0 | 1 | -85 | 21.67 |
| | | | 16QAM | 1 | 5 | 1 | -85 | 21.71 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 20.88 |
| | | | 16QAM | 3 | 3 | 1 | -85 | 20.77 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 20.74 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 16QAM | 5 | 0 | 1 | -85 | 20.68 |

| BW(MHz): | 5 |
|---|---|

| Test Frequency ID | NUL | Frequency of Uplink [MHz] | Test Configuration Initial of Power | | | | EUT | |
|---|---|---|---|---|---|---|---|---|
| | | | Modulation | RB Size | RB Offset | Narrowband Index | Cell power (dBm/15kHz) | power (dBm) |
| Low Range | 26815 | 826.5 | QPSK | 1 | 0 | 0 | -85 | 22.42 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.52 |
| | | | QPSK | 1 | 0 | 1 | -85 | 22.72 |
| | | | QPSK | 1 | 5 | 1 | -85 | 22.66 |
| | | | QPSK | 1 | 0 | 3 | -85 | 22.62 |
| | | | QPSK | 1 | 5 | 3 | -85 | 22.55 |
| | | | QPSK | 3 | 0 | 0 | -85 | 21.74 |
| | | | QPSK | 3 | 3 | 3 | -85 | 21.37 |
| | | | QPSK | 6 | 0 | 0 | -85 | 21.51 |
| | | | QPSK | 6 | 0 | 1 | -85 | 21.69 |
| | | | QPSK | 6 | 0 | 3 | -85 | 21.39 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 22.95 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 23.01 |
| | | | 16QAM | 1 | 0 | 1 | -85 | 23.11 |
| | | | 16QAM | 1 | 5 | 1 | -85 | 23.13 |
| | | | 16QAM | 1 | 0 | 3 | -85 | 22.59 |
| | | | 16QAM | 1 | 5 | 3 | -85 | 22.67 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 21.89 |
| | | | 16QAM | 3 | 3 | 3 | -85 | 21.77 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 20.95 |
| | | | 16QAM | 5 | 0 | 1 | -85 | 21.26 |
| | | | 16QAM | 5 | 0 | 3 | -85 | 20.9 |
| Mid Range | 26915 | 836.5 | QPSK | 1 | 0 | 0 | -85 | 22.71 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.32 |
| | | | QPSK | 1 | 0 | 1 | -85 | 22.54 |
| | | | QPSK | 1 | 5 | 1 | -85 | 22.43 |
| | | | QPSK | 1 | 0 | 3 | -85 | 22.7 |
| | | | QPSK | 1 | 5 | 3 | -85 | 22.61 |
| | | | QPSK | 3 | 0 | 0 | -85 | 21.35 |
| | | | QPSK | 3 | 3 | 3 | -85 | 21.64 |
| | | | QPSK | 6 | 0 | 0 | -85 | 21.42 |
| | | | QPSK | 6 | 0 | 1 | -85 | 21.48 |
| | | | QPSK | 6 | 0 | 3 | -85 | 21.56 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 22.96 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 22.96 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 16QAM | 1 | 0 | 1 | -85 | 22.74 |
| | | | 16QAM | 1 | 5 | 1 | -85 | 22.86 |
| | | | 16QAM | 1 | 0 | 3 | -85 | 22.98 |
| | | | 16QAM | 1 | 5 | 3 | -85 | 22.78 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 21.86 |
| | | | 16QAM | 3 | 3 | 3 | -85 | 21.93 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 20.73 |
| | | | 16QAM | 5 | 0 | 1 | -85 | 20.97 |
| | | | 16QAM | 5 | 0 | 3 | -85 | 21.78 |
| High Range | 27015 | 846.5 | QPSK | 1 | 0 | 0 | -85 | 22.64 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.52 |
| | | | QPSK | 1 | 0 | 1 | -85 | 22.37 |
| | | | QPSK | 1 | 5 | 1 | -85 | 22.41 |
| | | | QPSK | 1 | 0 | 3 | -85 | 22.35 |
| | | | QPSK | 1 | 5 | 3 | -85 | 22.32 |
| | | | QPSK | 3 | 0 | 0 | -85 | 21.67 |
| | | | QPSK | 3 | 3 | 3 | -85 | 21.33 |
| | | | QPSK | 6 | 0 | 0 | -85 | 21.49 |
| | | | QPSK | 6 | 0 | 1 | -85 | 21.31 |
| | | | QPSK | 6 | 0 | 3 | -85 | 21.36 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 23.02 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 22.94 |
| | | | 16QAM | 1 | 0 | 1 | -85 | 22.54 |
| | | | 16QAM | 1 | 5 | 1 | -85 | 22.32 |
| | | | 16QAM | 1 | 0 | 3 | -85 | 22.47 |
| | | | 16QAM | 1 | 5 | 3 | -85 | 22.84 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 21.94 |
| | | | 16QAM | 3 | 3 | 3 | -85 | 21.68 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 20.99 |
| | | | 16QAM | 5 | 0 | 1 | -85 | 20.78 |
| | | | 16QAM | 5 | 0 | 3 | -85 | 20.73 |

| BW(MHz): | 10 |
|---|---|

| Test Frequency ID | NUL | Frequency of Uplink [MHz] | Test Configuration Initial of Power | | | | EUT | |
|---|---|---|---|---|---|---|---|---|
| | | | Modulation | RB Size | RB Offset | Narrowband Index | Cell power (dBm/15kHz) | power (dBm) |
| Low Range | 26840 | 829 | QPSK | 1 | 0 | 0 | -85 | 22.87 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.86 |
| | | | QPSK | 1 | 0 | 3 | -85 | 22.87 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | QPSK | 1 | 5 | 3 | -85 | 22.85 |
| | | | QPSK | 1 | 0 | 7 | -85 | 22.74 |
| | | | QPSK | 1 | 5 | 7 | -85 | 22.78 |
| | | | QPSK | 4 | 0 | 0 | -85 | 22.92 |
| | | | QPSK | 4 | 2 | 7 | -85 | 22.85 |
| | | | QPSK | 6 | 0 | 0 | -85 | 21.94 |
| | | | QPSK | 6 | 0 | 7 | -85 | 21.85 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 23.12 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 23.01 |
| | | | 16QAM | 1 | 0 | 3 | -85 | 23.01 |
| | | | 16QAM | 1 | 5 | 3 | -85 | 22.92 |
| | | | 16QAM | 1 | 0 | 7 | -85 | 23.01 |
| | | | 16QAM | 1 | 5 | 7 | -85 | 23.07 |
| | | | 16QAM | 4 | 2 | 0 | -85 | 21.97 |
| | | | 16QAM | 4 | 2 | 7 | -85 | 21.98 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 22.12 |
| | | | 16QAM | 5 | 0 | 7 | -85 | 21.89 |
| Mid Range | 26915 | 836.5 | QPSK | 1 | 0 | 0 | -85 | 22.74 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.73 |
| | | | QPSK | 1 | 0 | 3 | -85 | 22.75 |
| | | | QPSK | 1 | 5 | 3 | -85 | 22.84 |
| | | | QPSK | 1 | 0 | 7 | -85 | 22.81 |
| | | | QPSK | 1 | 5 | 7 | -85 | 22.81 |
| | | | QPSK | 4 | 0 | 0 | -85 | 22.79 |
| | | | QPSK | 4 | 2 | 7 | -85 | 22.71 |
| | | | QPSK | 6 | 0 | 0 | -85 | 21.78 |
| | | | QPSK | 6 | 0 | 7 | -85 | 21.81 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 23.02 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 23.11 |
| | | | 16QAM | 1 | 0 | 3 | -85 | 23.14 |
| | | | 16QAM | 1 | 5 | 3 | -85 | 23.01 |
| | | | 16QAM | 1 | 0 | 7 | -85 | 23.16 |
| | | | 16QAM | 1 | 5 | 7 | -85 | 23.03 |
| | | | 16QAM | 4 | 2 | 0 | -85 | 21.91 |
| | | | 16QAM | 4 | 2 | 7 | -85 | 21.97 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 22.18 |
| | | | 16QAM | 5 | 0 | 7 | -85 | 21.72 |
| High Range | 26990 | 844 | QPSK | 1 | 0 | 0 | -85 | 22.62 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.71 |
| | | | QPSK | 1 | 5 | 7 | -85 | 22.51 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | QPSK | 1 | 0 | 3 | -85 | 22.71 |
| | | | QPSK | 1 | 5 | 3 | -85 | 22.74 |
| | | | QPSK | 1 | 0 | 7 | -85 | 22.53 |
| | | | QPSK | 4 | 0 | 0 | -85 | 22.71 |
| | | | QPSK | 4 | 2 | 7 | -85 | 22.58 |
| | | | QPSK | 6 | 0 | 0 | -85 | 21.74 |
| | | | QPSK | 6 | 0 | 7 | -85 | 21.61 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 23.15 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 23.14 |
| | | | 16QAM | 1 | 0 | 3 | -85 | 23.02 |
| | | | 16QAM | 1 | 5 | 3 | -85 | 23.01 |
| | | | 16QAM | 1 | 0 | 7 | -85 | 23 |
| | | | 16QAM | 1 | 5 | 7 | -85 | 23.05 |
| | | | 16QAM | 4 | 2 | 0 | -85 | 21.89 |
| | | | 16QAM | 4 | 2 | 7 | -85 | 21.87 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 22.15 |
| | | | 16QAM | 5 | 0 | 7 | -85 | 21.91 |

| BW(MHz): | 15 |
|---|---|

| Test Frequency ID | NUL | Frequency of Uplink [MHz] | Test Configuration Initial of Power | | | | EUT | |
|---|---|---|---|---|---|---|---|---|
| | | | Modulation | RB Size | RB Offset | Narrowband Index | Cell power (dBm/15kHz) | power (dBm) |
| Low Range | 26865 | 831.5 | QPSK | 1 | 0 | 0 | -85 | 22.74 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.79 |
| | | | QPSK | 1 | 0 | 5 | -85 | 22.57 |
| | | | QPSK | 1 | 5 | 5 | -85 | 22.63 |
| | | | QPSK | 1 | 0 | 11 | -85 | 22.48 |
| | | | QPSK | 1 | 5 | 11 | -85 | 22.8 |
| | | | QPSK | 3 | 0 | 0 | -85 | 22.78 |
| | | | QPSK | 3 | 3 | 11 | -85 | 22.65 |
| | | | QPSK | 6 | 0 | 0 | -85 | 21.71 |
| | | | QPSK | 6 | 0 | 11 | -85 | 22.69 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 23.04 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 23.11 |
| | | | 16QAM | 1 | 0 | 5 | -85 | 23.01 |
| | | | 16QAM | 1 | 5 | 5 | -85 | 23.06 |
| | | | 16QAM | 1 | 0 | 11 | -85 | 23.1 |
| | | | 16QAM | 1 | 5 | 11 | -85 | 23.03 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 23.04 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 16QAM | 3 | 3 | 11 | -85 | 22.94 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 21.91 |
| | | | 16QAM | 5 | 0 | 11 | -85 | 23.01 |
| Mid Range | 26915 | 836.5 | QPSK | 1 | 0 | 0 | -85 | 22.61 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.81 |
| | | | QPSK | 1 | 0 | 5 | -85 | 22.67 |
| | | | QPSK | 1 | 5 | 5 | -85 | 22.95 |
| | | | QPSK | 1 | 0 | 11 | -85 | 22.73 |
| | | | QPSK | 1 | 5 | 11 | -85 | 22.88 |
| | | | QPSK | 3 | 0 | 0 | -85 | 22.75 |
| | | | QPSK | 3 | 3 | 11 | -85 | 22.84 |
| | | | QPSK | 6 | 0 | 0 | -85 | 22.77 |
| | | | QPSK | 6 | 0 | 11 | -85 | 22.71 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 23.1 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 23.11 |
| | | | 16QAM | 1 | 0 | 5 | -85 | 23.02 |
| | | | 16QAM | 1 | 5 | 5 | -85 | 23.08 |
| | | | 16QAM | 1 | 0 | 11 | -85 | 23.01 |
| | | | 16QAM | 1 | 5 | 11 | -85 | 23.1 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 23.03 |
| | | | 16QAM | 3 | 3 | 11 | -85 | 23.02 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 23.06 |
| | | | 16QAM | 5 | 0 | 11 | -85 | 23.05 |
| High Range | 26965 | 841.5 | QPSK | 1 | 0 | 0 | -85 | 22.76 |
| | | | QPSK | 1 | 5 | 0 | -85 | 22.74 |
| | | | QPSK | 1 | 0 | 5 | -85 | 22.6 |
| | | | QPSK | 1 | 5 | 5 | -85 | 22.72 |
| | | | QPSK | 1 | 0 | 11 | -85 | 22.71 |
| | | | QPSK | 1 | 5 | 11 | -85 | 22.61 |
| | | | QPSK | 3 | 0 | 0 | -85 | 22.84 |
| | | | QPSK | 3 | 3 | 11 | -85 | 22.47 |
| | | | QPSK | 6 | 0 | 0 | -85 | 22.72 |
| | | | QPSK | 6 | 0 | 11 | -85 | 22.54 |
| | | | 16QAM | 1 | 0 | 0 | -85 | 23.02 |
| | | | 16QAM | 1 | 5 | 0 | -85 | 23.02 |
| | | | 16QAM | 1 | 0 | 5 | -85 | 23.27 |
| | | | 16QAM | 1 | 5 | 5 | -85 | 23.01 |
| | | | 16QAM | 1 | 0 | 11 | -85 | 22.34 |
| | | | 16QAM | 1 | 5 | 11 | -85 | 23.01 |
| | | | 16QAM | 3 | 0 | 0 | -85 | 23 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 16QAM | 3 | 3 | 11 | -85 | 22.86 |
| | | | 16QAM | 5 | 0 | 0 | -85 | 23.15 |
| | | | 16QAM | 5 | 0 | 11 | -85 | 23.04 |

**ERP Power (dBm)**

| GSM | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Plane** | **Channel** | **Frequency (MHz)** | **Reading (dBm)** | **Correction Factor (dB)** | **ERP (dBm)** | **ERP (mW)** | **Polarization (H/V)** |
| X | 128 | 824.2 | -13.20 | 32.62 | 17.27 | 53.33 | H |
| | 189 | 836.4 | -13.39 | 32.52 | 16.98 | 49.89 | |
| | 251 | 848.8 | -13.66 | 32.65 | 16.84 | 48.31 | |
| | 128 | 824.2 | -17.24 | 32.76 | 13.37 | 21.73 | V |
| | 189 | 836.4 | -17.30 | 32.39 | 12.94 | 19.68 | |
| | 251 | 848.8 | -17.96 | 32.54 | 12.43 | 17.50 | |

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

| EDGE | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Plane** | **Channel** | **Frequency (MHz)** | **Reading (dBm)** | **Correction Factor (dB)** | **ERP (dBm)** | **ERP (mW)** | **Polarization (H/V)** |
| X | 128 | 824.2 | -13.27 | 32.62 | 17.20 | 52.48 | H |
| | 189 | 836.4 | -13.50 | 32.52 | 16.87 | 48.64 | |
| | 251 | 848.8 | -13.76 | 32.65 | 16.74 | 47.21 | |
| | 128 | 824.2 | -17.29 | 32.76 | 13.32 | 21.48 | V |
| | 189 | 836.4 | -17.33 | 32.39 | 12.91 | 19.54 | |
| | 251 | 848.8 | -18.12 | 32.54 | 12.27 | 16.87 | |

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

| LTE Band 5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 1.4 MHz / QPSK | | | | | | | |
| Plane | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 20407 | 824.7 | -10.99 | 32.62 | 19.48 | 88.72 | H |
| | 20525 | 836.5 | -10.94 | 32.52 | 19.43 | 87.70 | |
| | 20643 | 848.3 | -11.38 | 32.65 | 19.12 | 81.66 | |
| | 20407 | 824.7 | -16.09 | 32.76 | 14.52 | 28.31 | V |
| | 20525 | 836.5 | -15.96 | 32.39 | 14.28 | 26.79 | |
| | 20643 | 848.3 | -16.34 | 32.54 | 14.05 | 25.41 | |
| Channel Bandwidth: 1.4 MHz / 16QAM | | | | | | | |
| X | 20407 | 824.7 | -12.00 | 32.62 | 18.47 | 70.31 | H |
| | 20525 | 836.5 | -11.95 | 32.52 | 18.42 | 69.50 | |
| | 20643 | 848.3 | -12.39 | 32.65 | 18.11 | 64.71 | |
| | 20407 | 824.7 | -17.10 | 32.76 | 13.51 | 22.44 | V |
| | 20525 | 836.5 | -16.97 | 32.39 | 13.27 | 21.23 | |
| | 20643 | 848.3 | -17.35 | 32.54 | 13.04 | 20.14 | |

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

| LTE Band 5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 3 MHz / QPSK | | | | | | | |
| Plane | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 20415 | 825.5 | -10.73 | 32.62 | 19.74 | 94.19 | H |
| | 20525 | 836.5 | -10.68 | 32.52 | 19.69 | 93.11 | |
| | 20635 | 847.5 | -11.12 | 32.65 | 19.38 | 86.70 | |
| | 20415 | 825.5 | -15.83 | 32.76 | 14.78 | 30.06 | V |
| | 20525 | 836.5 | -15.70 | 32.39 | 14.54 | 28.44 | |
| | 20635 | 847.5 | -16.08 | 32.54 | 14.31 | 26.98 | |
| Channel Bandwidth: 3 MHz / 16QAM | | | | | | | |
| X | 20415 | 825.5 | -11.76 | 32.62 | 18.71 | 74.30 | H |
| | 20525 | 836.5 | -11.71 | 32.52 | 18.66 | 73.45 | |
| | 20635 | 847.5 | -12.15 | 32.65 | 18.35 | 68.39 | |
| | 20415 | 825.5 | -16.86 | 32.76 | 13.75 | 23.71 | V |
| | 20525 | 836.5 | -16.73 | 32.39 | 13.51 | 22.44 | |
| | 20635 | 847.5 | -17.11 | 32.54 | 13.28 | 21.28 | |

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

| LTE Band 5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 5 MHz / QPSK | | | | | | | |
| Plane | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 20425 | 826.5 | -10.49 | 32.62 | 19.98 | 99.54 | H |
| | 20525 | 836.5 | -10.44 | 32.52 | 19.93 | 98.40 | |
| | 20625 | 846.5 | -10.88 | 32.65 | 19.62 | 91.62 | |
| | 20425 | 826.5 | -15.59 | 32.76 | 15.02 | 31.77 | V |
| | 20525 | 836.5 | -15.46 | 32.39 | 14.78 | 30.06 | |
| | 20625 | 846.5 | -15.84 | 32.54 | 14.55 | 28.51 | |
| Channel Bandwidth: 5 MHz / 16QAM | | | | | | | |
| X | 20425 | 826.5 | -11.51 | 32.62 | 18.96 | 78.70 | H |
| | 20525 | 836.5 | -11.46 | 32.52 | 18.91 | 77.80 | |
| | 20625 | 846.5 | -11.90 | 32.65 | 18.60 | 72.44 | |
| | 20425 | 826.5 | -16.61 | 32.76 | 14.00 | 25.12 | V |
| | 20525 | 836.5 | -16.48 | 32.39 | 13.76 | 23.77 | |
| | 20625 | 846.5 | -16.86 | 32.54 | 13.53 | 22.54 | |

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

| LTE Band 5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 10 MHz / QPSK | | | | | | | |
| Plane | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 20450 | 829.0 | -10.26 | 32.62 | 20.21 | 104.95 | H |
| | 20525 | 836.5 | -10.21 | 32.52 | 20.16 | 103.75 | |
| | 20600 | 844.0 | -10.65 | 32.65 | 19.85 | 96.61 | |
| | 20450 | 829.0 | -15.36 | 32.76 | 15.25 | 33.50 | V |
| | 20525 | 836.5 | -15.23 | 32.39 | 15.01 | 31.70 | |
| | 20600 | 844.0 | -15.61 | 32.54 | 14.78 | 30.06 | |
| Channel Bandwidth: 10 MHz / 16QAM | | | | | | | |
| X | 20450 | 829.0 | -11.28 | 32.62 | 19.19 | 82.99 | H |
| | 20525 | 836.5 | -11.23 | 32.52 | 19.14 | 82.04 | |
| | 20600 | 844.0 | -11.67 | 32.65 | 18.83 | 76.38 | |
| | 20450 | 829.0 | -16.38 | 32.76 | 14.23 | 26.49 | V |
| | 20525 | 836.5 | -16.25 | 32.39 | 13.99 | 25.06 | |
| | 20600 | 844.0 | -16.63 | 32.54 | 13.76 | 23.77 | |

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

| LTE Band 26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 1.4 MHz / QPSK | | | | | | | |
| Plane | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 26797 | 824.7 | -12.05 | 32.62 | 18.42 | 69.50 | H |
| | 26915 | 836.5 | -12.12 | 32.52 | 18.25 | 66.83 | |
| | 27033 | 848.3 | -11.94 | 32.65 | 18.56 | 71.78 | |
| | 26797 | 824.7 | -17.39 | 32.76 | 13.22 | 20.99 | V |
| | 26915 | 836.5 | -17.19 | 32.39 | 13.05 | 20.18 | |
| | 27033 | 848.3 | -17.11 | 32.54 | 13.28 | 21.28 | |
| Channel Bandwidth: 1.4 MHz / 16QAM | | | | | | | |
| X | 26797 | 824.7 | -13.03 | 32.62 | 17.44 | 55.46 | H |
| | 26915 | 836.5 | -13.10 | 32.52 | 17.27 | 53.33 | |
| | 27033 | 848.3 | -12.92 | 32.65 | 17.58 | 57.28 | |
| | 26797 | 824.7 | -18.37 | 32.76 | 12.24 | 16.75 | V |
| | 26915 | 836.5 | -18.17 | 32.39 | 12.07 | 16.11 | |
| | 27033 | 848.3 | -18.09 | 32.54 | 12.30 | 16.98 | |

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

| LTE Band 26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 3 MHz / QPSK | | | | | | | |
| Plane | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 26805 | 825.5 | -11.80 | 32.62 | 18.67 | 73.62 | H |
| | 26915 | 836.5 | -11.87 | 32.52 | 18.50 | 70.79 | |
| | 27025 | 847.5 | -11.69 | 32.65 | 18.81 | 76.03 | |
| | 26805 | 825.5 | -17.14 | 32.76 | 13.47 | 22.23 | V |
| | 26915 | 836.5 | -16.94 | 32.39 | 13.30 | 21.38 | |
| | 27025 | 847.5 | -16.86 | 32.54 | 13.53 | 22.54 | |
| Channel Bandwidth: 3 MHz / 16QAM | | | | | | | |
| X | 26805 | 825.5 | -12.78 | 32.62 | 17.69 | 58.75 | H |
| | 26915 | 836.5 | -12.85 | 32.52 | 17.52 | 56.49 | |
| | 27025 | 847.5 | -12.67 | 32.65 | 17.83 | 60.67 | |
| | 26805 | 825.5 | -18.12 | 32.76 | 12.49 | 17.74 | V |
| | 26915 | 836.5 | -17.92 | 32.39 | 12.32 | 17.06 | |
| | 27025 | 847.5 | -17.84 | 32.54 | 12.55 | 17.99 | |

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

| LTE Band 26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 5 MHz / QPSK | | | | | | | |
| Plane | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 26815 | 826.5 | -11.57 | 32.62 | 18.90 | 77.62 | H |
| | 26915 | 836.5 | -11.64 | 32.52 | 18.73 | 74.64 | |
| | 27015 | 846.5 | -11.46 | 32.65 | 19.04 | 80.17 | |
| | 26815 | 826.5 | -16.91 | 32.76 | 13.70 | 23.44 | V |
| | 26919 | 836.5 | -16.71 | 32.39 | 13.53 | 22.54 | |
| | 27015 | 846.5 | -16.63 | 32.54 | 13.76 | 23.77 | |
| Channel Bandwidth: 5 MHz / 16QAM | | | | | | | |
| X | 26815 | 826.5 | -12.57 | 32.62 | 17.90 | 61.66 | H |
| | 26915 | 836.5 | -12.64 | 32.52 | 17.73 | 59.29 | |
| | 27015 | 846.5 | -12.46 | 32.65 | 18.04 | 63.68 | |
| | 26815 | 826.5 | -17.91 | 32.76 | 12.70 | 18.62 | V |
| | 26919 | 836.5 | -17.71 | 32.39 | 12.53 | 17.91 | |
| | 27015 | 846.5 | -17.63 | 32.54 | 12.76 | 18.88 | |

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

| LTE Band 26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 10 MHz / QPSK | | | | | | | |
| Plane | Channel | Frequency (MHz) | Reading (dBm) | Correction Factor (dB) | ERP (dBm) | ERP (mW) | Polarization (H/V) |
| X | 26840 | 829.0 | -11.33 | 32.62 | 19.14 | 82.04 | H |
| | 26915 | 836.5 | -11.40 | 32.52 | 18.97 | 78.89 | |
| | 26990 | 844.0 | -11.22 | 32.65 | 19.28 | 84.72 | |
| | 26840 | 829.0 | -16.67 | 32.76 | 13.94 | 24.77 | V |
| | 26919 | 836.5 | -16.47 | 32.39 | 13.77 | 23.82 | |
| | 26990 | 844.0 | -16.39 | 32.54 | 14.00 | 25.12 | |
| Channel Bandwidth: 10 MHz / 16QAM | | | | | | | |
| X | 26840 | 829.0 | -12.33 | 32.62 | 18.14 | 65.16 | H |
| | 26915 | 836.5 | -12.40 | 32.52 | 17.97 | 62.66 | |
| | 26990 | 844.0 | -12.22 | 32.65 | 18.28 | 67.30 | |
| | 26840 | 829.0 | -17.67 | 32.76 | 12.94 | 19.68 | V |
| | 26919 | 836.5 | -17.47 | 32.39 | 12.77 | 18.92 | |
| | 26990 | 844.0 | -17.39 | 32.54 | 13.00 | 19.95 | |

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

| LTE Band 26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Channel Bandwidth: 15 MHz / QPSK** | | | | | | | |
| **Plane** | **Channel** | **Frequency (MHz)** | **Reading (dBm)** | **Correction Factor (dB)** | **ERP (dBm)** | **ERP (mW)** | **Polarization (H/V)** |
| X | 26865 | 831.5 | -11.08 | 32.62 | 19.39 | 86.90 | H |
| | 26915 | 836.5 | -11.15 | 32.52 | 19.22 | 83.56 | |
| | 26965 | 841.5 | -10.97 | 32.65 | 19.53 | 89.74 | |
| | 26865 | 831.5 | -16.42 | 32.76 | 14.19 | 26.24 | V |
| | 26915 | 836.5 | -16.22 | 32.39 | 14.02 | 25.23 | |
| | 26965 | 841.5 | -16.14 | 32.54 | 14.25 | 26.61 | |
| **Channel Bandwidth: 15 MHz / 16QAM** | | | | | | | |
| X | 26865 | 831.5 | -12.10 | 32.62 | 18.37 | 68.71 | H |
| | 26915 | 836.5 | -12.17 | 32.52 | 18.20 | 66.07 | |
| | 26965 | 841.5 | -11.99 | 32.65 | 18.51 | 70.96 | |
| | 26865 | 831.5 | -17.44 | 32.76 | 13.17 | 20.75 | V |
| | 26915 | 836.5 | -17.24 | 32.39 | 13.00 | 19.95 | |
| | 26965 | 841.5 | -17.16 | 32.54 | 13.23 | 21.04 | |

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB) – 2.15

## 4.2 Modulation Characteristics Measurement

### 4.2.1 Limits of Modulation Characteristics

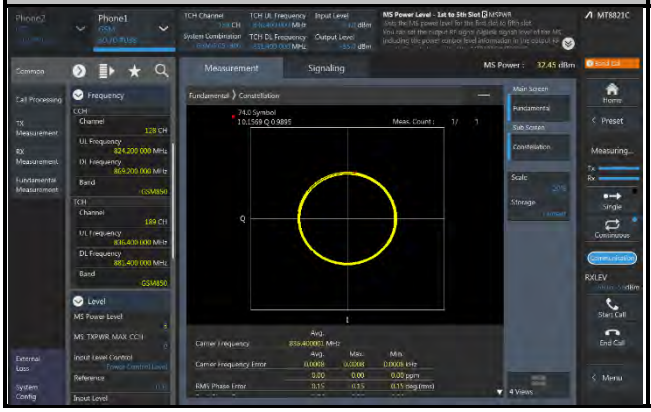
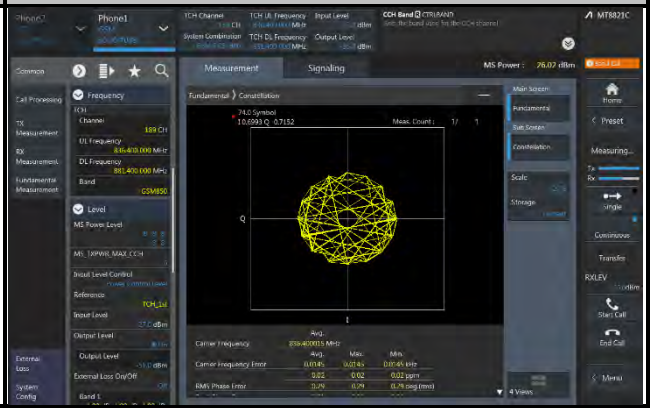
N/A

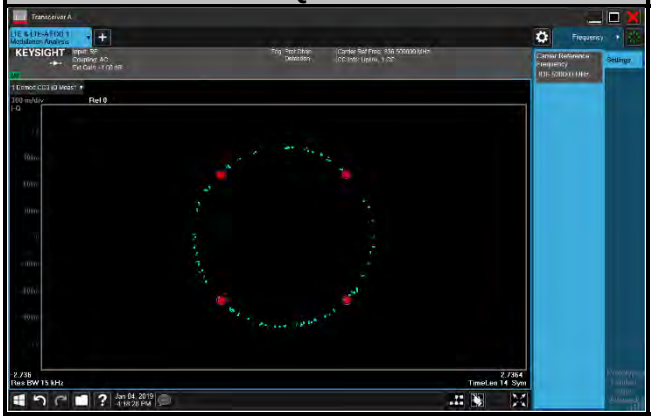
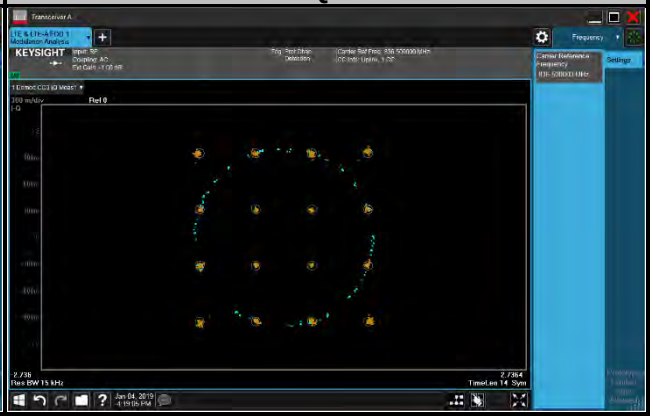
### 4.2.2 Test Setup

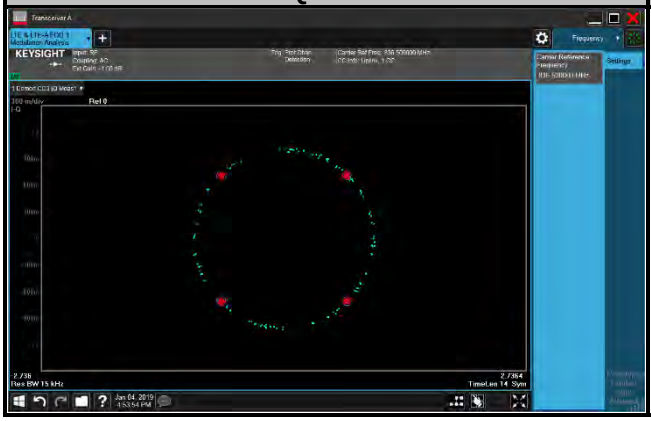
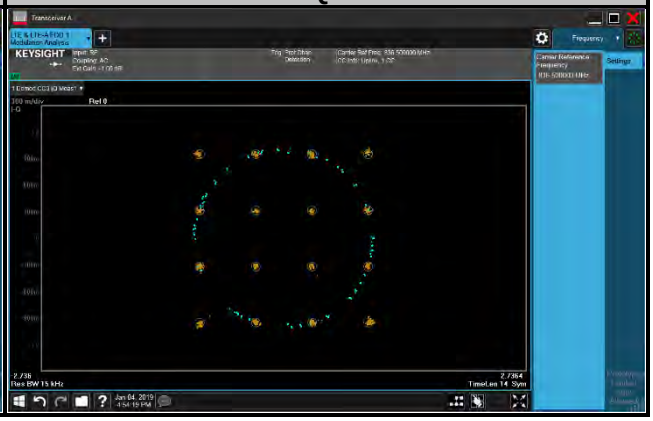

### 4.2.3 Test Procedure

Connect the EUT to Communication Simulator via the antenna connector. The frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

4.2.4 Test Results

| Spectrum Plot of Measurement | |
|---|---|
| GSM | EDGE |
| Channel 189 | Channel 189 |
|  |  |

| Spectrum Plot of Measurement | |
|---|---|
| LTE Band 5 | |
| Channel 20525 | |
| QPSK | 16QAM |
|  |  |

| Spectrum Plot of Measurement | |
|---|---|
| LTE Band 26 | |
| Channel 26915 | |
| QPSK | 16QAM |
|  |  |

## 4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

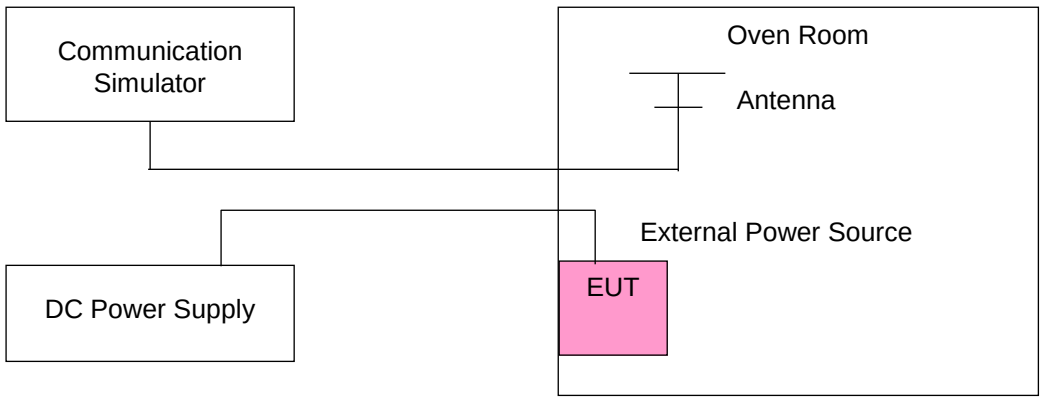
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

4.3.2 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.

4.3.3 Test Setup



4.3.4 Test Results

| Voltage (Volts) | GSM | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| 12 | 824.200004 | 0.004 | 848.800002 | 0.002 | 2.5 |
| 10.2 | 824.200002 | 0.002 | 848.800004 | 0.004 | 2.5 |
| 13.8 | 824.200002 | 0.002 | 848.800002 | 0.003 | 2.5 |

**Note:** The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | GSM | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| -30 | 824.200003 | 0.004 | 848.800003 | 0.004 | 2.5 |
| -20 | 824.200002 | 0.003 | 848.800002 | 0.002 | 2.5 |
| -10 | 824.200004 | 0.004 | 848.800004 | 0.004 | 2.5 |
| 0 | 824.200001 | 0.002 | 848.800003 | 0.004 | 2.5 |
| 10 | 824.200001 | 0.001 | 848.800004 | 0.005 | 2.5 |
| 20 | 824.200001 | 0.001 | 848.800001 | 0.001 | 2.5 |
| 30 | 824.199997 | -0.004 | 848.799997 | -0.004 | 2.5 |
| 40 | 824.199997 | -0.004 | 848.799997 | -0.004 | 2.5 |
| 50 | 824.199998 | -0.003 | 848.799999 | -0.001 | 2.5 |
| 60 | 824.199998 | -0.002 | 848.799997 | -0.003 | 2.5 |
| 65 | 824.199998 | -0.003 | 848.799997 | -0.003 | 2.5 |

Frequency Error vs. Voltage

| Voltage (Volts) | EDGE | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| 12 | 824.200003 | 0.004 | 848.800003 | 0.004 | 2.5 |
| 10.2 | 824.200003 | 0.004 | 848.800002 | 0.002 | 2.5 |
| 13.8 | 824.200001 | 0.001 | 848.800002 | 0.002 | 2.5 |

**Note:** The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | EDGE | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| -30 | 824.200003 | 0.004 | 848.800004 | 0.005 | 2.5 |
| -20 | 824.200002 | 0.003 | 848.800004 | 0.004 | 2.5 |
| -10 | 824.200003 | 0.004 | 848.800003 | 0.004 | 2.5 |
| 0 | 824.200003 | 0.003 | 848.800003 | 0.004 | 2.5 |
| 10 | 824.200002 | 0.002 | 848.800002 | 0.002 | 2.5 |
| 20 | 824.200002 | 0.003 | 848.800002 | 0.003 | 2.5 |
| 30 | 824.199998 | -0.002 | 848.799998 | -0.002 | 2.5 |
| 40 | 824.199998 | -0.002 | 848.799998 | -0.002 | 2.5 |
| 50 | 824.199999 | -0.001 | 848.799998 | -0.003 | 2.5 |
| 60 | 824.199997 | -0.003 | 848.799999 | -0.001 | 2.5 |
| 65 | 824.199999 | -0.002 | 848.799998 | -0.003 | 2.5 |

Frequency Error vs. Voltage

| Voltage (Volts) | LTE Band 5 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 1.4 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| 12 | 824.700001 | 0.001 | 848.300002 | 0.002 | 2.5 |
| 10.2 | 824.700004 | 0.004 | 848.300001 | 0.002 | 2.5 |
| 13.8 | 824.700002 | 0.003 | 848.300002 | 0.002 | 2.5 |

**Note:** The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 5 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 1.4 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| -30 | 824.700002 | 0.003 | 848.300003 | 0.004 | 2.5 |
| -20 | 824.700002 | 0.003 | 848.300003 | 0.004 | 2.5 |
| -10 | 824.700003 | 0.003 | 848.300002 | 0.002 | 2.5 |
| 0 | 824.700003 | 0.003 | 848.300004 | 0.004 | 2.5 |
| 10 | 824.700003 | 0.004 | 848.300004 | 0.004 | 2.5 |
| 20 | 824.700002 | 0.002 | 848.300001 | 0.001 | 2.5 |
| 30 | 824.699997 | -0.004 | 848.299999 | -0.002 | 2.5 |
| 40 | 824.699997 | -0.003 | 848.299997 | -0.004 | 2.5 |
| 50 | 824.699996 | -0.005 | 848.299997 | -0.004 | 2.5 |
| 60 | 824.699996 | -0.004 | 848.299996 | -0.005 | 2.5 |
| 65 | 824.699997 | -0.003 | 848.299997 | -0.003 | 2.5 |

Frequency Error vs. Voltage

| Voltage (Volts) | LTE Band 5 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 3 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| 12 | 824.700002 | 0.003 | 848.300001 | 0.001 | 2.5 |
| 10.2 | 824.700003 | 0.003 | 848.300004 | 0.004 | 2.5 |
| 13.8 | 824.700002 | 0.003 | 848.300004 | 0.004 | 2.5 |

**Note:** The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 5 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 3 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| -30 | 824.700004 | 0.004 | 848.300002 | 0.003 | 2.5 |
| -20 | 824.700004 | 0.005 | 848.300003 | 0.003 | 2.5 |
| -10 | 824.700001 | 0.002 | 848.300004 | 0.004 | 2.5 |
| 0 | 824.700004 | 0.005 | 848.300003 | 0.003 | 2.5 |
| 10 | 824.700001 | 0.002 | 848.300002 | 0.002 | 2.5 |
| 20 | 824.700001 | 0.001 | 848.300004 | 0.004 | 2.5 |
| 30 | 824.699996 | -0.005 | 848.299996 | -0.004 | 2.5 |
| 40 | 824.699999 | -0.001 | 848.299997 | -0.004 | 2.5 |
| 50 | 824.699997 | -0.004 | 848.299998 | -0.003 | 2.5 |
| 50 | 824.699998 | -0.003 | 848.299997 | -0.004 | 2.5 |
| 65 | 824.699996 | -0.005 | 848.299997 | -0.004 | 2.5 |

Frequency Error vs. Voltage

| Voltage (Volts) | LTE Band 5 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 5 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| 12 | 824.700001 | 0.001 | 848.300002 | 0.002 | 2.5 |
| 10.2 | 824.700004 | 0.005 | 848.300002 | 0.003 | 2.5 |
| 13.8 | 824.700003 | 0.003 | 848.300003 | 0.003 | 2.5 |

**Note:** The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 5 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 5 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| -30 | 824.700002 | 0.003 | 848.300002 | 0.002 | 2.5 |
| -20 | 824.700001 | 0.002 | 848.300000 | 0.004 | 2.5 |
| -10 | 824.700002 | 0.002 | 848.300000 | 0.002 | 2.5 |
| 0 | 824.700004 | 0.004 | 848.300000 | 0.001 | 2.5 |
| 10 | 824.700002 | 0.003 | 848.300000 | 0.001 | 2.5 |
| 20 | 824.700004 | 0.005 | 848.300000 | 0.002 | 2.5 |
| 30 | 824.699999 | -0.001 | 848.300000 | -0.001 | 2.5 |
| 40 | 824.699999 | -0.002 | 848.300000 | -0.005 | 2.5 |
| 50 | 824.699999 | -0.002 | 848.300000 | -0.002 | 2.5 |
| 50 | 824.699997 | -0.004 | 848.300000 | -0.003 | 2.5 |
| 65 | 824.699996 | -0.005 | 848.300000 | -0.004 | 2.5 |

Frequency Error vs. Voltage

| Voltage (Volts) | LTE Band 5 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 10 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| 12 | 824.700004 | 0.005 | 848.300002 | 0.002 | 2.5 |
| 10.2 | 824.700004 | 0.005 | 848.300002 | 0.002 | 2.5 |
| 13.8 | 824.700003 | 0.003 | 848.300001 | 0.001 | 2.5 |

**Note:** The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 5 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 10 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| -30 | 824.700003 | 0.004 | 848.300003 | 0.004 | 2.5 |
| -20 | 824.700003 | 0.004 | 848.300000 | 0.001 | 2.5 |
| -10 | 824.700003 | 0.004 | 848.300000 | 0.001 | 2.5 |
| 0 | 824.700002 | 0.002 | 848.300000 | 0.002 | 2.5 |
| 10 | 824.700002 | 0.002 | 848.300000 | 0.005 | 2.5 |
| 20 | 824.700002 | 0.002 | 848.300000 | 0.002 | 2.5 |
| 30 | 824.699996 | -0.005 | 848.300000 | -0.002 | 2.5 |
| 40 | 824.699999 | -0.002 | 848.300000 | -0.003 | 2.5 |
| 50 | 824.699997 | -0.004 | 848.300000 | -0.004 | 2.5 |
| 50 | 824.699997 | -0.004 | 848.300000 | -0.004 | 2.5 |
| 65 | 824.699997 | -0.004 | 848.300000 | -0.002 | 2.5 |

Frequency Error vs. Voltage

| Voltage (Volts) | LTE Band 26 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 1.4 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| 12 | 824.700004 | 0.004 | 848.300000 | 0.004 | 2.5 |
| 10.2 | 824.700001 | 0.001 | 848.300000 | 0.002 | 2.5 |
| 13.8 | 824.700002 | 0.003 | 848.300000 | 0.004 | 2.5 |

**Note:** The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 26 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 1.4 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| -30 | 824.700002 | 0.002 | 848.300000 | 0.001 | 2.5 |
| -20 | 824.700002 | 0.002 | 848.300000 | 0.002 | 2.5 |
| -10 | 824.700003 | 0.003 | 848.300000 | 0.001 | 2.5 |
| 0 | 824.700002 | 0.003 | 848.300000 | 0.003 | 2.5 |
| 10 | 824.700001 | 0.002 | 848.300000 | 0.003 | 2.5 |
| 20 | 824.700004 | 0.004 | 848.300000 | 0.002 | 2.5 |
| 30 | 824.699998 | -0.003 | 848.300000 | -0.003 | 2.5 |
| 40 | 824.699997 | -0.004 | 848.300000 | -0.002 | 2.5 |
| 50 | 824.699996 | -0.005 | 848.300000 | -0.001 | 2.5 |
| 60 | 824.699998 | -0.002 | 848.300000 | -0.002 | 2.5 |
| 65 | 824.699998 | -0.003 | 848.300000 | -0.004 | 2.5 |

Frequency Error vs. Voltage

| Voltage (Volts) | LTE Band 26 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 3 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| 12 | 824.700002 | 0.002 | 848.300000 | 0.003 | 2.5 |
| 10.2 | 824.700002 | 0.002 | 848.300000 | 0.004 | 2.5 |
| 13.8 | 824.700003 | 0.003 | 848.300000 | 0.004 | 2.5 |

**Note:** The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 26 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 3 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| -30 | 824.700002 | 0.002 | 848.300000 | 0.003 | 2.5 |
| -20 | 824.700002 | 0.002 | 848.300000 | 0.003 | 2.5 |
| -10 | 824.700002 | 0.002 | 848.300000 | 0.002 | 2.5 |
| 0 | 824.700004 | 0.004 | 848.300000 | 0.003 | 2.5 |
| 10 | 824.700004 | 0.005 | 848.300000 | 0.004 | 2.5 |
| 20 | 824.700003 | 0.004 | 848.300000 | 0.003 | 2.5 |
| 30 | 824.699999 | -0.001 | 848.300000 | -0.003 | 2.5 |
| 40 | 824.699999 | -0.002 | 848.300000 | -0.003 | 2.5 |
| 50 | 824.699998 | -0.003 | 848.300000 | -0.005 | 2.5 |
| 50 | 824.699998 | -0.003 | 848.300000 | -0.004 | 2.5 |
| 65 | 824.699999 | -0.002 | 848.300000 | -0.001 | 2.5 |

Frequency Error vs. Voltage

| Voltage (Volts) | LTE Band 26 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 5 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| 12 | 824.700003 | 0.003 | 848.300000 | 0.002 | 2.5 |
| 10.2 | 824.700004 | 0.004 | 848.300000 | 0.002 | 2.5 |
| 13.8 | 824.700002 | 0.002 | 848.300000 | 0.001 | 2.5 |

**Note:** The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 26 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 5 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| -30 | 824.700001 | 0.001 | 848.300000 | 0.004 | 2.5 |
| -20 | 824.700001 | 0.002 | 848.300000 | 0.004 | 2.5 |
| -10 | 824.700002 | 0.002 | 848.300000 | 0.002 | 2.5 |
| 0 | 824.700004 | 0.004 | 848.300000 | 0.001 | 2.5 |
| 10 | 824.700002 | 0.003 | 848.300000 | 0.001 | 2.5 |
| 20 | 824.700004 | 0.005 | 848.300000 | 0.002 | 2.5 |
| 30 | 824.699999 | -0.001 | 848.300000 | -0.001 | 2.5 |
| 40 | 824.699999 | -0.002 | 848.300000 | -0.005 | 2.5 |
| 50 | 824.699999 | -0.002 | 848.300000 | -0.002 | 2.5 |
| 50 | 824.699997 | -0.004 | 848.300000 | -0.003 | 2.5 |
| 65 | 824.699996 | -0.005 | 848.300000 | -0.004 | 2.5 |

Frequency Error vs. Voltage

| Voltage (Volts) | LTE Band 26 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 10 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| 12 | 824.700003 | 0.004 | 848.300000 | 0.001 | 2.5 |
| 10.2 | 824.700003 | 0.003 | 848.300000 | 0.003 | 2.5 |
| 13.8 | 824.700003 | 0.004 | 848.300000 | 0.005 | 2.5 |

**Note:** The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 26 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 10 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| -30 | 824.700003 | 0.004 | 848.300000 | 0.001 | 2.5 |
| -20 | 824.700003 | 0.004 | 848.300000 | 0.001 | 2.5 |
| -10 | 824.700003 | 0.004 | 848.300000 | 0.001 | 2.5 |
| 0 | 824.700002 | 0.002 | 848.300000 | 0.002 | 2.5 |
| 10 | 824.700002 | 0.002 | 848.300000 | 0.005 | 2.5 |
| 20 | 824.700002 | 0.002 | 848.300000 | 0.002 | 2.5 |
| 30 | 824.699996 | -0.005 | 848.300000 | -0.002 | 2.5 |
| 40 | 824.699999 | -0.002 | 848.300000 | -0.003 | 2.5 |
| 50 | 824.699997 | -0.004 | 848.300000 | -0.004 | 2.5 |
| 50 | 824.699997 | -0.004 | 848.300000 | -0.004 | 2.5 |
| 65 | 824.699997 | -0.004 | 848.300000 | -0.002 | 2.5 |

Frequency Error vs. Voltage

| Voltage (Volts) | LTE Band 26 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 15 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| 12 | 824.700002 | 0.002 | 848.300000 | 0.002 | 2.5 |
| 10.2 | 824.700002 | 0.003 | 848.300000 | 0.004 | 2.5 |
| 13.8 | 824.700003 | 0.003 | 848.300000 | 0.004 | 2.5 |

**Note:** The fixture defined the normal working voltage of the DC Power Supply is from 10.2 Vdc to 13.8 Vdc.

Frequency Error vs. Temperature

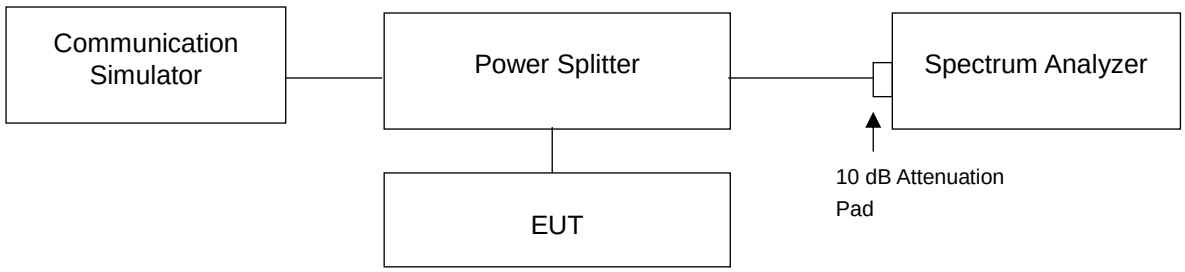
| Temp. (℃) | LTE Band 26 | | | | Limit (ppm) |
|---|---|---|---|---|---|
| | Channel Bandwidth: 15 MHz | | | | |
| | Low Channel | | High Channel | | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) | |
| -30 | 824.700003 | 0.004 | 848.300000 | 0.002 | 2.5 |
| -30 | 824.700003 | 0.004 | 848.300000 | 0.003 | 2.5 |
| -20 | 824.700002 | 0.002 | 848.300000 | 0.004 | 2.5 |
| -10 | 824.700003 | 0.003 | 848.300000 | 0.004 | 2.5 |
| 0 | 824.700003 | 0.004 | 848.300000 | 0.001 | 2.5 |
| 10 | 824.700003 | 0.004 | 848.300000 | 0.002 | 2.5 |
| 20 | 824.699998 | -0.003 | 848.300000 | -0.003 | 2.5 |
| 30 | 824.699997 | -0.004 | 848.300000 | -0.001 | 2.5 |
| 40 | 824.699997 | -0.004 | 848.300000 | -0.003 | 2.5 |
| 50 | 824.699998 | -0.003 | 848.300000 | -0.003 | 2.5 |
| 60 | 824.699997 | -0.004 | 848.300000 | -0.002 | 2.5 |

## 4.4 Occupied Bandwidth Measurement

### 4.4.1 Test Procedure

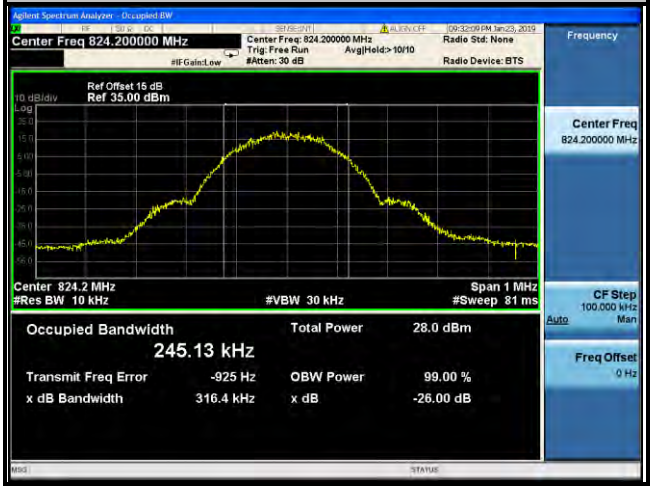
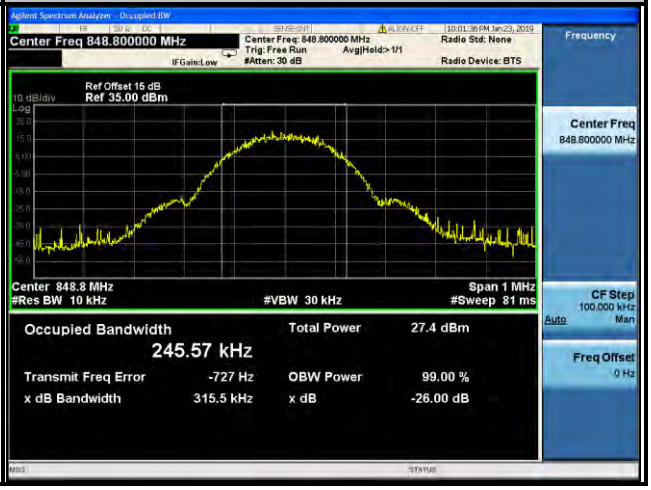
The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

### 4.4.2 Test Setup



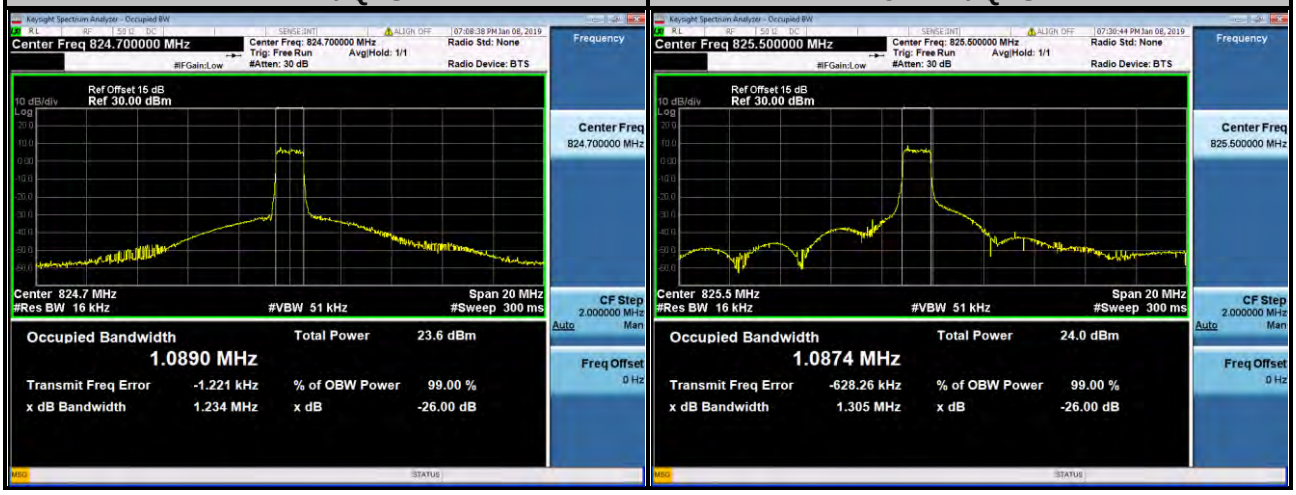
4.4.3 Test Result

| Channel | Frequency (MHz) | 99 % Occupied Bandwidth (kHz) | |
|---|---|---|---|
| | | GSM | EDGE |
| 128 | 824.2 | 245.13 | 243.78 |
| 189 | 836.4 | 243.87 | 245.18 |
| 251 | 848.8 | 243.63 | 245.57 |

| Spectrum Plot of Worst Value | |
|---|---|
| GSM | EDGE |
|  |  |

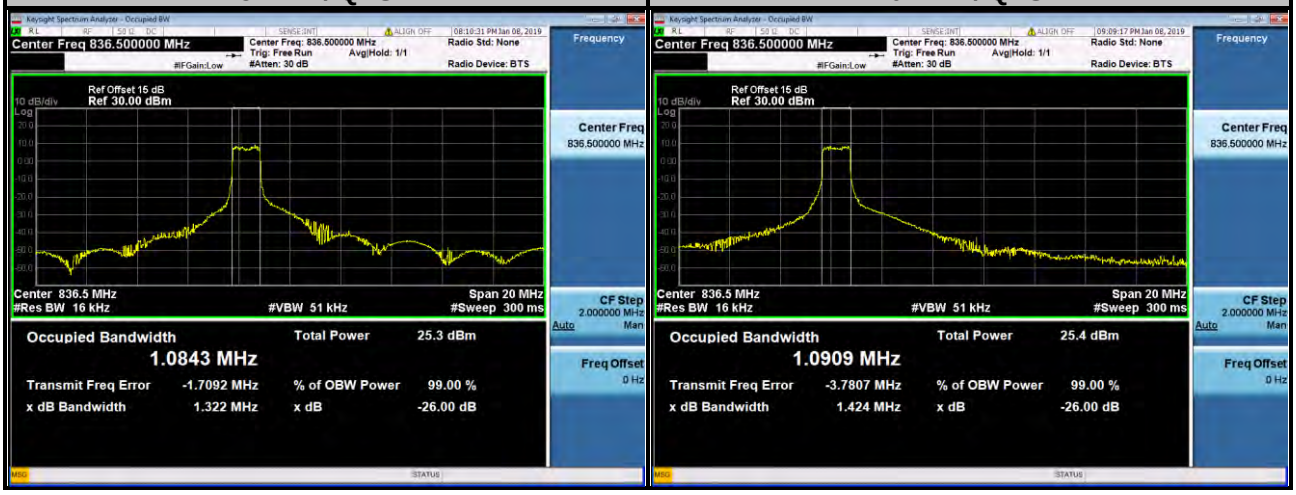
| LTE Band 5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 1.4 MHz | | | | Channel Bandwidth: 3 MHz | | | |
| Channel | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) | | Channel | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 20407 | 824.7 | 1.0890 | 0.9083 | 20415 | 825.5 | 1.0874 | 0.9101 |
| 20525 | 836.5 | 1.0867 | 0.9098 | 20525 | 836.5 | 1.0858 | 0.9132 |
| 20643 | 848.3 | 1.0850 | 0.9093 | 20635 | 847.5 | 1.0874 | 0.9125 |

| Spectrum Plot of Worst Value | |
|---|---|
| 1.4 MHz / QPSK | 3 MHz / QPSK |

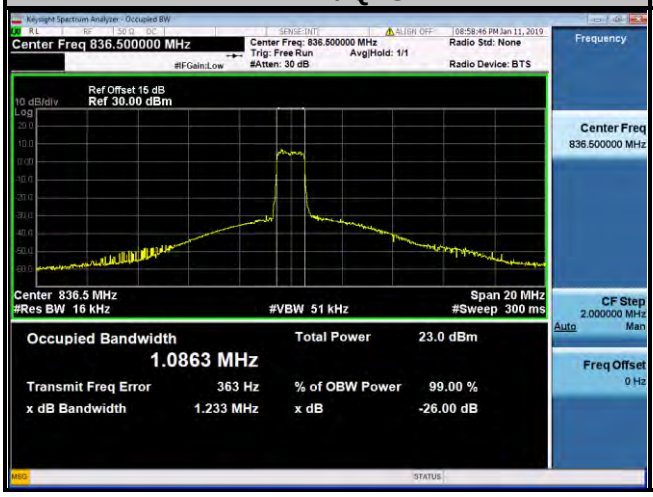
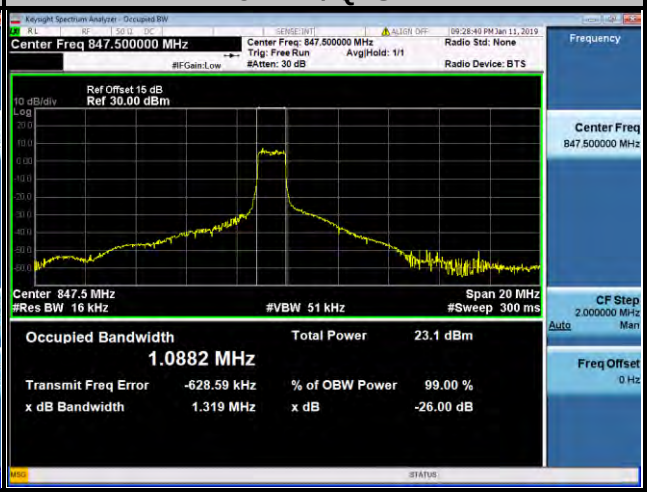


| LTE Band 5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 5 MHz | | | | Channel Bandwidth: 10 MHz | | | |
| Channel | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) | | Channel | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 20425 | 826.5 | 1.0841 | 0.9183 | 20450 | 829.0 | 1.0901 | 0.9164 |
| 20525 | 836.5 | 1.0843 | 0.9150 | 20525 | 836.5 | 1.0909 | 0.9157 |
| 20625 | 846.5 | 1.0843 | 0.9215 | 20600 | 844.0 | 1.0904 | 0.9159 |

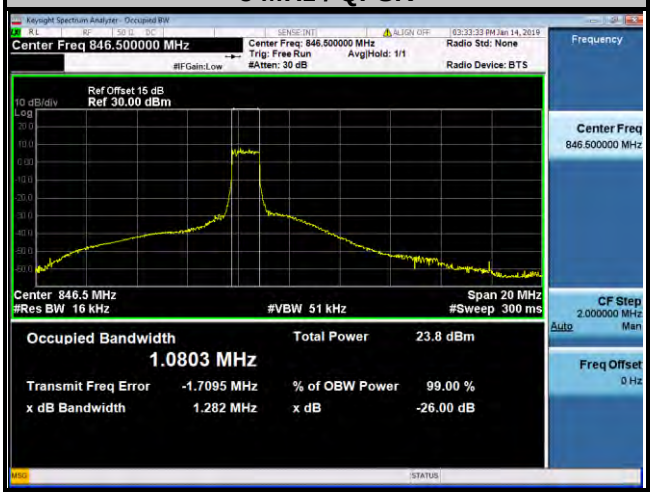
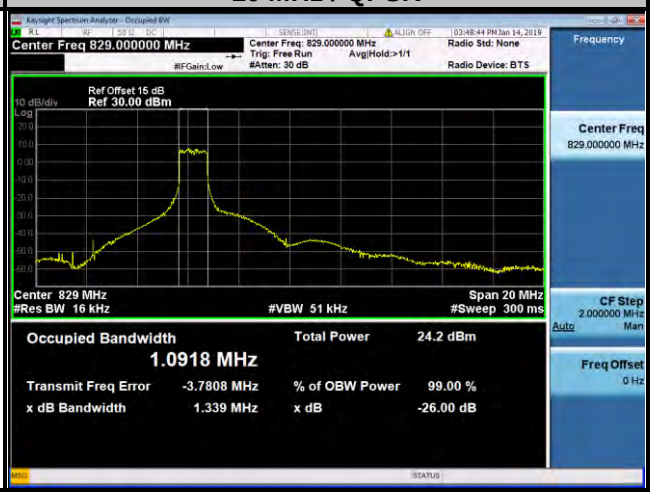
| Spectrum Plot of Worst Value | |
|---|---|
| 5 MHz / QPSK | 10 MHz / QPSK |



| LTE Band 26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 1.4 MHz | | | | Channel Bandwidth: 3 MHz | | | |
| Channel | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) | | Channel | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 26797 | 824.7 | 1.0881 | 0.9088 | 26805 | 825.5 | 1.0877 | 0.9121 |
| 26915 | 836.5 | 1.0863 | 0.9088 | 26915 | 836.5 | 1.0858 | 0.9103 |
| 27033 | 848.3 | 1.0859 | 0.9084 | 27025 | 847.5 | 1.0882 | 0.9118 |

| Spectrum Plot of Worst Value | |
|---|---|
| 1.4 MHz / QPSK | 3 MHz / QPSK |
|  |  |

| LTE Band 26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 5 MHz | | | | Channel Bandwidth: 10 MHz | | | |
| Channel | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) | | Channel | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 26815 | 826.5 | 1.0794 | 0.9232 | 26840 | 829.0 | 1.0918 | 0.9154 |
| 26915 | 836.5 | 1.0794 | 0.9234 | 26915 | 836.5 | 1.0918 | 0.9166 |
| 27015 | 846.5 | 1.0803 | 0.9239 | 26990 | 844.0 | 1.0915 | 0.9165 |

| Spectrum Plot of Worst Value | |
|---|---|
| 5 MHz / QPSK | 10 MHz / QPSK |
|  |  |

| LTE Band 26 | | | |
|---|---|---|---|
| Channel Bandwidth: 15 MHz | | | |
| Channel | Frequency (MHz) | 99 % Occupied Bandwidth (MHz) | |
| | | QPSK | 16QAM |
| 26865 | 831.5 | 1.1019 | 0.9267 |
| 26915 | 836.5 | 1.1016 | 0.9236 |
| 26965 | 841.5 | 1.1020 | 0.9263 |

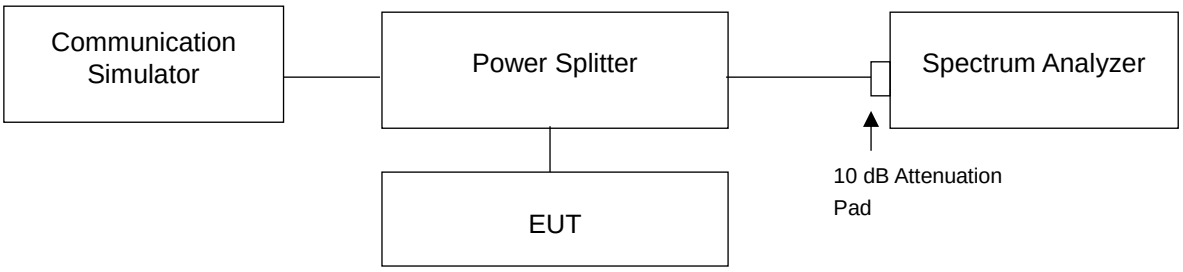
| Spectrum Plot of Worst Value |
|---|
| 15 MHz / QPSK |

## 4.5 Band Edge Measurement

### 4.5.1 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.

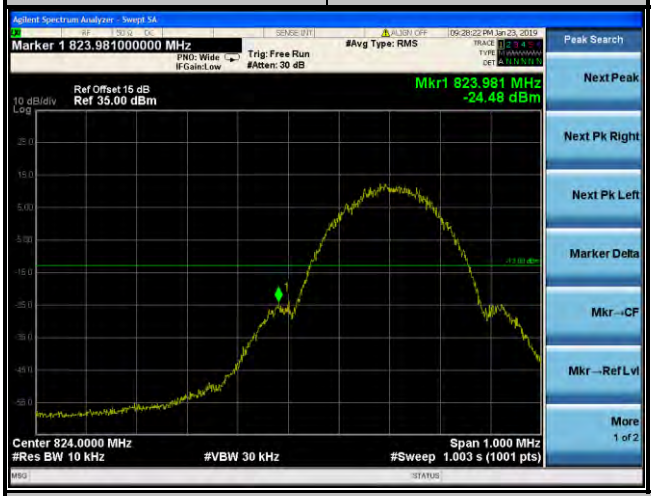
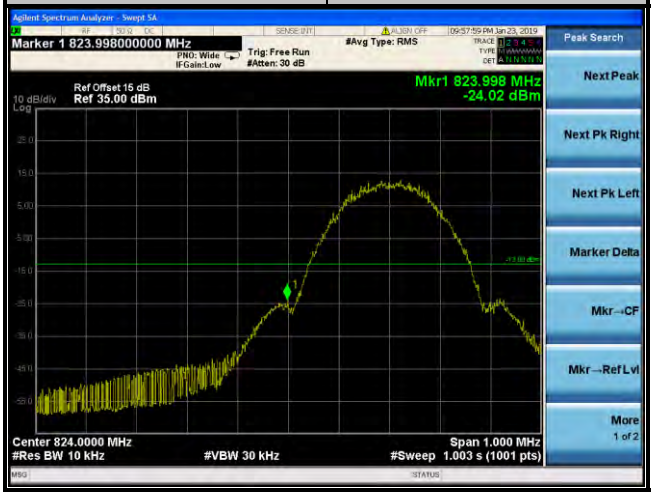
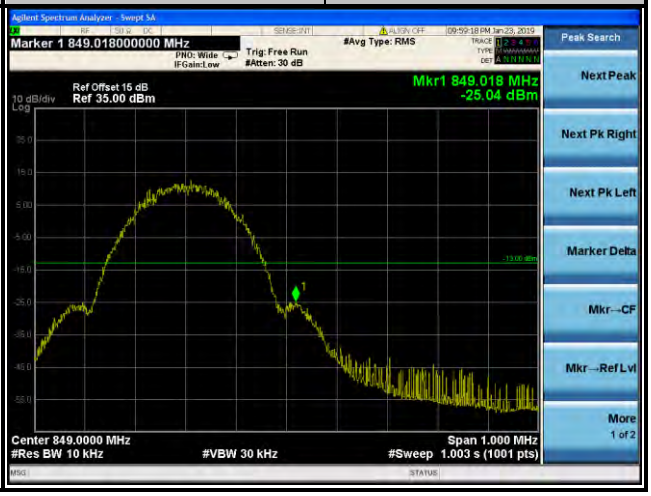
### 4.5.2 Test Setup

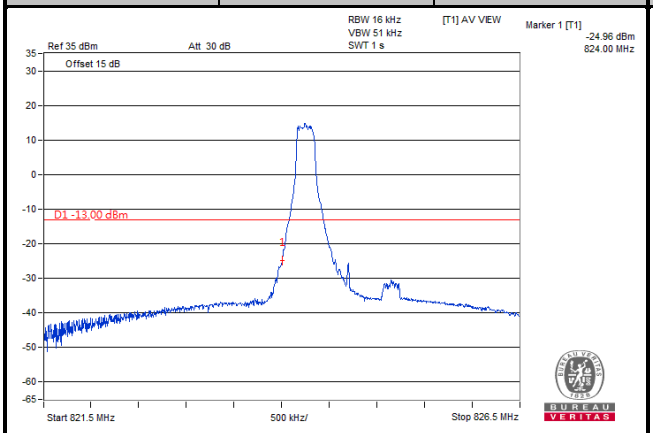
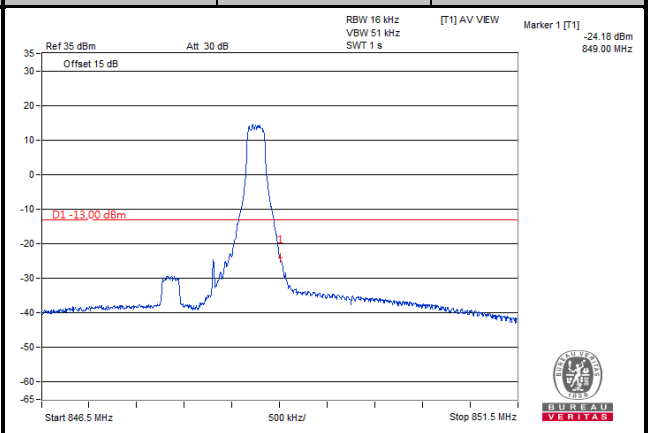
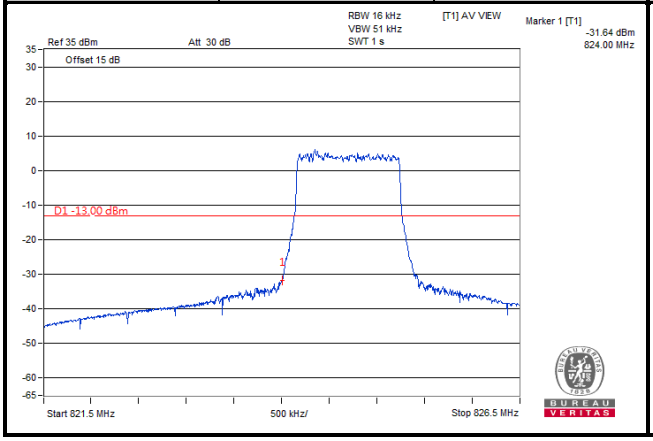
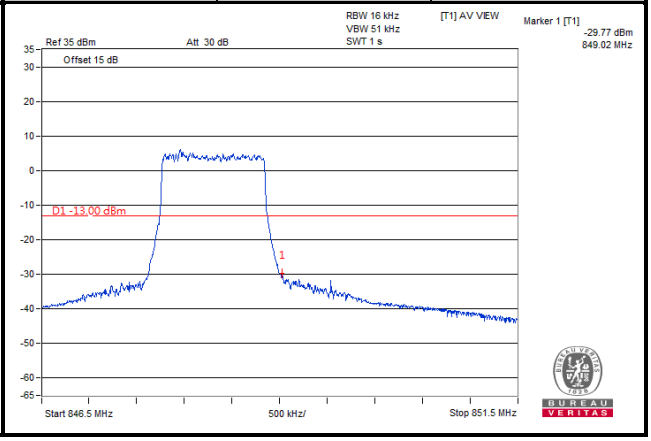


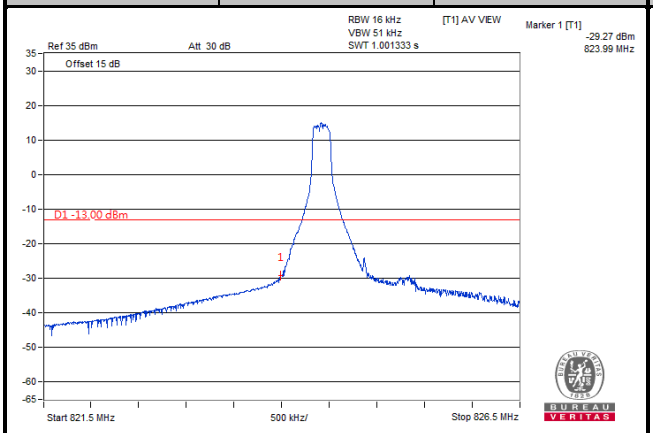
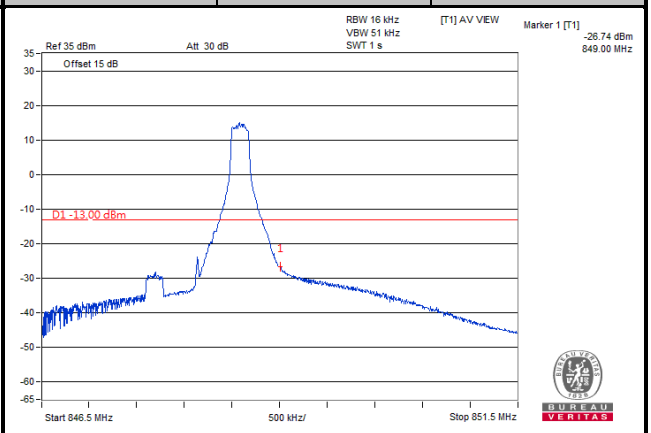
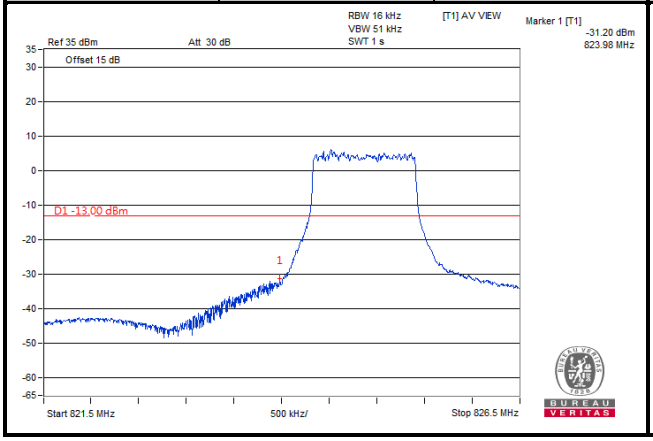
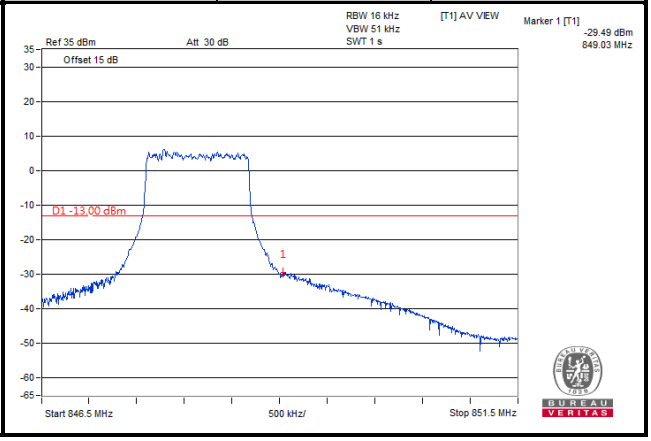

### 4.5.3 Test Procedures

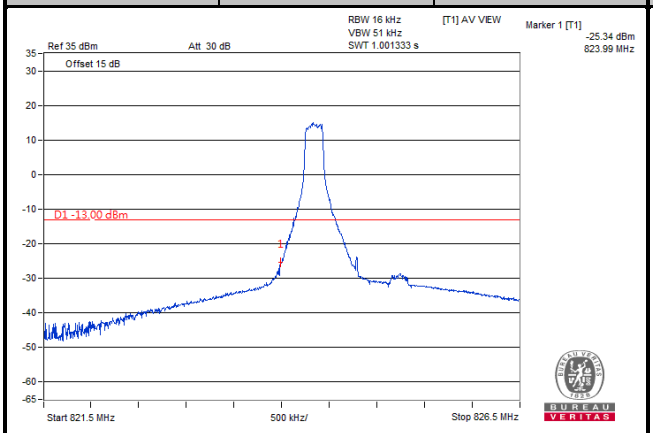
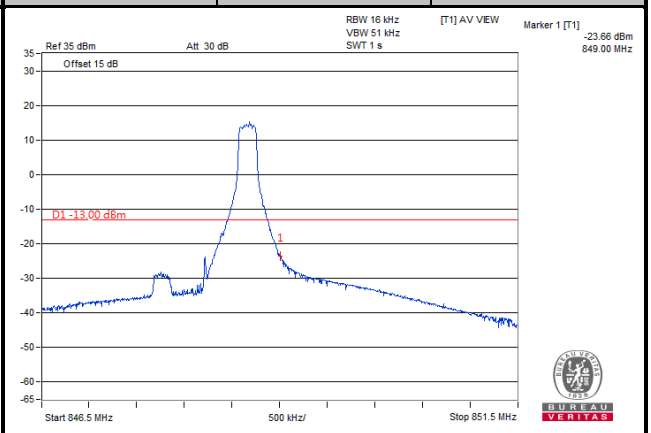
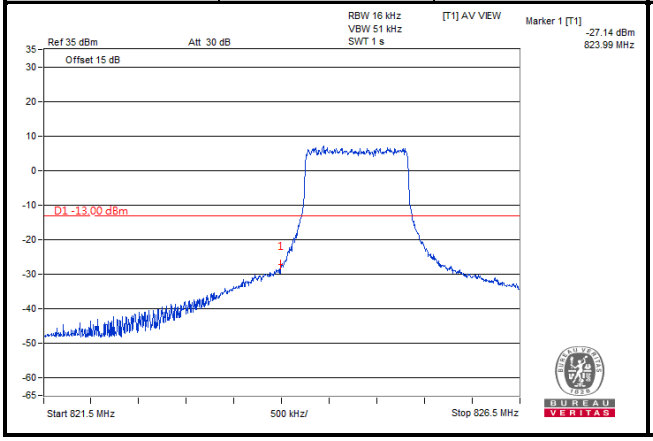
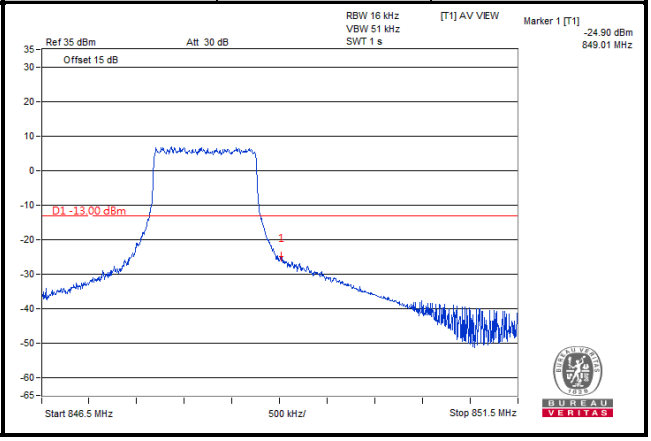
a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 10 kHz and VB of the spectrum is 30 kHz (GSM/GPRS/EDGE).
c. The center frequency of spectrum is the band edge frequency and span is 5 MHz. RB of the spectrum is 6 kHz and VB of the spectrum is 51 kHz (LTE).
d. Record the max trace plot into the test report.

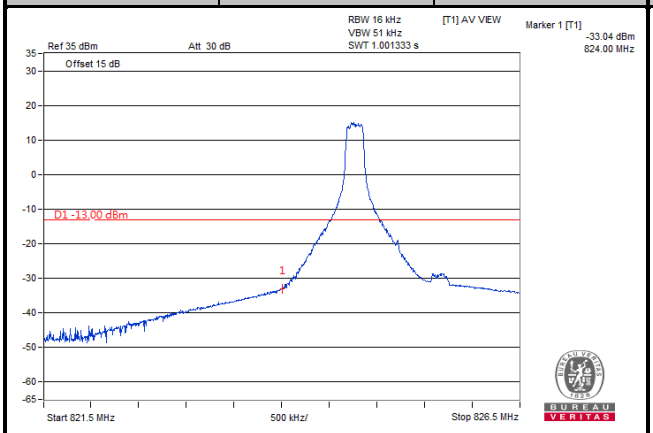
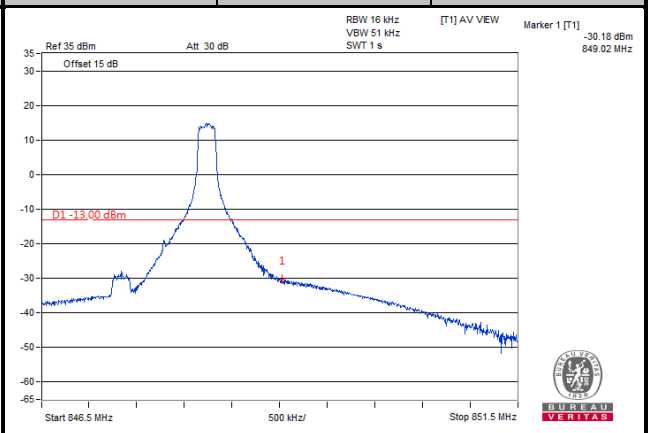
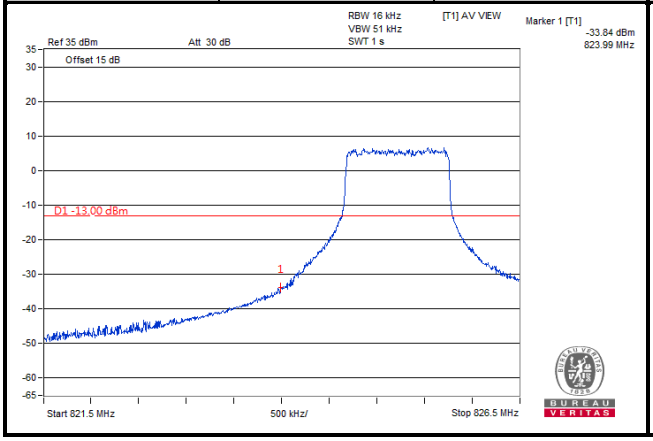
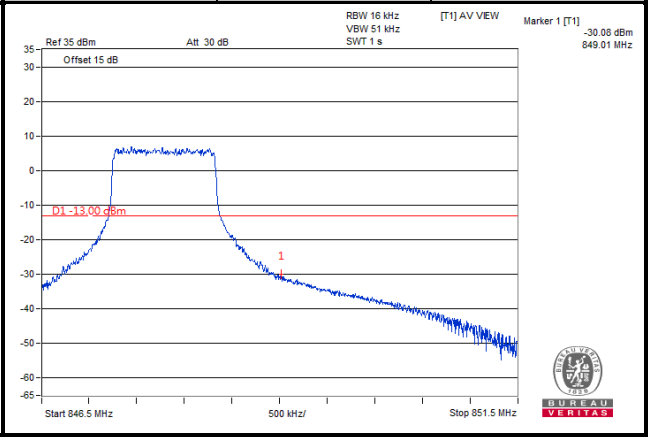
4.5.4 Test Results

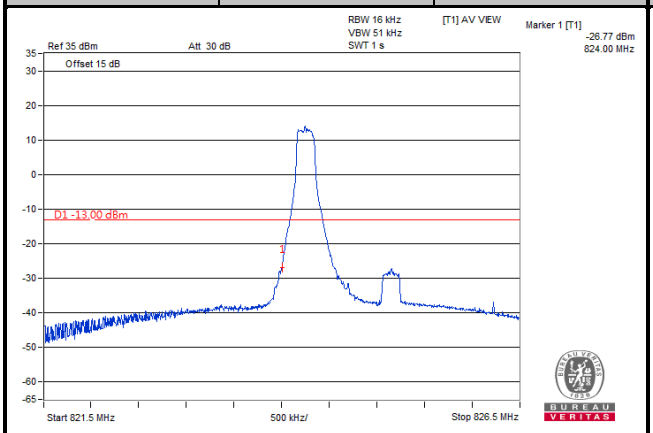
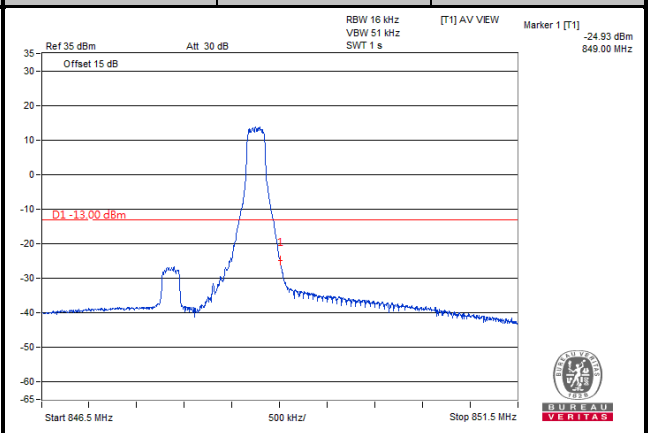
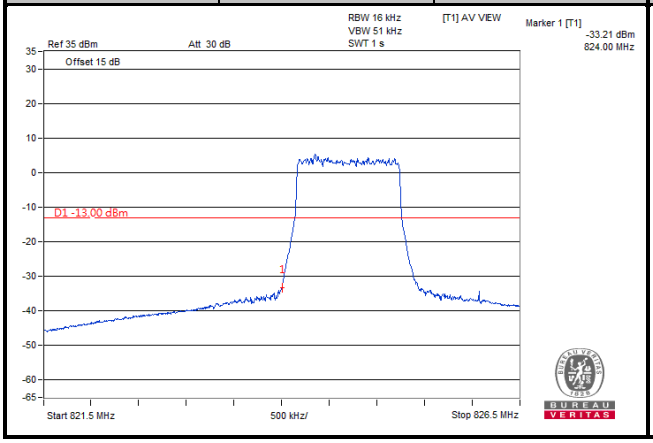
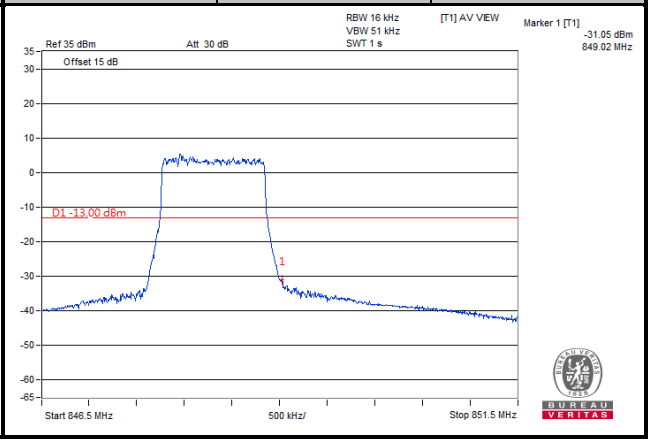
| GSM | | | |
|---|---|---|---|
| Channel | 128 | Channel | 251 |
|  | |  | |
| **EDGE** | | | |
| Channel | 128 | Channel | 251 |
|  | |  | |

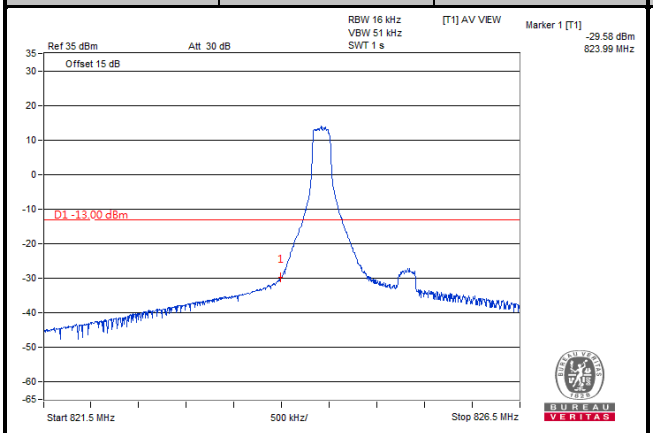
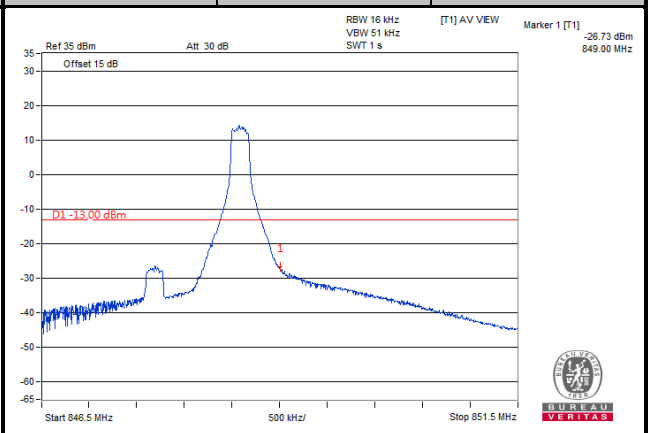
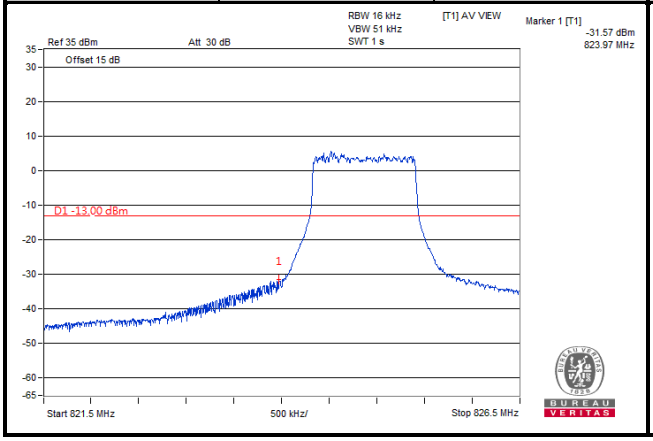
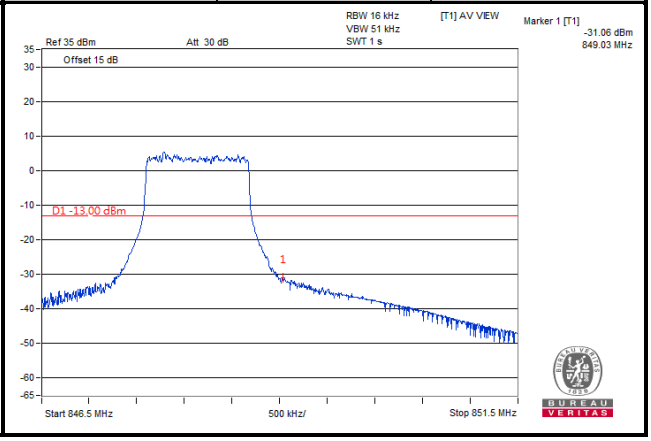
| LTE Band 5 | | | | | |
|---|---|---|---|---|---|
| Channel Bandwidth: 1.4 MHz | | | | | |
| Channel | 20407 | 1 RB | Channel | 20643 | 1 RB |
|  | | |  | | |
| Channel | 20407 | 6 RB | Channel | 20643 | 6 RB |
|  | | |  | | |

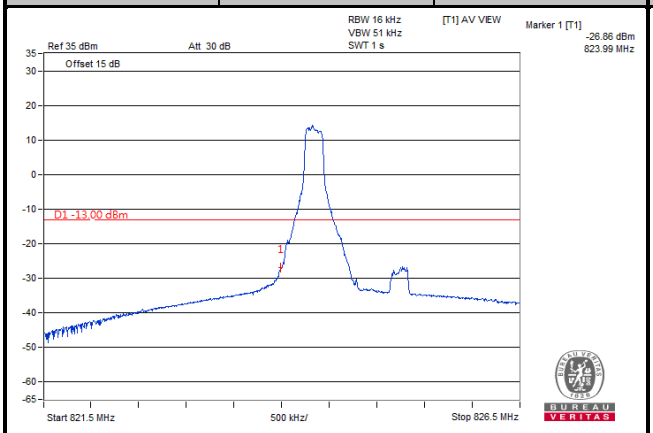
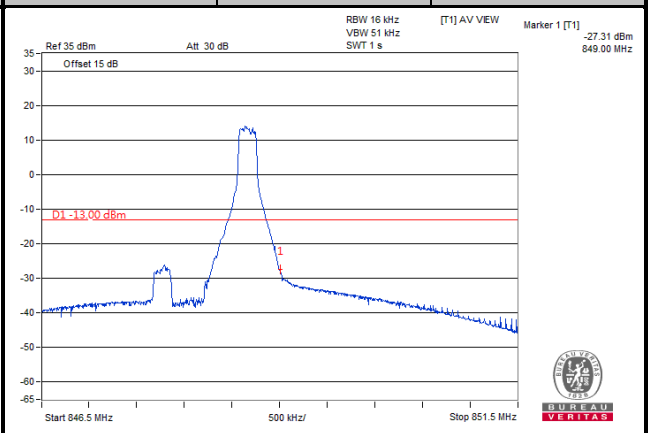
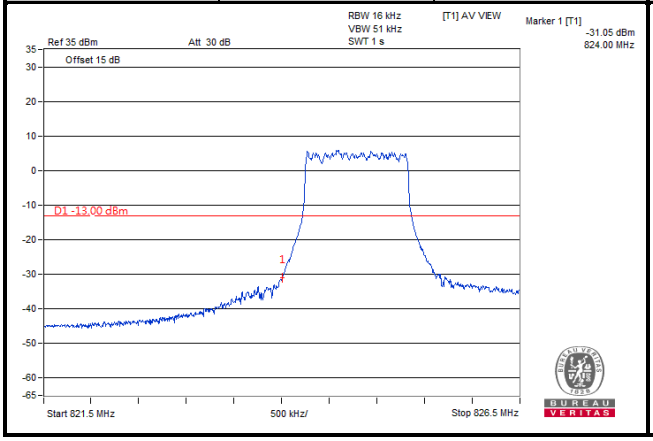
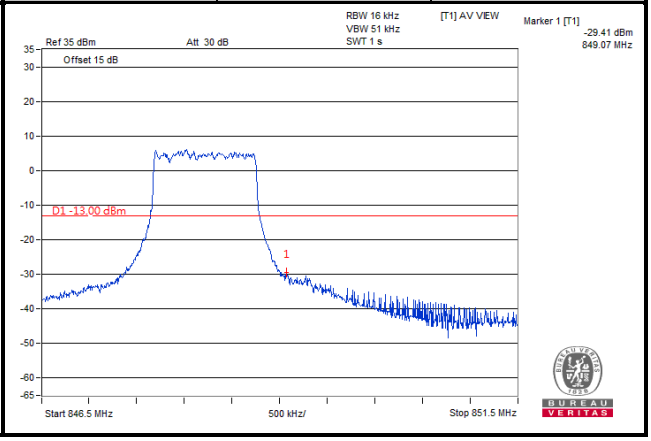
| LTE Band 5 | | | | | |
|---|---|---|---|---|---|
| Channel Bandwidth: 3 MHz | | | | | |
| Channel | 20415 | 1 RB | Channel | 20635 | 1 RB |
|  | | |  | | |
| Channel | 20415 | 6 RB | Channel | 20635 | 6 RB |
|  | | |  | | |

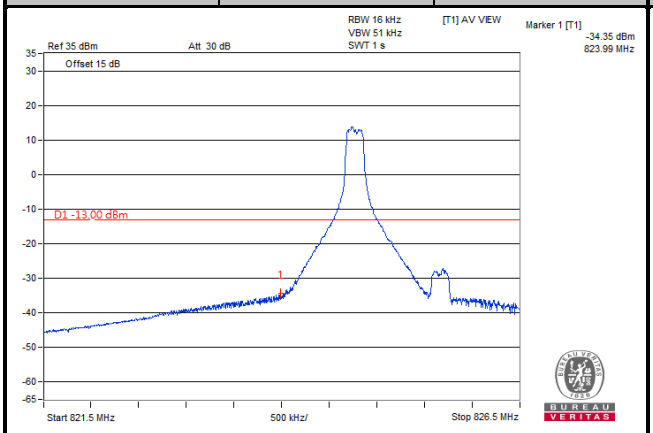
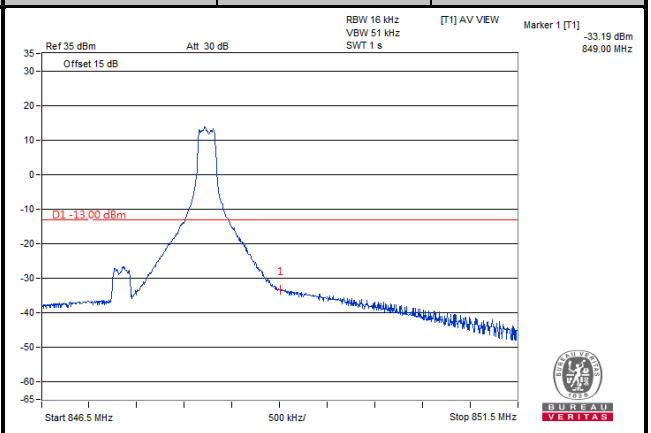
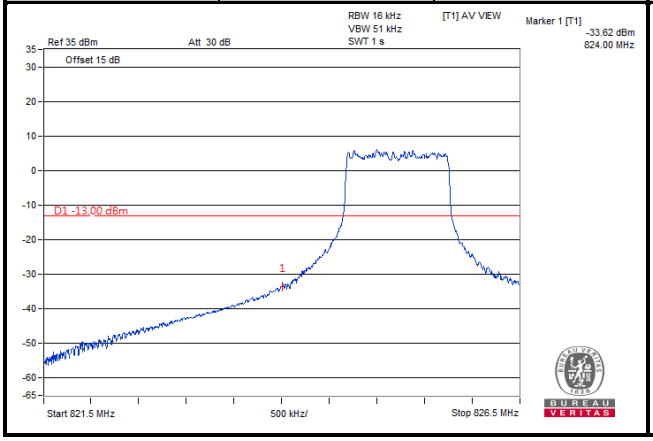
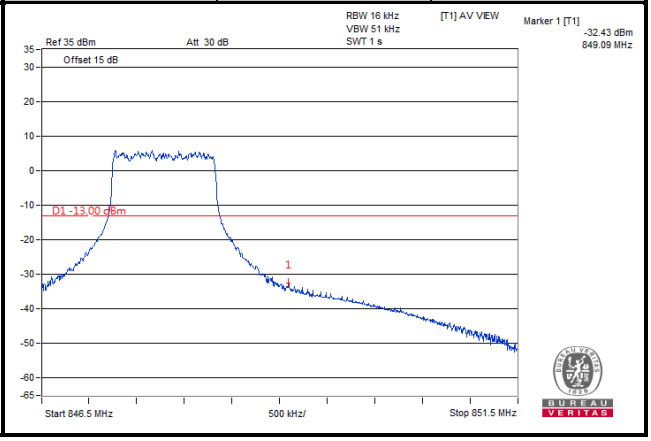
| LTE Band 5 | | | | | |
|---|---|---|---|---|---|
| Channel Bandwidth: 5 MHz | | | | | |
| Channel | 20425 | 1 RB | Channel | 20625 | 1 RB |
|  | | |  | | |
| Channel | 20425 | 6 RB | Channel | 20625 | 6 RB |
|  | | |  | | |

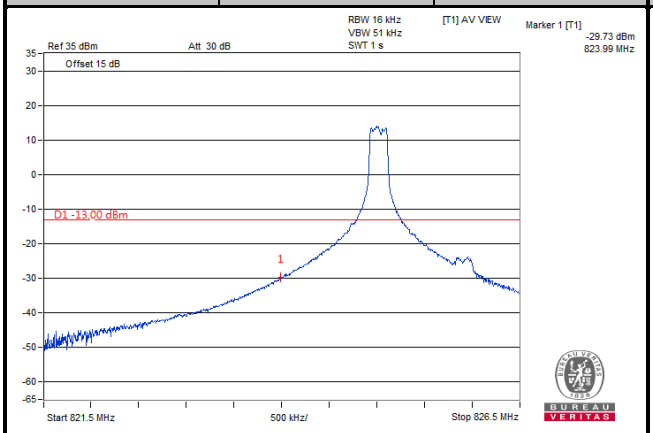
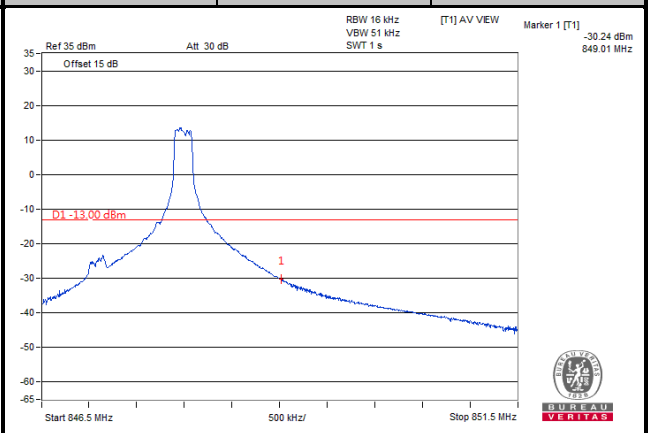
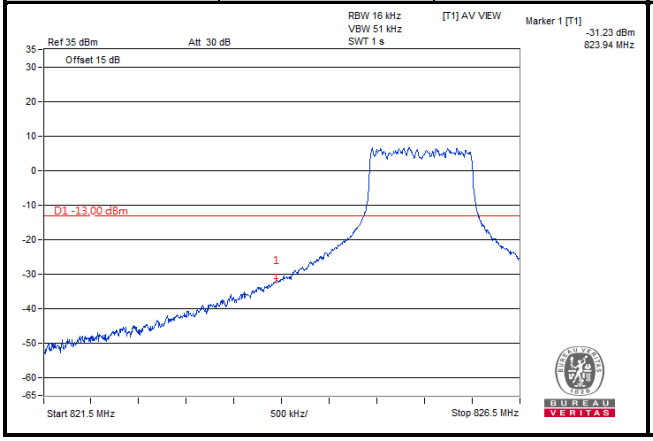
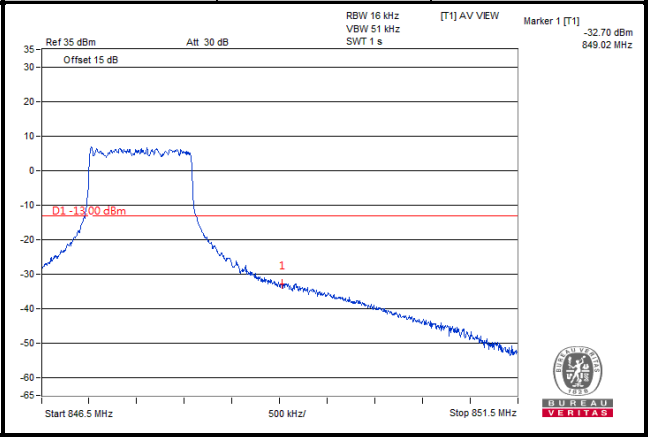
| LTE Band 5 | | | | | |
|---|---|---|---|---|---|
| Channel Bandwidth: 10 MHz | | | | | |
| Channel | 20450 | 1 RB | Channel | 20600 | 1 RB |
|  | | |  | | |
| Channel | 20450 | 6 RB | Channel | 20600 | 6 RB |
|  | | |  | | |

| LTE Band 26 | | | | | |
|---|---|---|---|---|---|
| Channel Bandwidth: 1.4 MHz | | | | | |
| Channel | 26797 | 1 RB | Channel | 27033 | 1 RB |
|  | | |  | | |
| Channel | 26797 | 6 RB | Channel | 27033 | 6 RB |
|  | | |  | | |

| LTE Band 26 | | | | | |
|---|---|---|---|---|---|
| Channel Bandwidth: 3 MHz | | | | | |
| Channel | 26805 | 1 RB | Channel | 27025 | 1 RB |
|  | | |  | | |
| Channel | 26805 | 6 RB | Channel | 27025 | 6 RB |
|  | | |  | | |

| LTE Band 26 | | | | | |
|---|---|---|---|---|---|
| Channel Bandwidth: 5 MHz | | | | | |
| Channel | 26815 | 1 RB | Channel | 27015 | 1 RB |
|  | | |  | | |
| Channel | 26815 | 6 RB | Channel | 27015 | 6 RB |
|  | | |  | | |

| LTE Band 26 | | | | | |
|---|---|---|---|---|---|
| Channel Bandwidth: 10 MHz | | | | | |
| Channel | 26840 | 1 RB | Channel | 26990 | 1 RB |
|  | | |  | | |
| Channel | 26840 | 6 RB | Channel | 26990 | 6 RB |
|  | | |  | | |

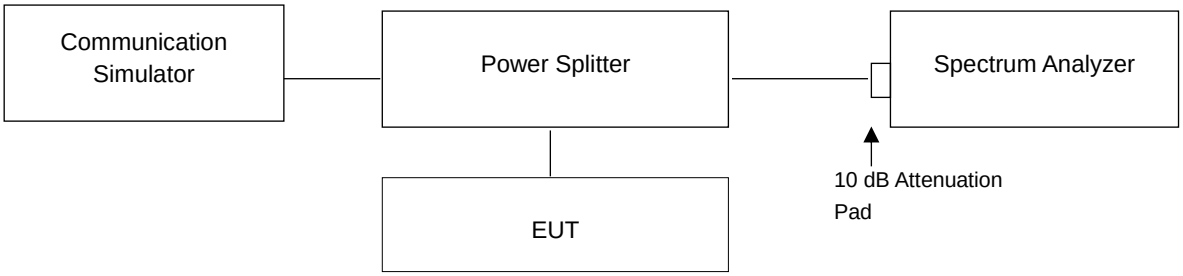
| LTE Band 26 | | | | | |
|---|---|---|---|---|---|
| Channel Bandwidth: 15 MHz | | | | | |
| Channel | 26865 | 1 RB | Channel | 26965 | 1 RB |
|  | | |  | | |
| Channel | 26865 | 6 RB | Channel | 26965 | 6 RB |
|  | | |  | | |

## 4.6 Peak to Average Ratio

### 4.6.1 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.

### 4.6.2 Test Setup

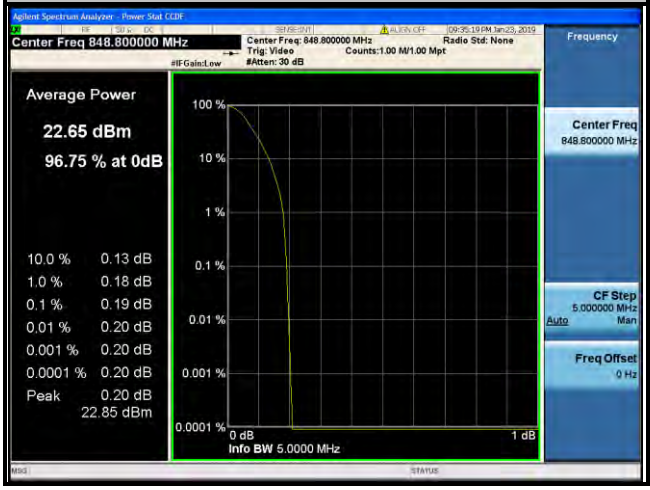



### 4.6.3 Test Procedures

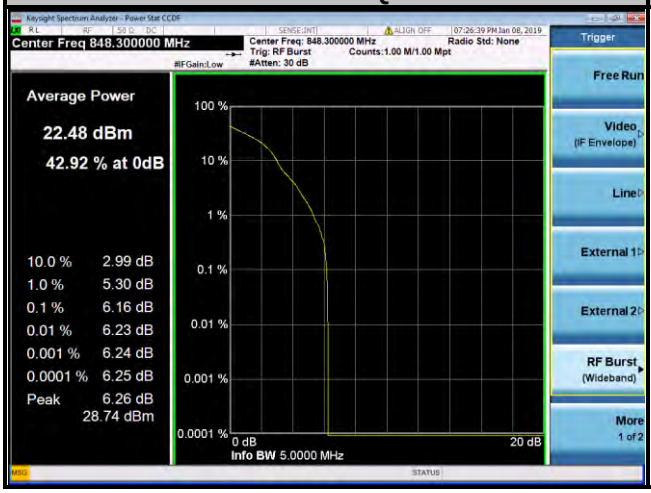
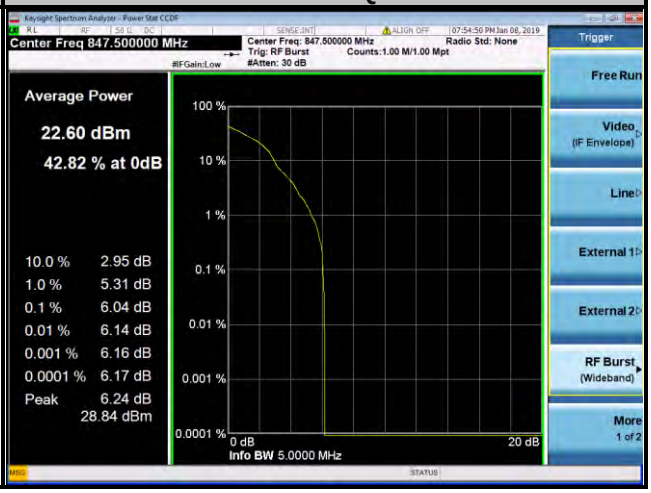
1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1 %.

4.6.4 Test Results

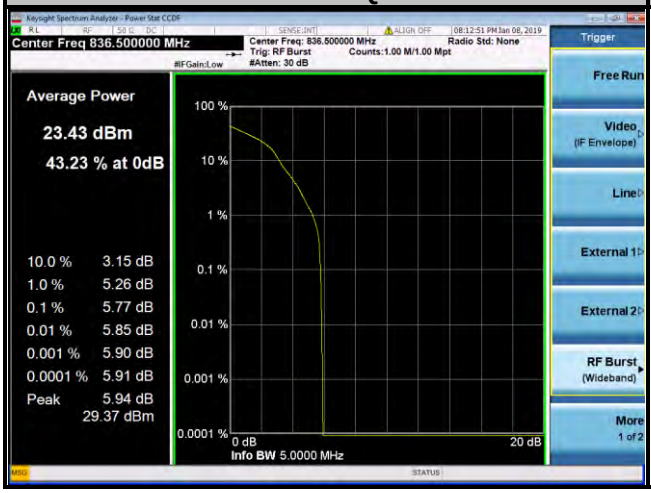
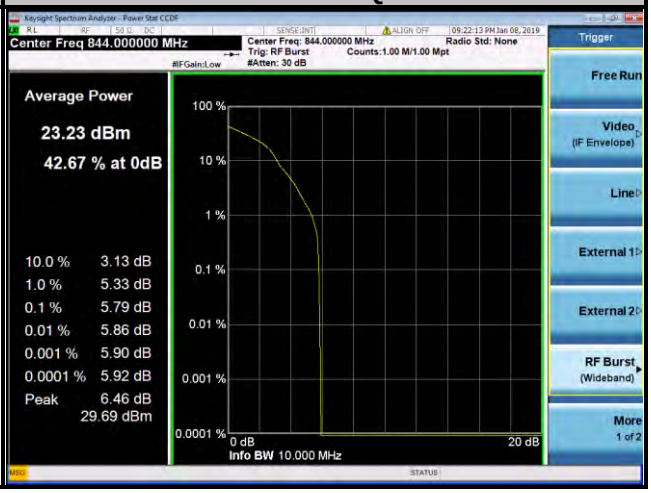
| Channel | Frequency (MHz) | Peak to Average Ratio (dB) | |
|---|---|---|---|
| | | GSM | EDGE |
| 128 | 824.2 | 0.18 | 3.15 |
| 189 | 836.4 | 0.18 | 3.16 |
| 251 | 848.8 | 0.19 | 3.23 |

| Spectrum Plot of Worst Value | |
|---|---|
| GSM | EDGE |
|  |  |

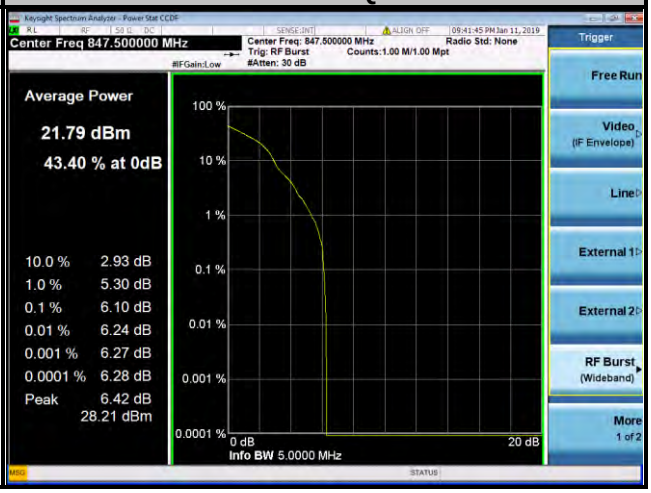
| LTE Band 5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 1.4 MHz | | | | Channel Bandwidth: 3 MHz | | | |
| Channel | Frequency (MHz) | Peak to Average Ratio (dB) | | Channel | Frequency (MHz) | Peak to Average Ratio (dB) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 20407 | 824.7 | 5.00 | 5.94 | 20415 | 825.5 | 4.95 | 5.87 |
| 20525 | 836.5 | 5.13 | 6.08 | 20525 | 836.5 | 5.07 | 6.01 |
| 20643 | 848.3 | 5.22 | 6.16 | 20635 | 847.5 | 5.11 | 6.04 |

| Spectrum Plot of Worst Value | |
|---|---|
| 1.4 MHz / 16QAM | 3 MHz / 16QAM |
|  |  |

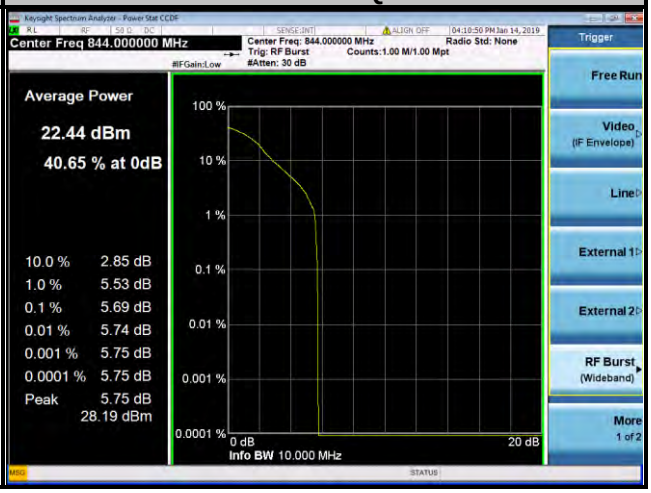
| LTE Band 5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 5 MHz | | | | Channel Bandwidth: 10 MHz | | | |
| Channel | Frequency (MHz) | Peak to Average Ratio (dB) | | Channel | Frequency (MHz) | Peak to Average Ratio (dB) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 20425 | 826.5 | 4.95 | 5.59 | 20450 | 829.0 | 4.97 | 5.53 |
| 20525 | 836.5 | 5.02 | 5.77 | 20525 | 836.5 | 4.97 | 5.67 |
| 20625 | 846.5 | 5.12 | 5.64 | 20600 | 844.0 | 5.00 | 5.79 |

| Spectrum Plot of Worst Value | |
|---|---|
| 5 MHz / 16QAM | 10 MHz / 16QAM |
|  |  |

| LTE Band 26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 1.4 MHz | | | | Channel Bandwidth: 3 MHz | | | |
| Channel | Frequency (MHz) | Peak to Average Ratio (dB) | | Channel | Frequency (MHz) | Peak to Average Ratio (dB) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 26797 | 824.7 | 5.07 | 5.99 | 26805 | 825.5 | 5.01 | 5.92 |
| 26915 | 836.5 | 5.18 | 6.12 | 26915 | 836.5 | 5.08 | 6.00 |
| 27033 | 848.3 | 5.25 | 6.19 | 27025 | 847.5 | 5.15 | 6.10 |

| Spectrum Plot of Worst Value | |
|---|---|
| 1.4 MHz / 16QAM | 3 MHz / 16QAM |
|  |  |

| LTE Band 26 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel Bandwidth: 5 MHz | | | | Channel Bandwidth: 10 MHz | | | |
| Channel | Frequency (MHz) | Peak to Average Ratio (dB) | | Channel | Frequency (MHz) | Peak to Average Ratio (dB) | |
| | | QPSK | 16QAM | | | QPSK | 16QAM |
| 26815 | 826.5 | 5.01 | 5.76 | 26840 | 829.0 | 4.91 | 5.57 |
| 26915 | 836.5 | 5.07 | 5.84 | 26915 | 836.5 | 4.95 | 5.64 |
| 27015 | 846.5 | 5.14 | 5.90 | 26990 | 844.0 | 5.00 | 5.69 |

| Spectrum Plot of Worst Value | |
|---|---|
| 5 MHz / 16QAM | 10 MHz / 16QAM |
|  |  |

| LTE Band 26 | | | |
|---|---|---|---|
| Channel Bandwidth: 15 MHz | | | |
| Channel | Frequency (MHz) | Peak to Average Ratio (dB) | |
| | | QPSK | 16QAM |
| 26865 | 831.5 | 4.93 | 5.59 |
| 26915 | 836.5 | 4.93 | 5.62 |
| 26965 | 841.5 | 4.96 | 5.65 |

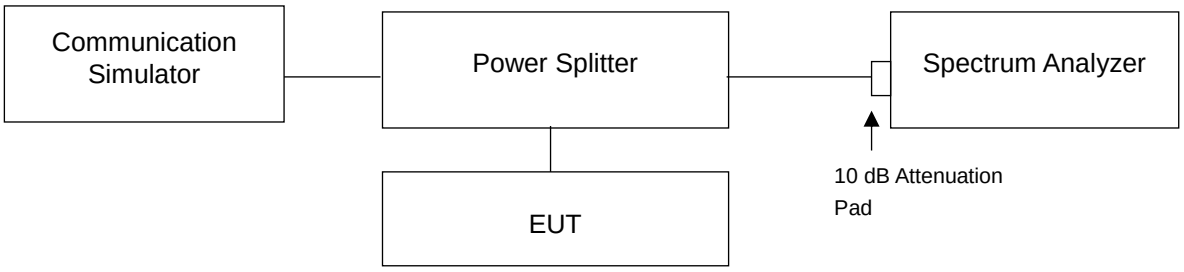
| Spectrum Plot of Worst Value |
|---|
| 15 MHz / 16QAM |

## 4.7 Conducted Spurious Emissions

### 4.7.1 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 -13 dBm.

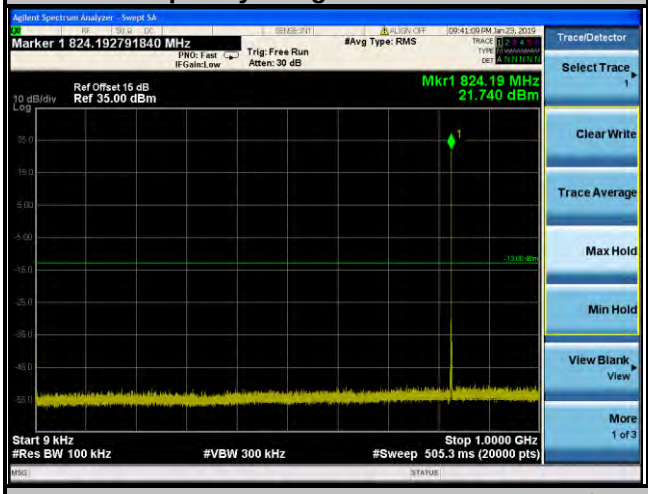
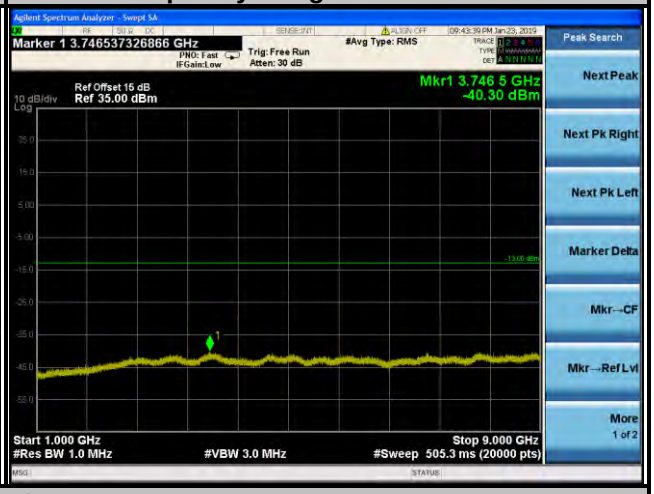
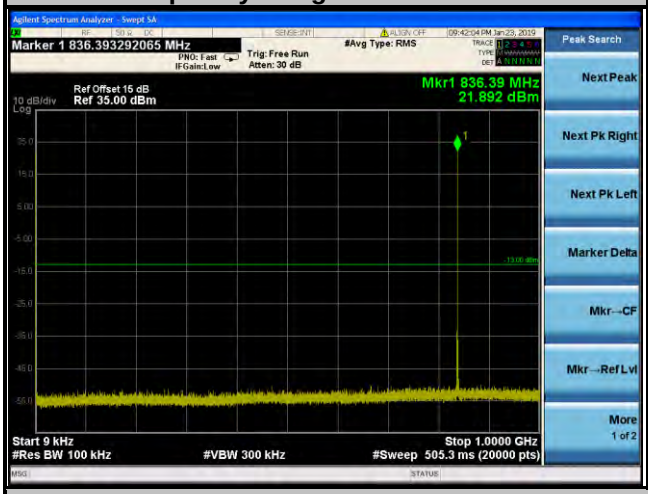
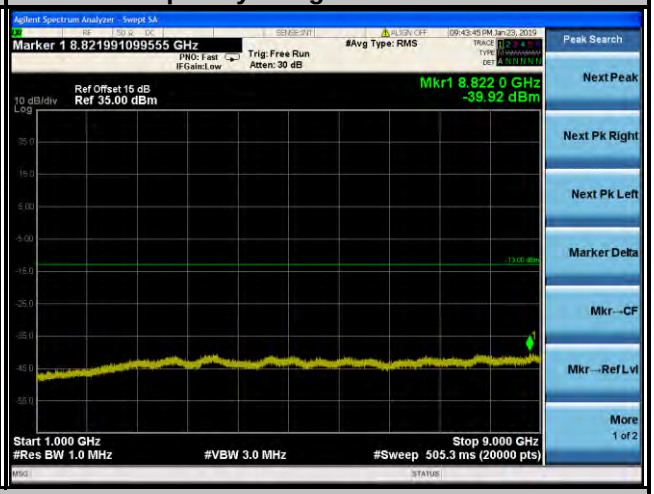
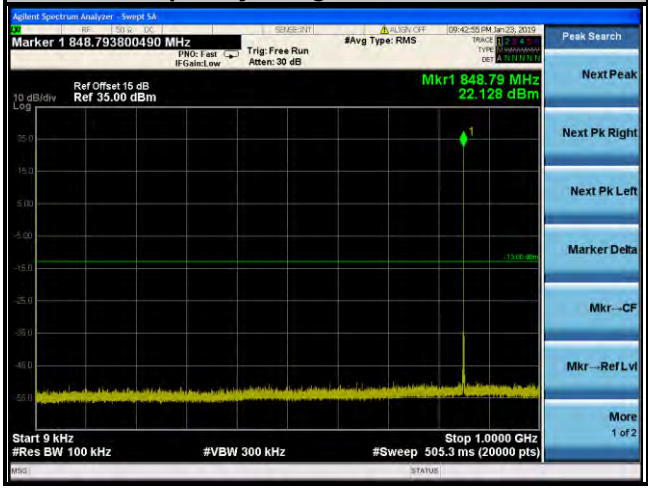
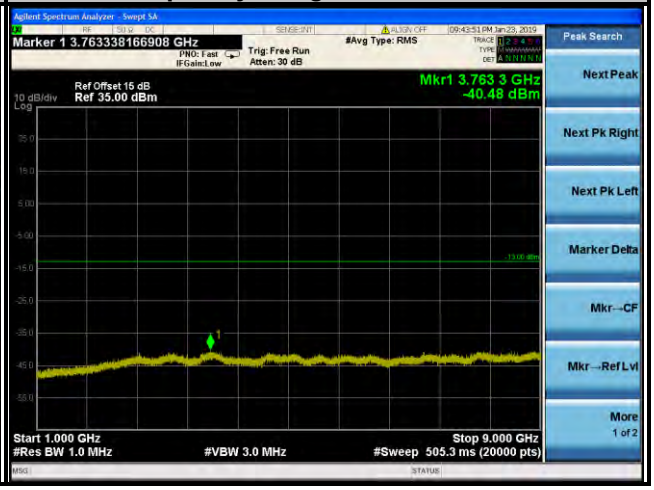
### 4.7.2 Test Setup



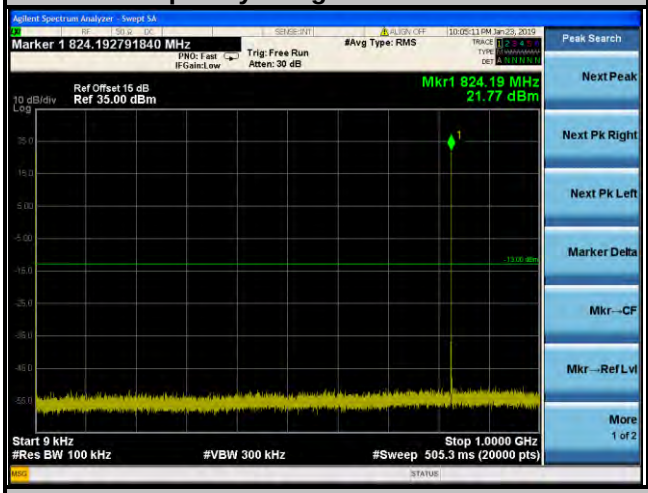
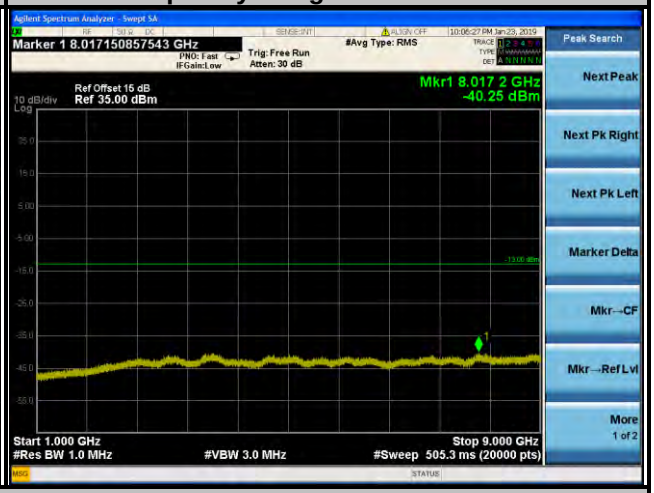
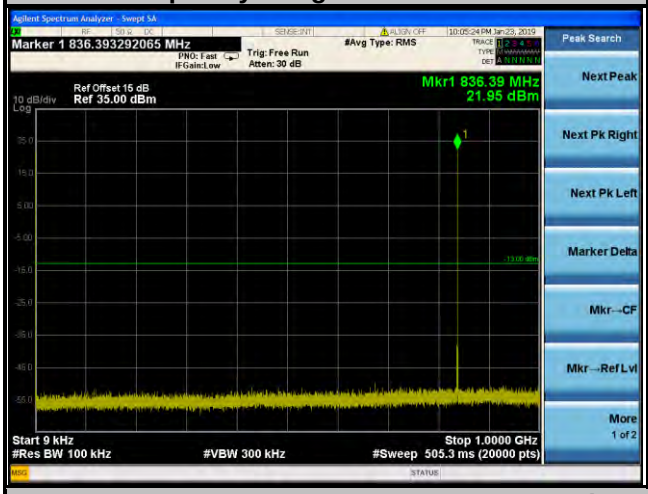
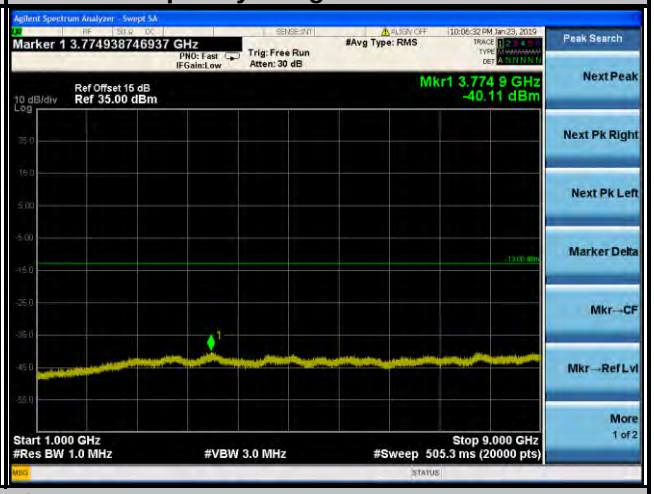
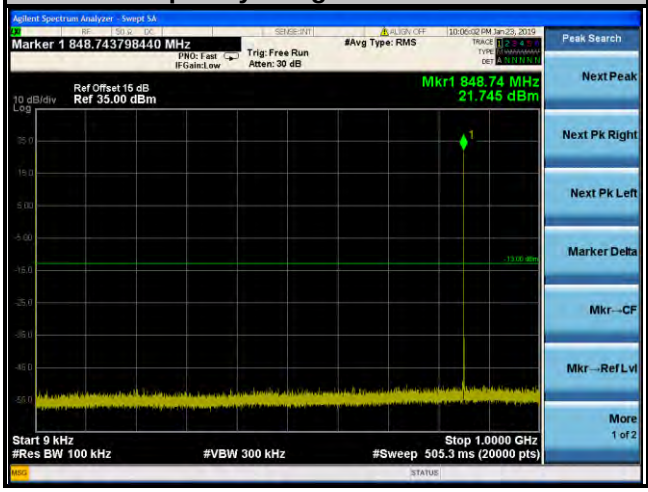
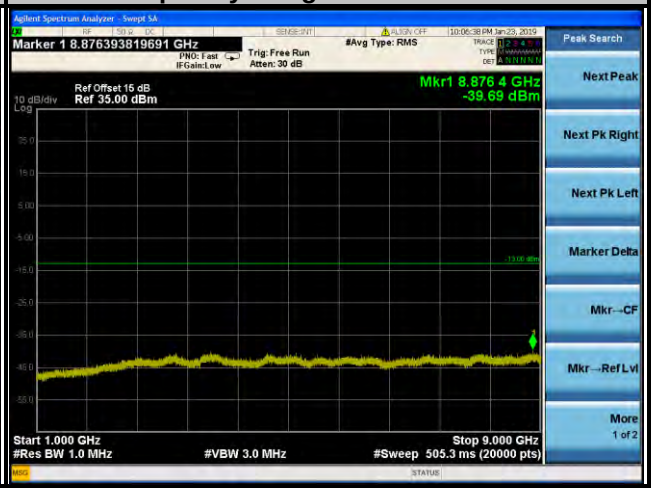

### 4.7.3 Test Procedure

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 1 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 100 kHz and VBW = 300 kHz is used for conducted emission measurement.
c. Measuring frequency range is from 1 GHz to 10 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.

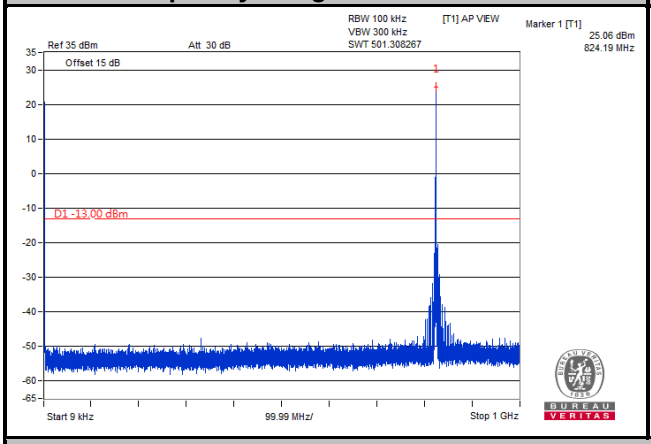
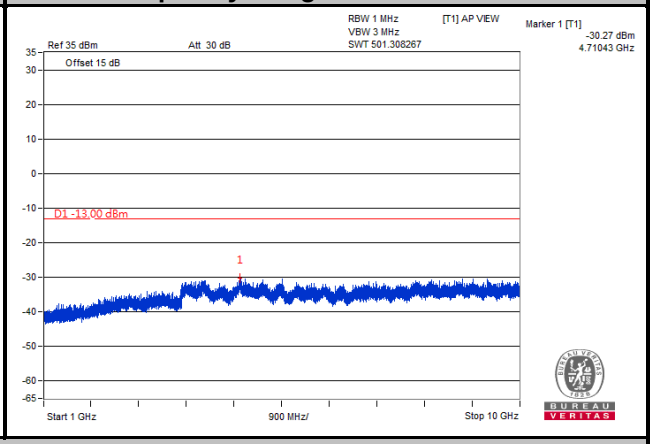
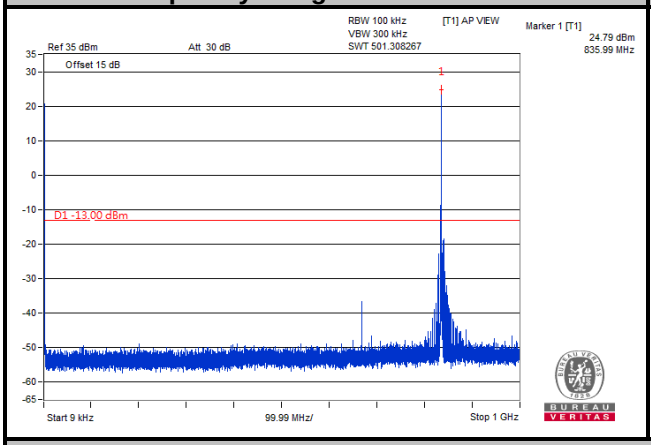
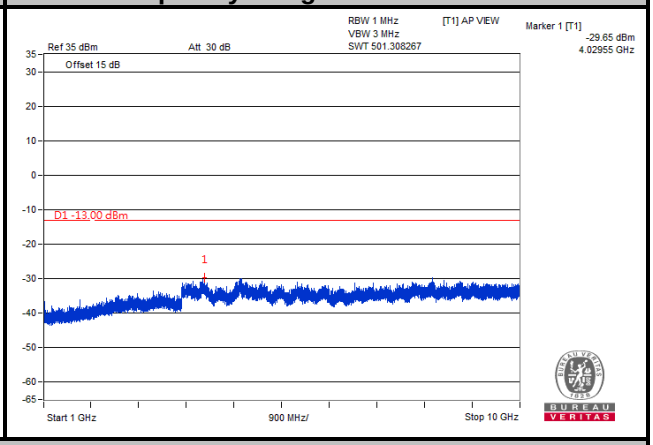
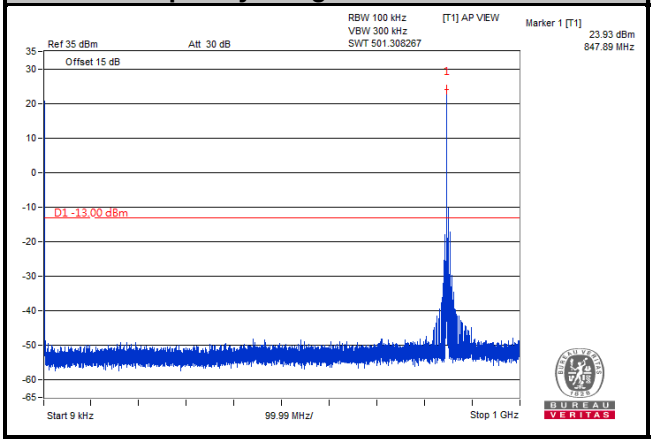
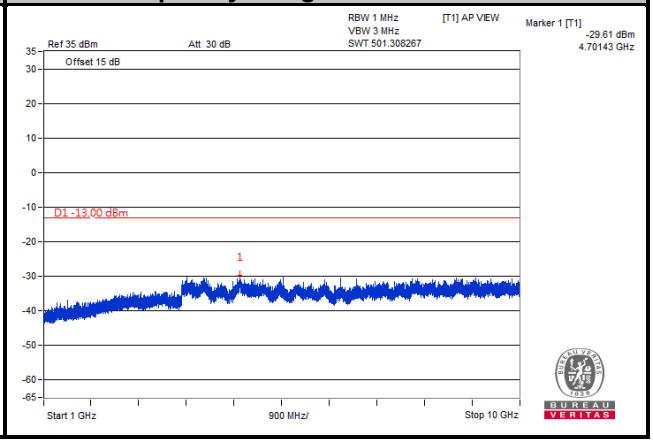
4.7.4 Test Results

| GSM | |
|---|---|
| Channel 128 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 9 GHz |
|  |  |
| Channel 189 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 9 GHz |
|  |  |
| Channel 251 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 9 GHz |
|  |  |

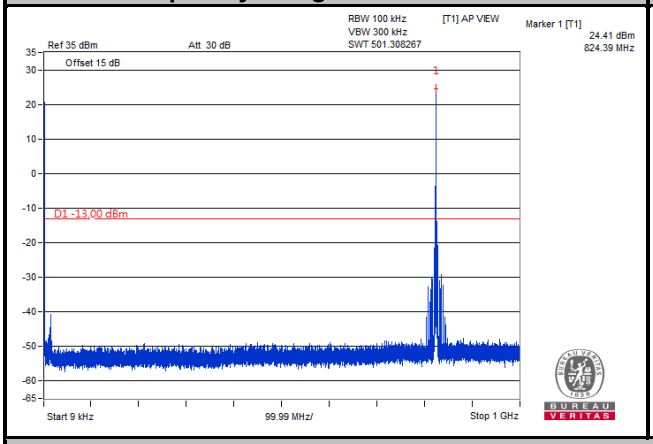
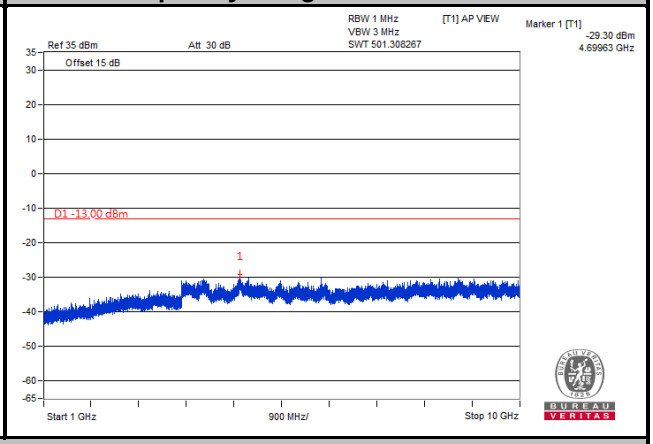
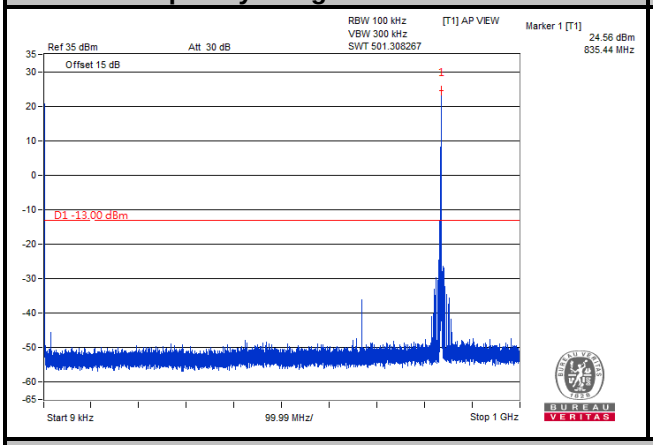
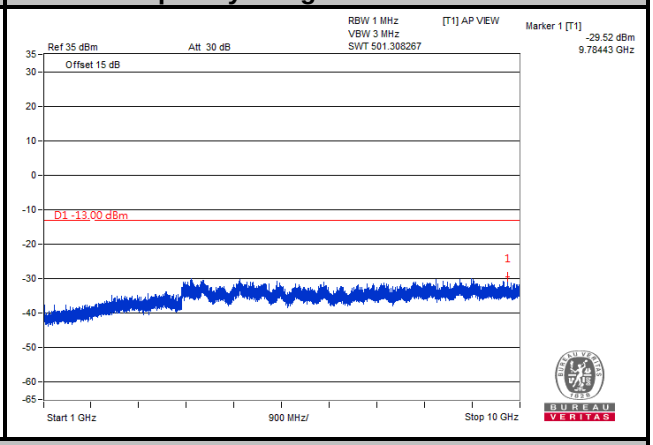
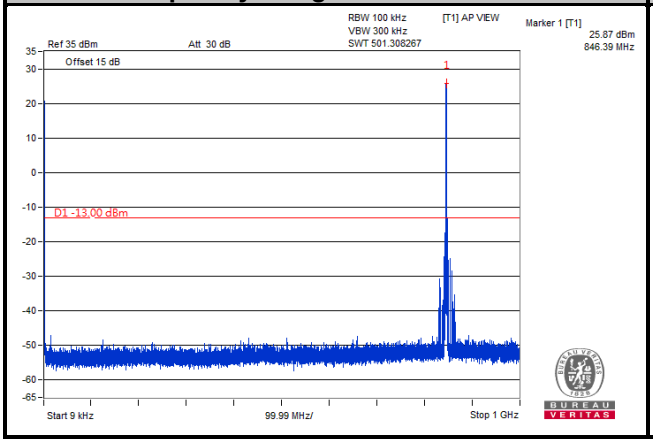
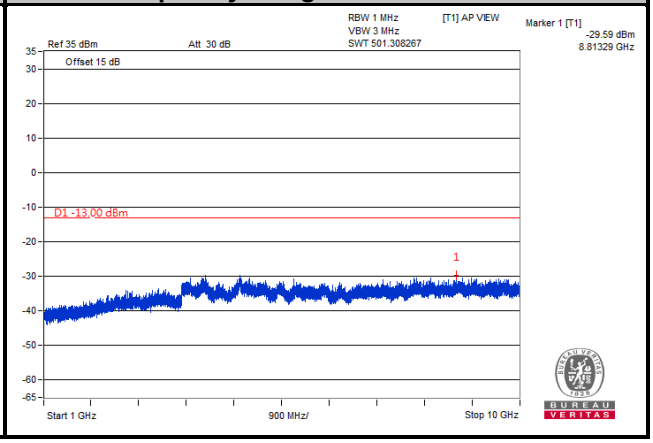
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

| EDGE | |
|---|---|
| Channel 128 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 9 GHz |
|  |  |
| Channel 189 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 9 GHz |
|  |  |
| Channel 251 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |

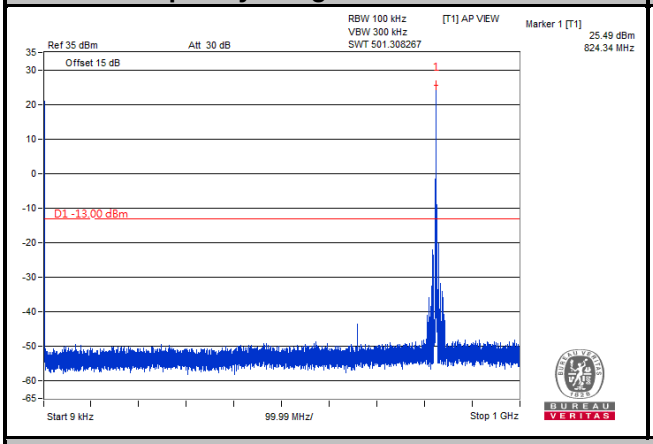
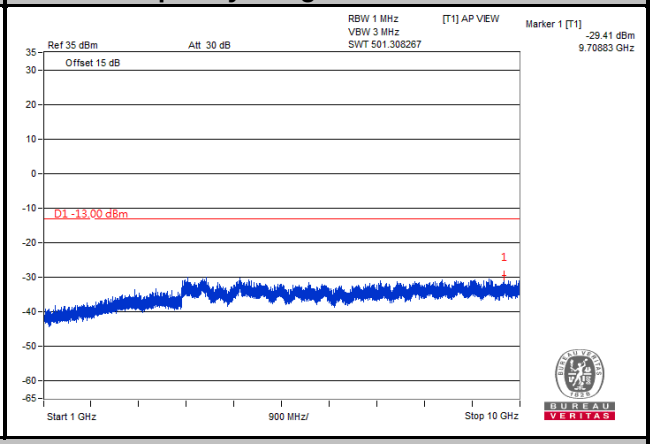
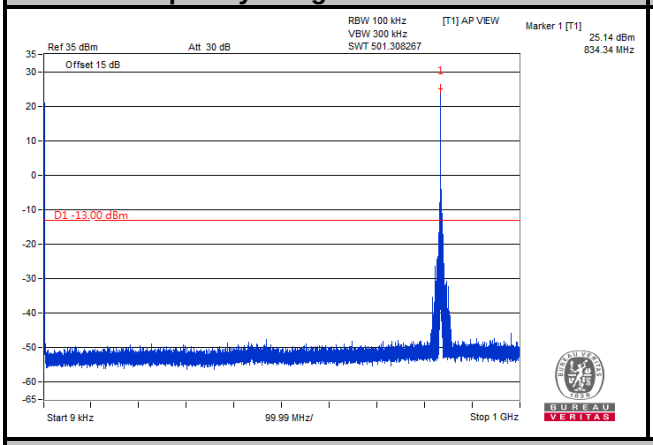
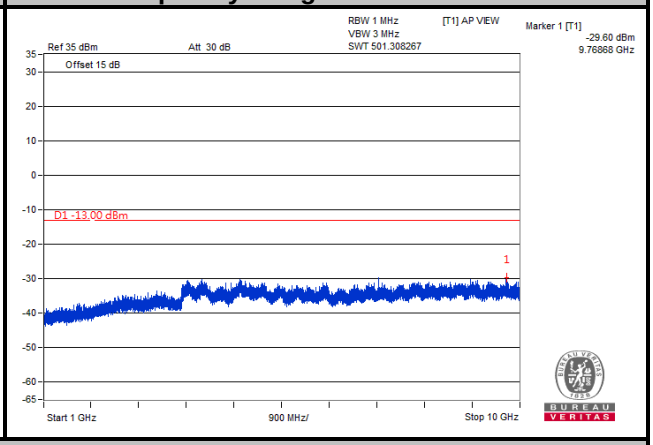
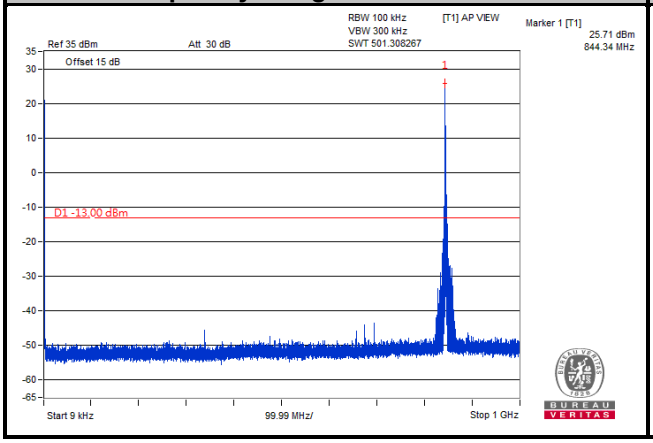
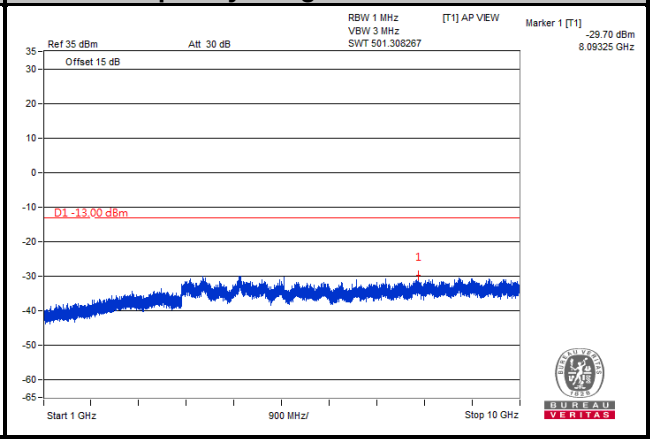
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

| LTE Band 5 | |
|---|---|
| Channel Bandwidth: 1.4 MHz | |
| Channel 20407 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 20525 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 20643 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |

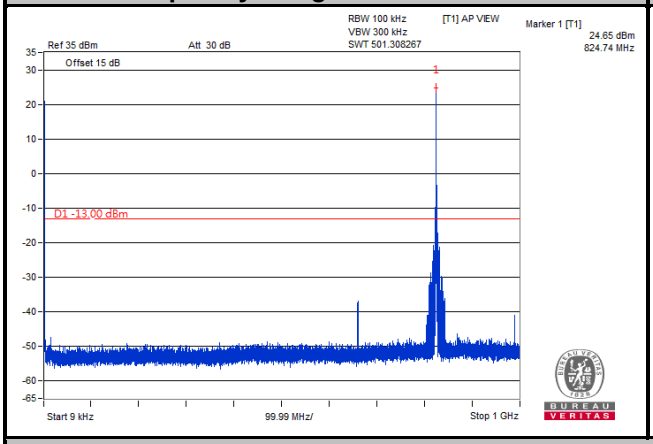
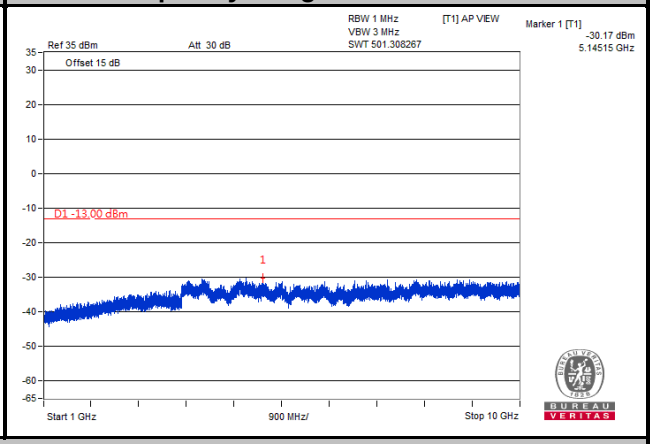
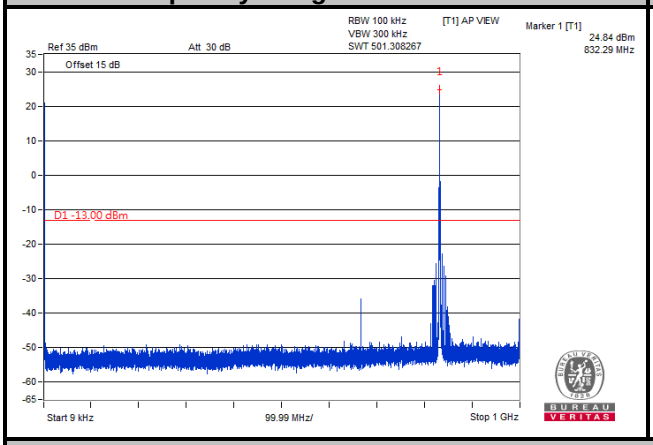
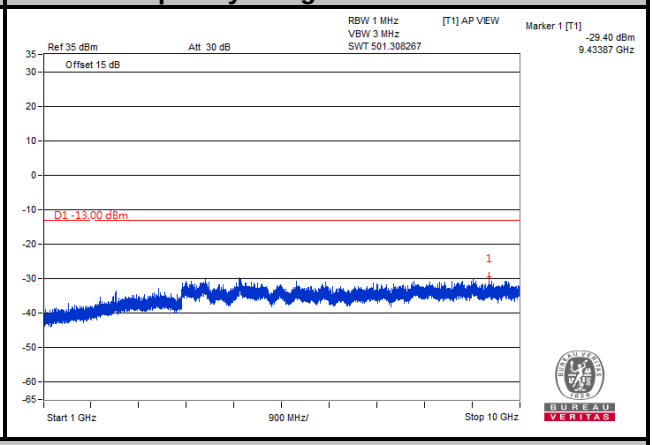
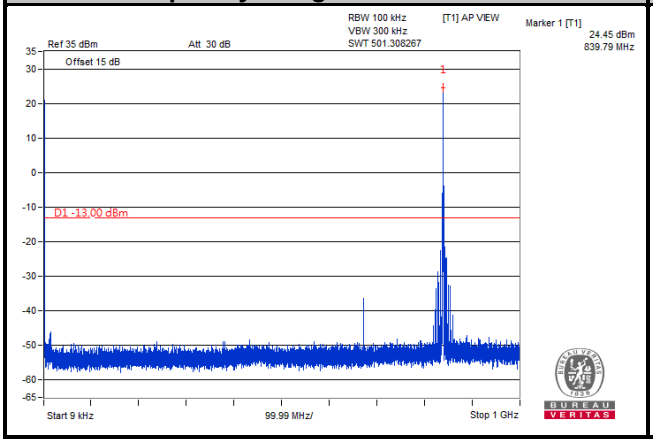
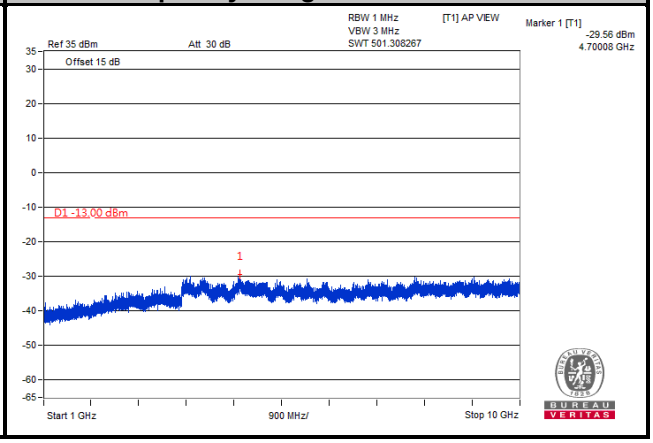
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

| LTE Band 5 | |
|---|---|
| Channel Bandwidth: 3 MHz | |
| Channel 20415 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 20525 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 20635 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |

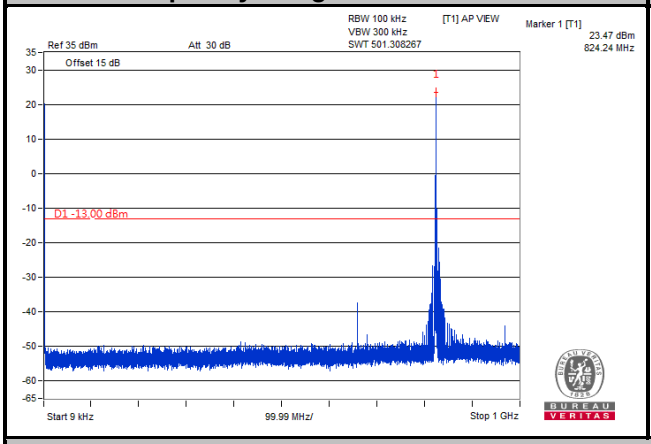
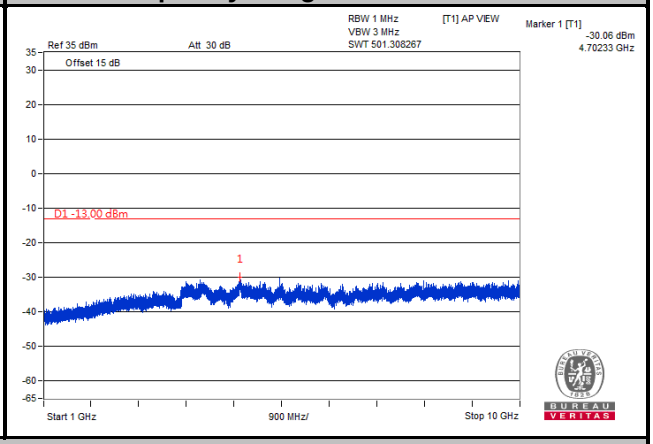
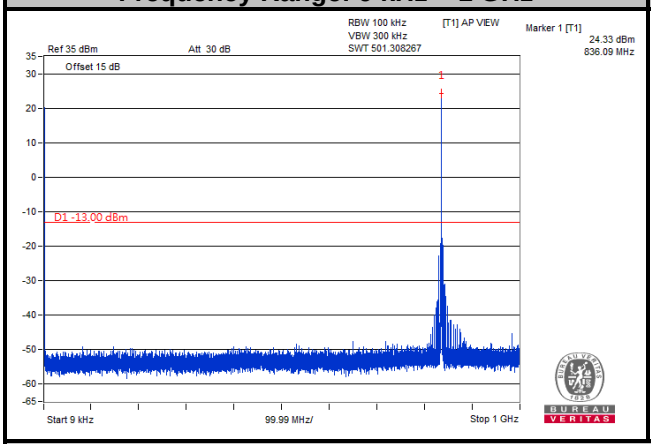
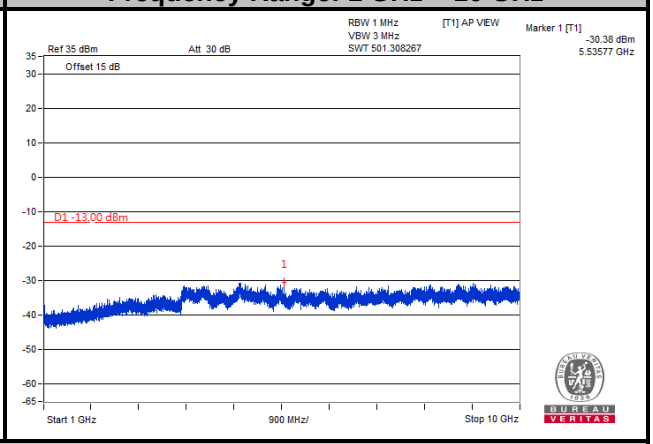
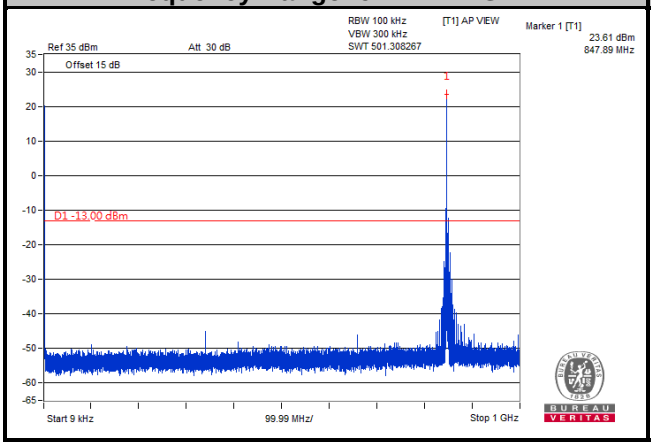
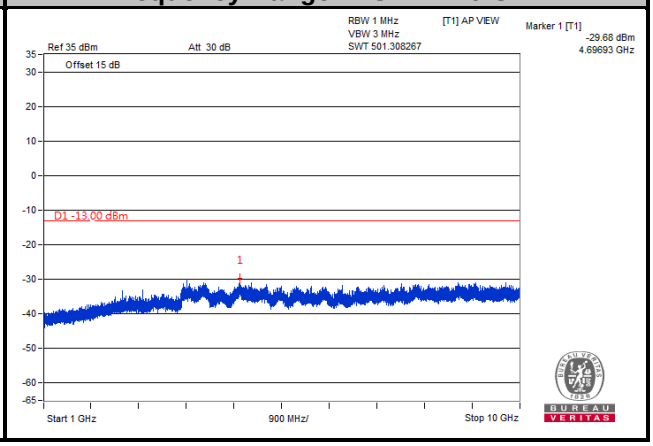
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

| LTE Band 5 | |
|---|---|
| Channel Bandwidth: 5 MHz | |
| Channel 20425 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 20525 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 20625 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |

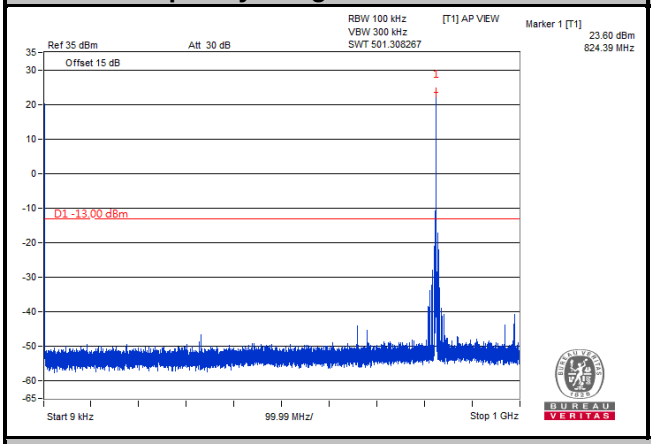
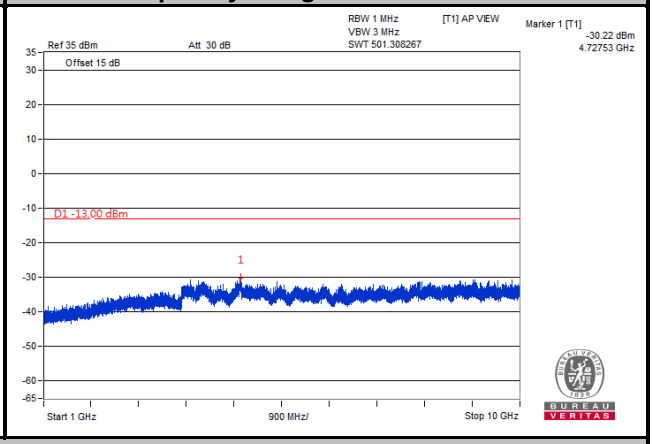
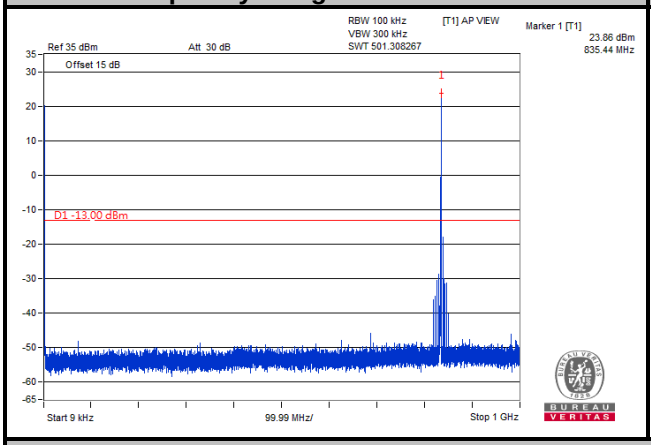
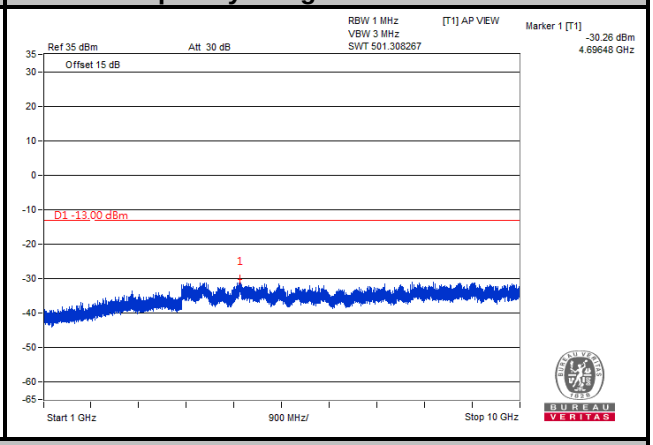
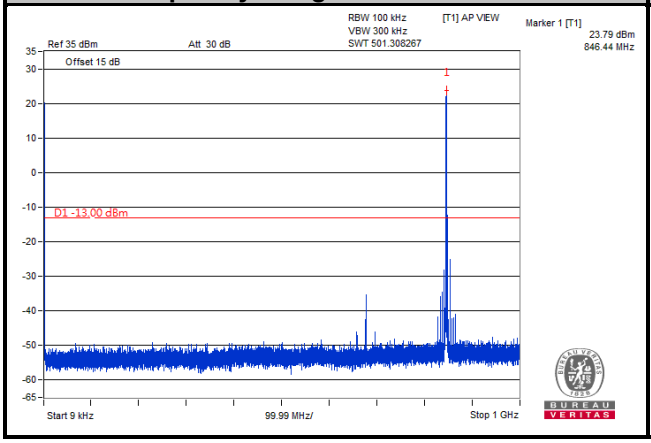
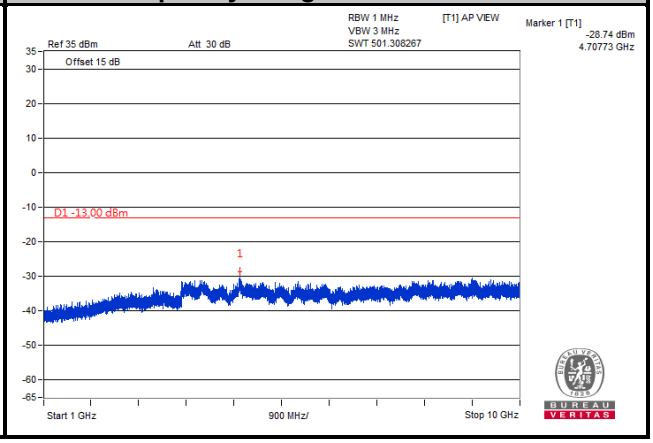
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

| LTE Band 5 | |
|---|---|
| Channel Bandwidth: 10 MHz | |
| Channel 20450 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 20525 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 20600 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |

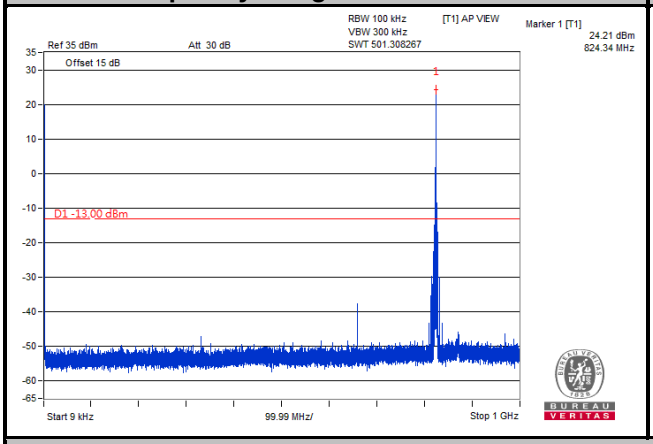
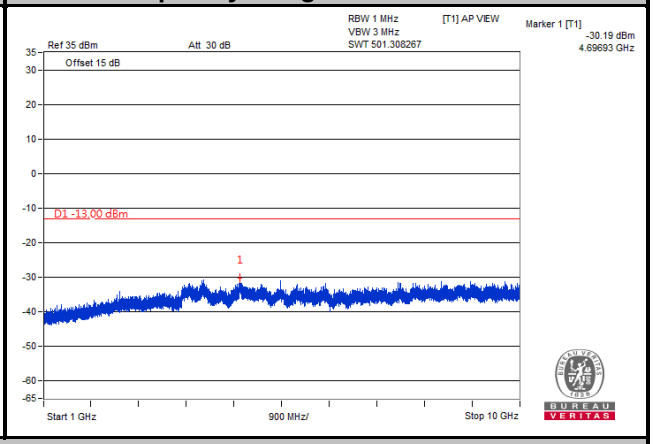
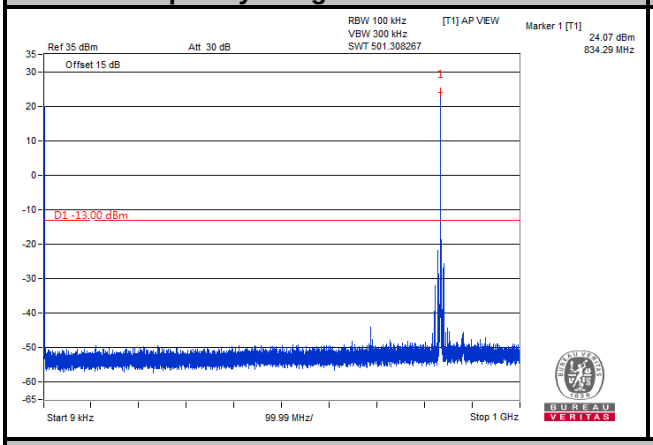
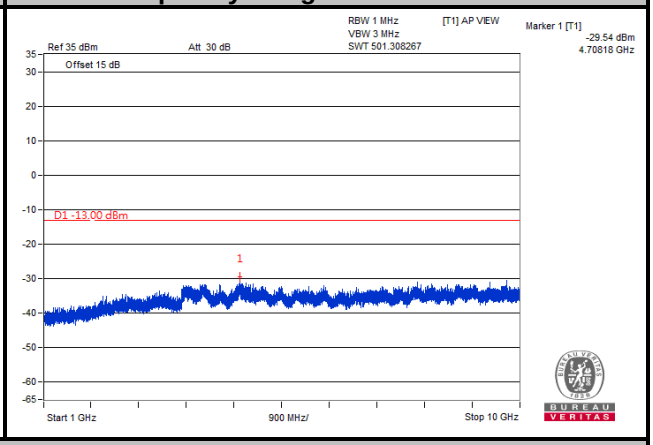
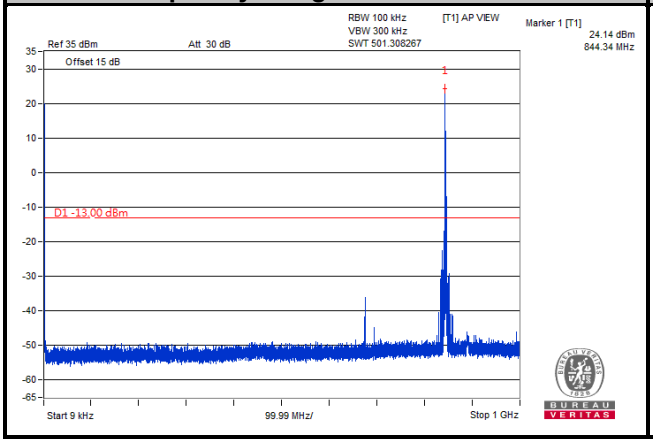
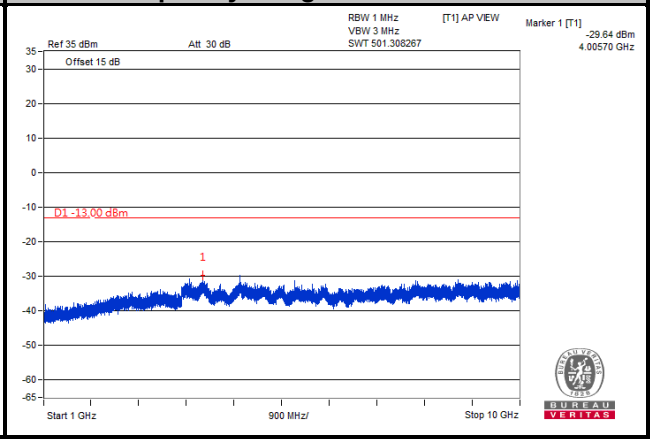
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

| LTE Band 26 | |
|---|---|
| Channel Bandwidth: 1.4 MHz | |
| Channel 26797 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 26915 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 27033 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |

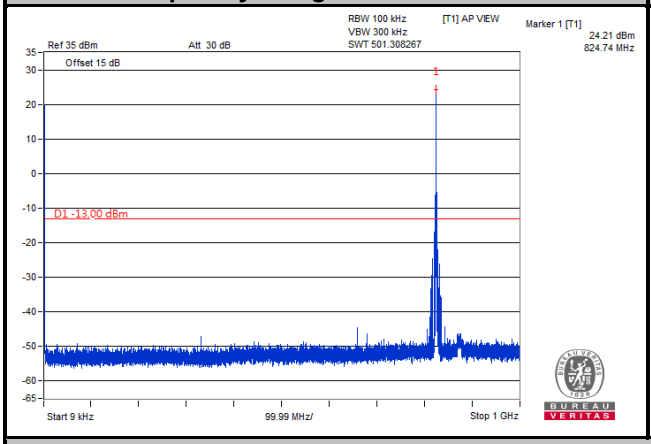
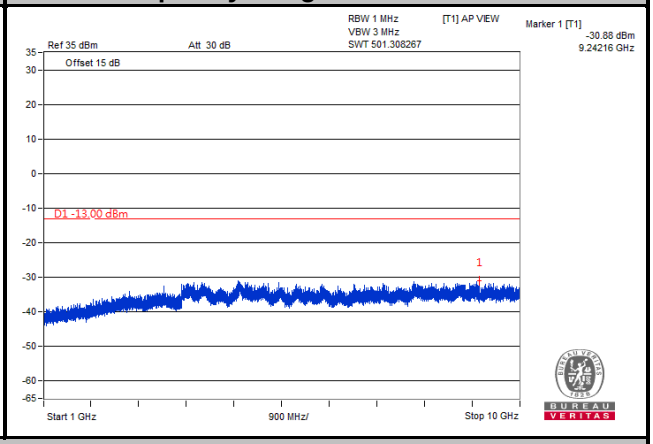
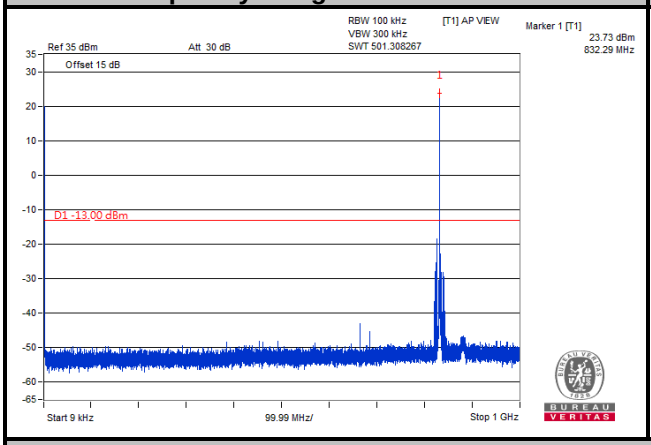
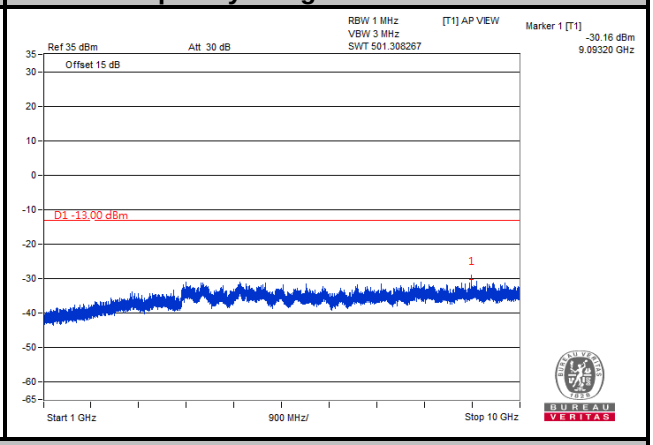
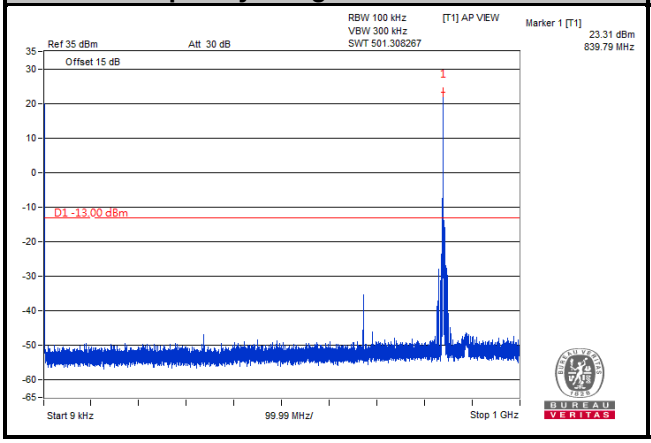
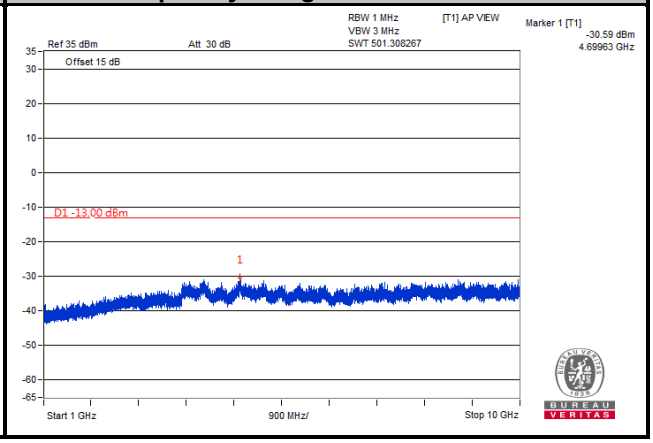
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

| LTE Band 26 | |
|---|---|
| Channel Bandwidth: 3 MHz | |
| Channel 26805 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 26915 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 27025 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |

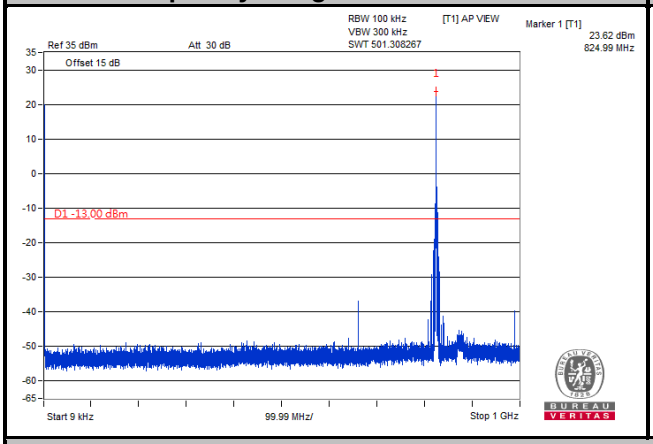
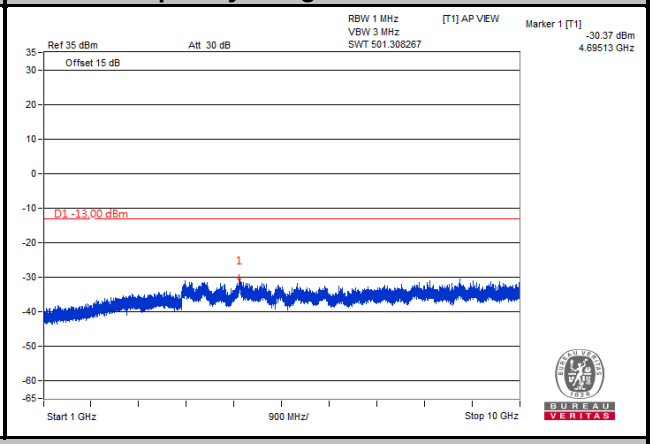
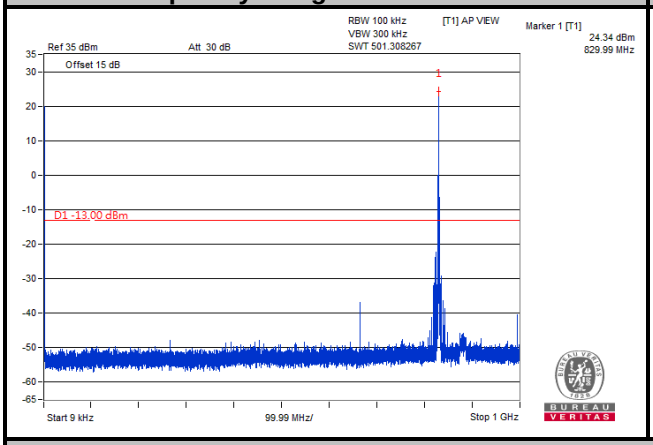
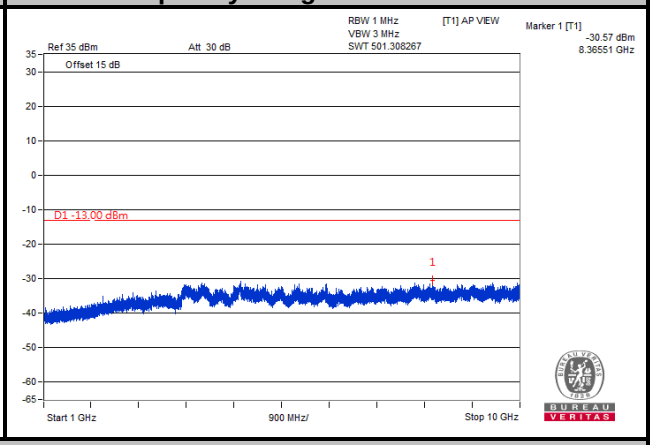
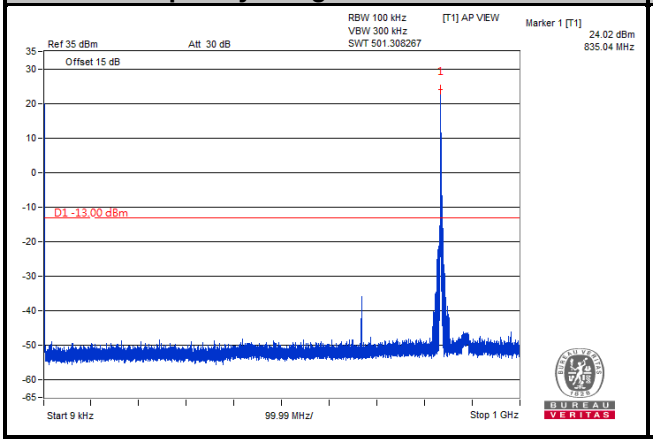
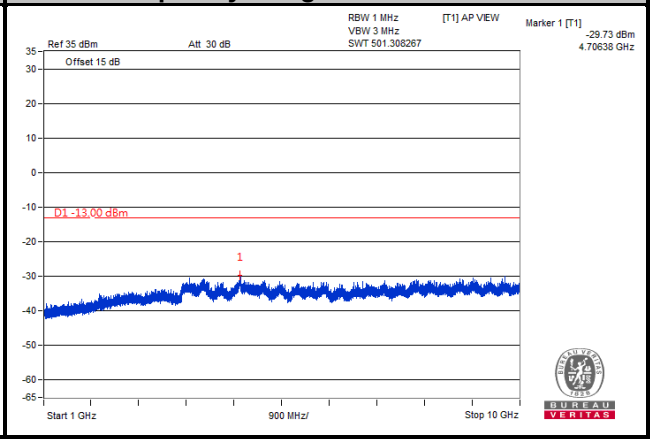
Note: The signal over the limit in 9 kHz is from spectrum analyzer.

| LTE Band 26 | |
|---|---|
| Channel Bandwidth: 5 MHz | |
| Channel 26815 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 26915 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 27015 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |

Note: The signal over the limit in 9 kHz is from spectrum analyzer.

| LTE Band 26 | |
|---|---|
| Channel Bandwidth: 10 MHz | |
| Channel 26840 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 26915 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 26990 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |

Note: The signal over the limit in 9 kHz is from spectrum analyzer.

| LTE Band 26 | |
|---|---|
| Channel Bandwidth: 15 MHz | |
| Channel 26865 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 26915 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |
| Channel 26965 | |
| Frequency Range: 9 kHz ~ 1 GHz | Frequency Range: 1 GHz ~ 10 GHz |
|  |  |

Note: The signal over the limit in 9 kHz is from spectrum analyzer.

## 4.8 Radiated Emission Measurement

### 4.8.1 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 is equal to -13 dBm.

### 4.8.2 Test Procedure

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) 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 1 m to 4 m 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.R.P power - 2.15 dB.

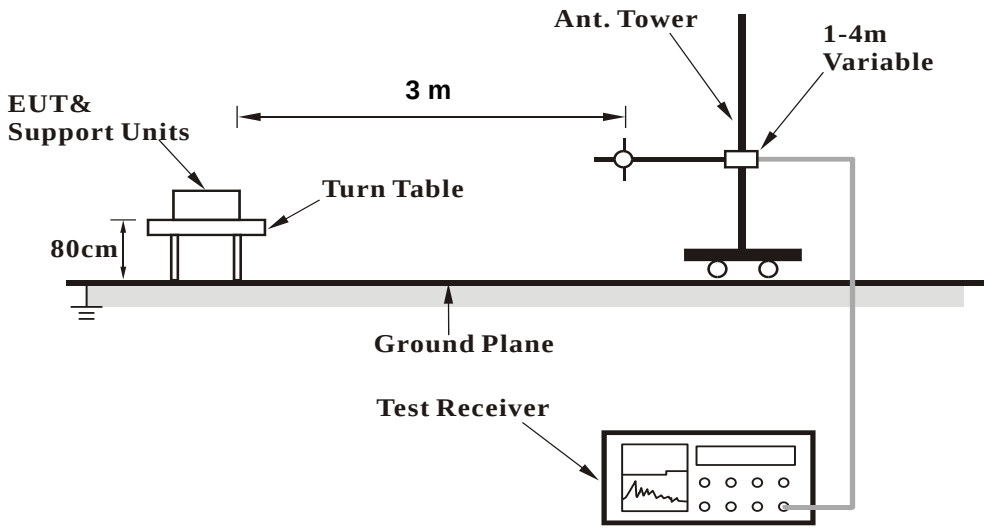
**NOTE:** The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.

### 4.8.3 Deviation from Test Standard

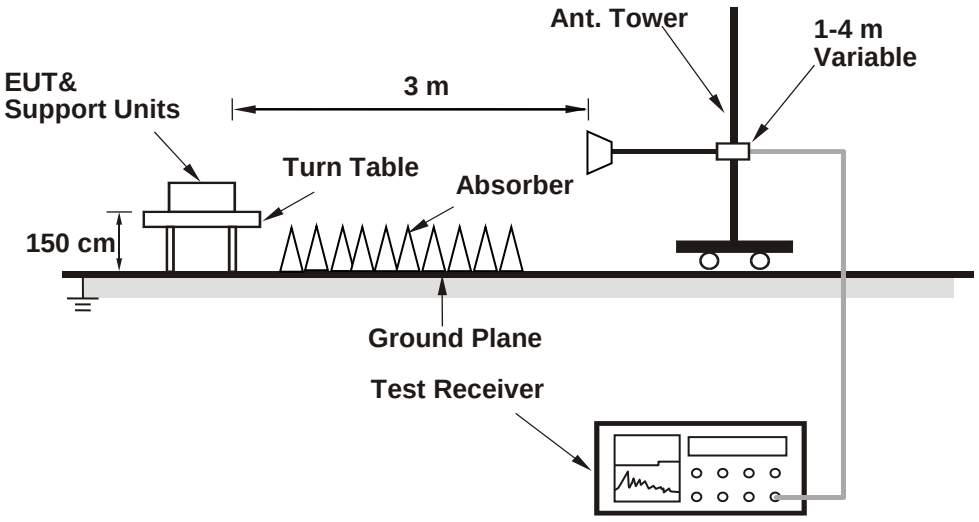
No deviation.

4.8.4 Test Setup

**<Radiated Emission below or equal 1 GHz>**




**<Radiated Emission above 1 GHz>**



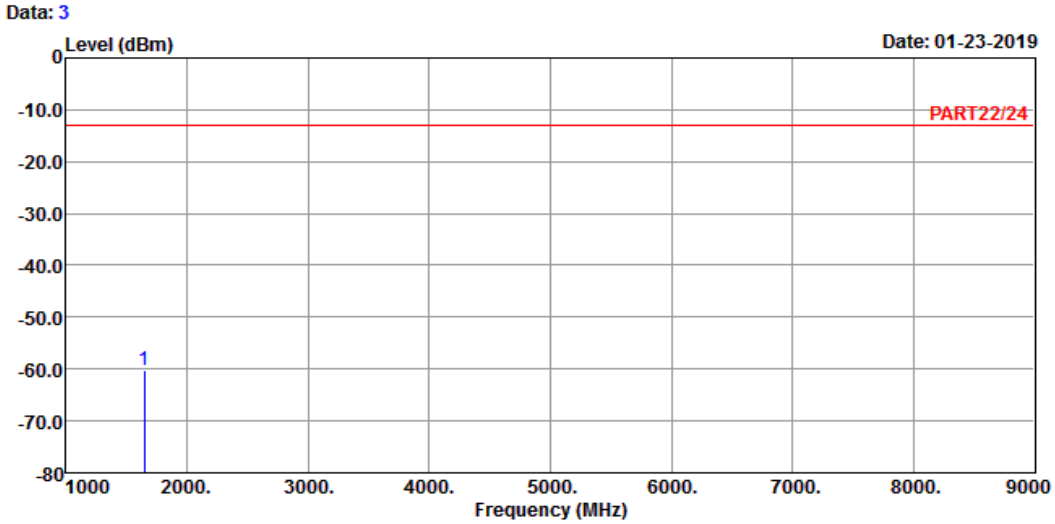

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.8.5 Test Results

**GSM:**

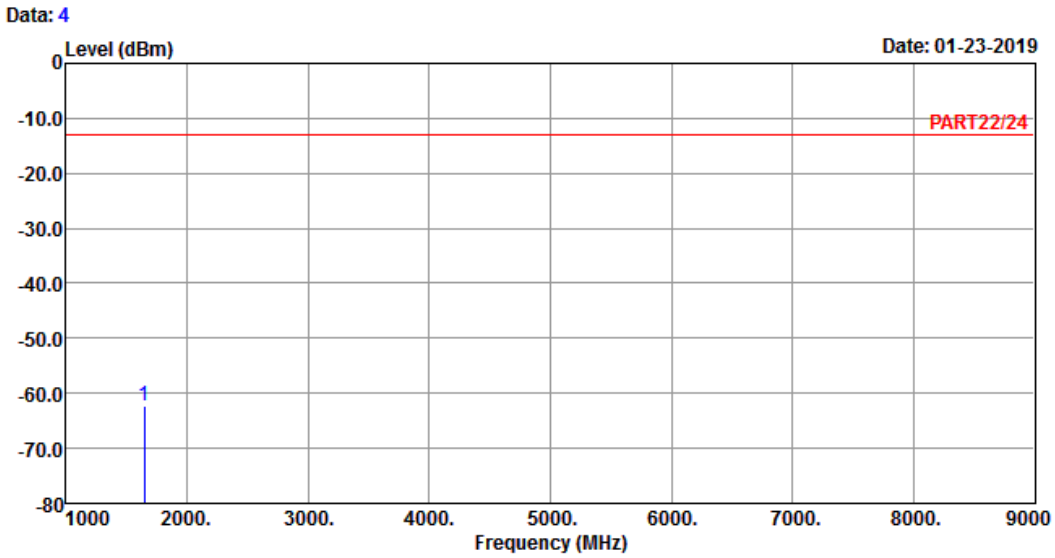
**Low Channel**

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remark : GPRS 850 Link_L-CH
Tested by: Jisyong Wang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 1648.40 | -60.11 | -45.38 | -13.00 | -47.11 | -14.73 | Peak |

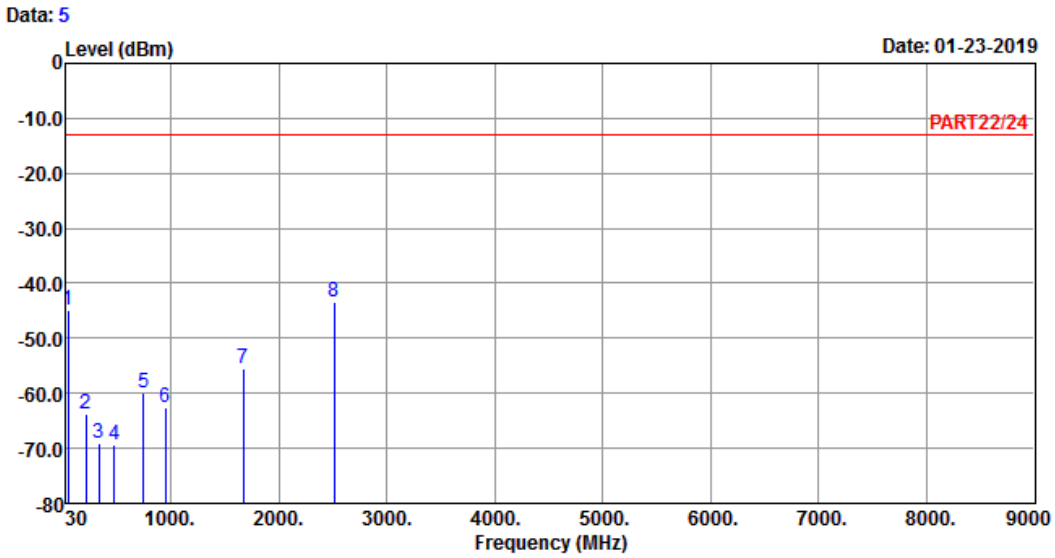



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : GPRS 850 Link_L-CH
Tested by: Jisyong Wang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 1648.40 | -62.23 | -47.50 | -13.00 | -49.23 | -14.73 | Peak |

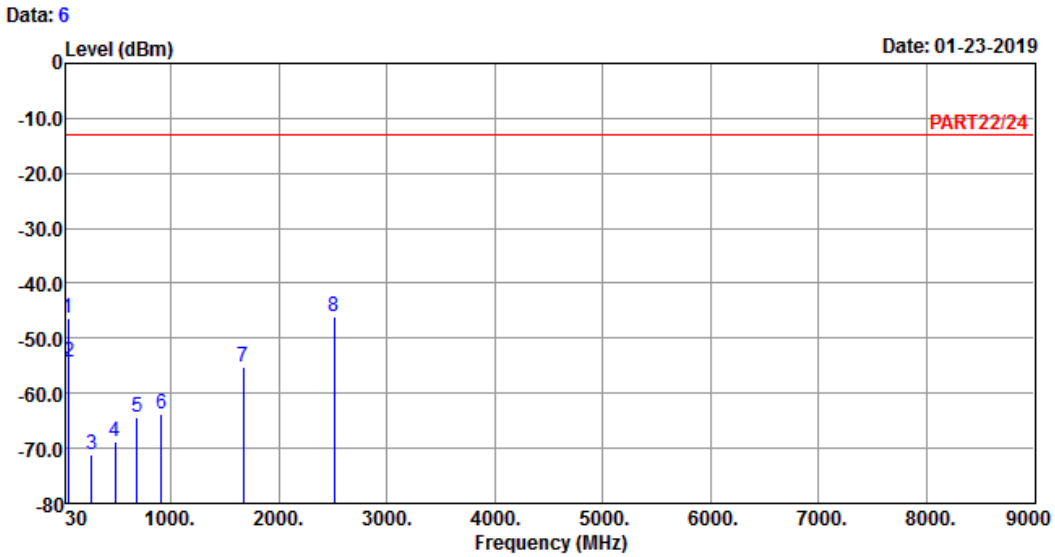
## Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remark : GPRS 850 Link_M-CH
Tested by: Jisyong Wang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 43.58 | -44.83 | -43.36 | -13.00 | -31.83 | -1.47 | Peak |
| 2 | 209.45 | -63.89 | -56.26 | -13.00 | -50.89 | -7.63 | Peak |
| 3 | 336.52 | -69.21 | -62.76 | -13.00 | -56.21 | -6.45 | Peak |
| 4 | 474.26 | -69.28 | -64.18 | -13.00 | -56.28 | -5.10 | Peak |
| 5 | 744.89 | -59.87 | -60.65 | -13.00 | -46.87 | 0.78 | Peak |
| 6 | 951.50 | -62.57 | -64.44 | -13.00 | -49.57 | 1.87 | Peak |
| 7 | 1672.80 | -55.52 | -40.84 | -13.00 | -42.52 | -14.68 | Peak |
| 8 pp | 2509.20 | -43.52 | -32.61 | -13.00 | -30.52 | -10.91 | Peak |

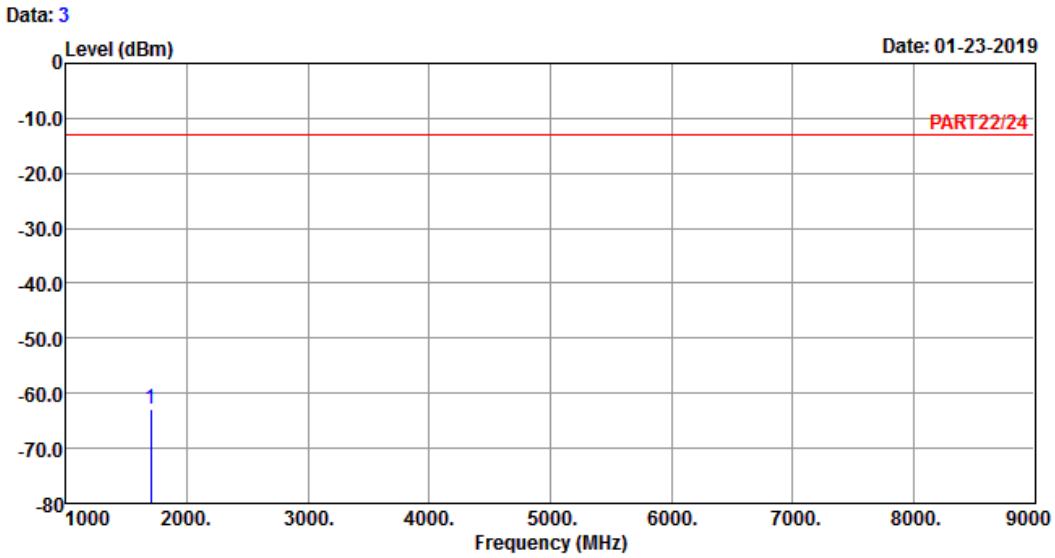



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : GPRS 850 Link_M-CH
Tested by: Jisyong Wang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 44.55 | -46.40 | -44.41 | -13.00 | -33.40 | -1.99 | Peak |
| 2 | 53.28 | -54.45 | -48.64 | -13.00 | -41.45 | -5.81 | Peak |
| 3 | 263.77 | -71.07 | -64.80 | -13.00 | -58.07 | -6.27 | Peak |
| 4 | 480.08 | -68.74 | -63.75 | -13.00 | -55.74 | -4.99 | Peak |
| 5 | 689.60 | -64.41 | -64.14 | -13.00 | -51.41 | -0.27 | Peak |
| 6 | 912.70 | -63.87 | -64.75 | -13.00 | -50.87 | 0.88 | Peak |
| 7 | 1672.80 | -55.11 | -40.43 | -13.00 | -42.11 | -14.68 | Peak |
| 8 pp | 2509.20 | -46.11 | -35.20 | -13.00 | -33.11 | -10.91 | Peak |

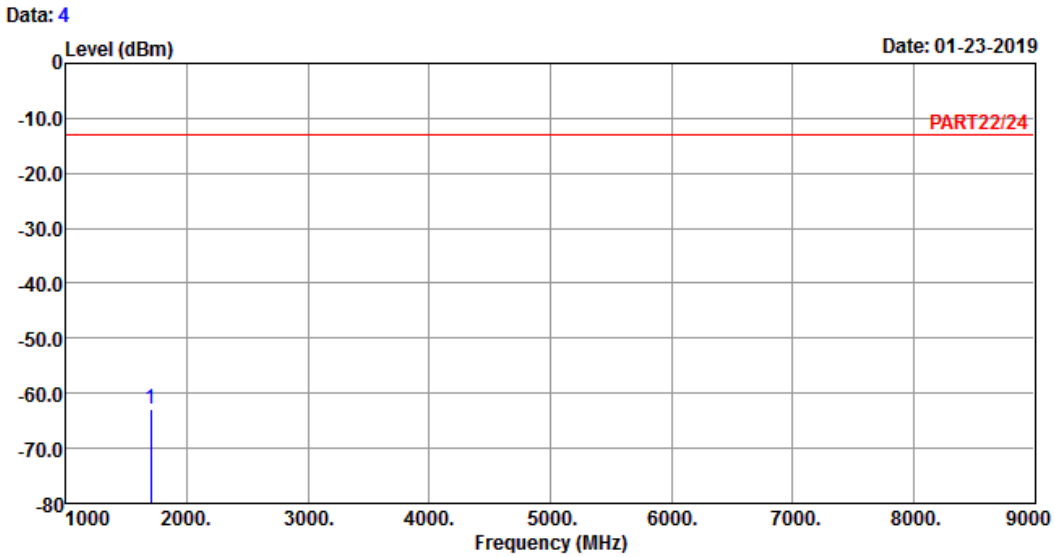
## High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remark : GPRS 850 Link_H-CH
Tested by: Jisyong Wang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 1697.60 | -62.85 | -48.32 | -13.00 | -49.85 | -14.53 | Peak |



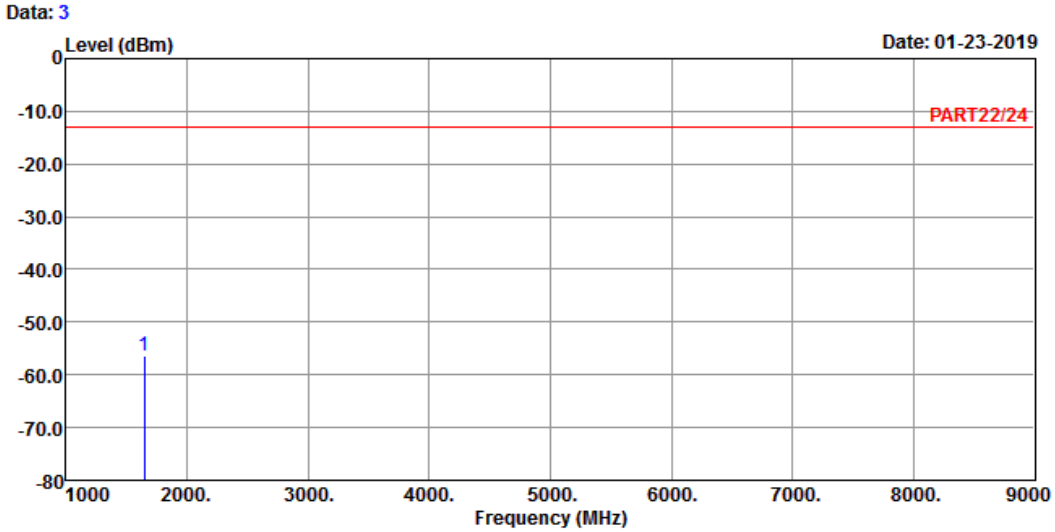

Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : GPRS 850 Link_H-CH
Tested by: Jisyong Wang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 1697.60 | -62.89 | -48.36 | -13.00 | -49.89 | -14.53 | Peak |

**EDGE:**

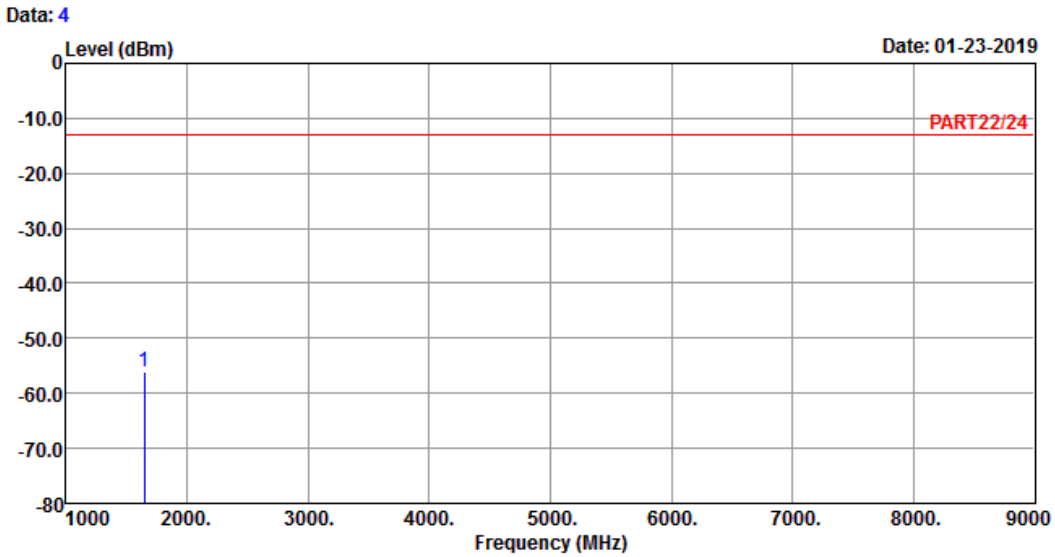
**Low Channel**

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remark : EDGE 850 Link_L-CH
Tested by: Jisyong Wang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 1648.40 | -56.25 | -41.52 | -13.00 | -43.25 | -14.73 | Peak |

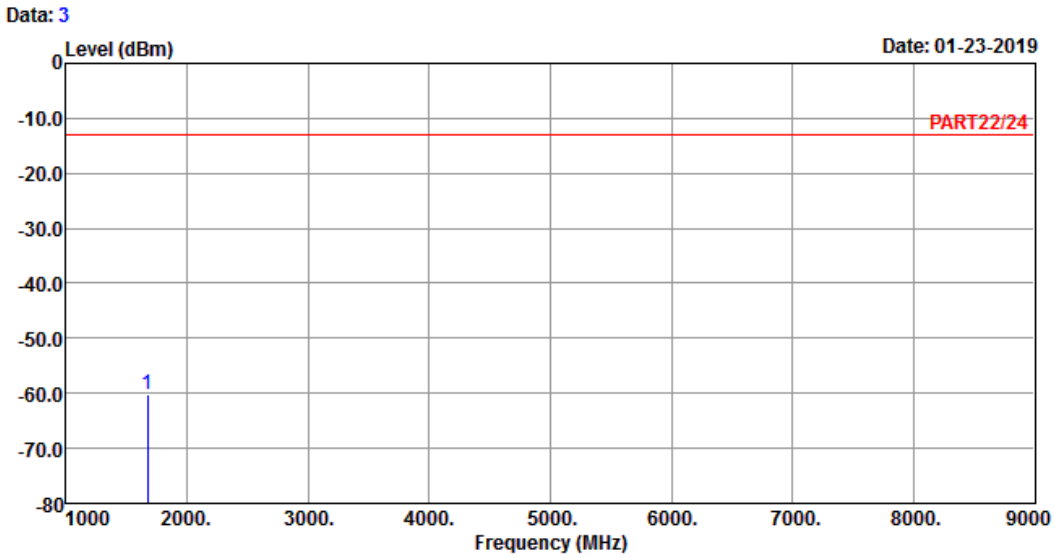



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : EDGE 850 Link_L-CH
Tested by: Jisyong Wang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 1648.40 | -55.98 | -41.25 | -13.00 | -42.98 | -14.73 | Peak |

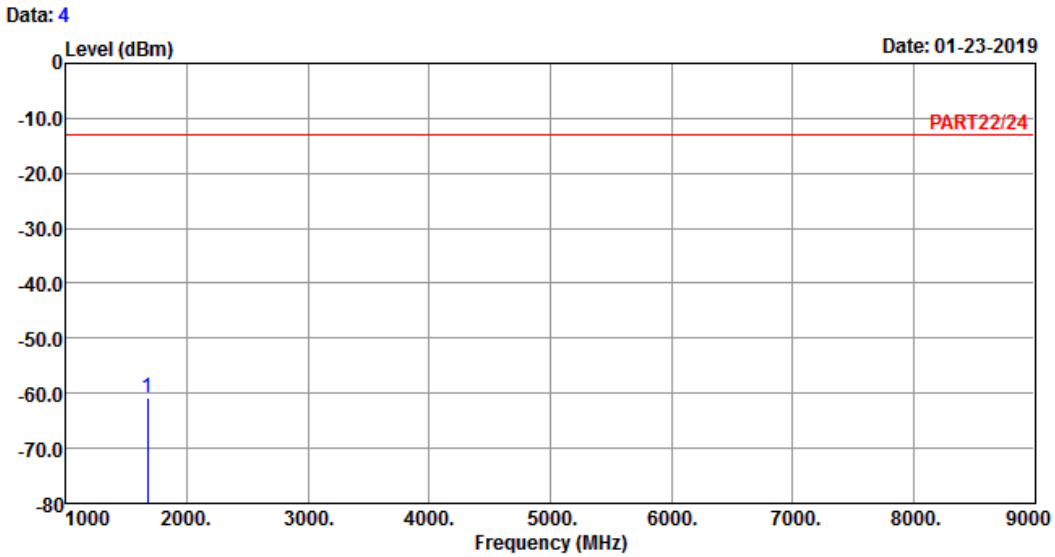
## Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : EDGE 850 Link_M-CH
Tested by: Jisyong Wang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 1672.80 | -60.12 | -45.44 | -13.00 | -47.12 | -14.68 | Peak |

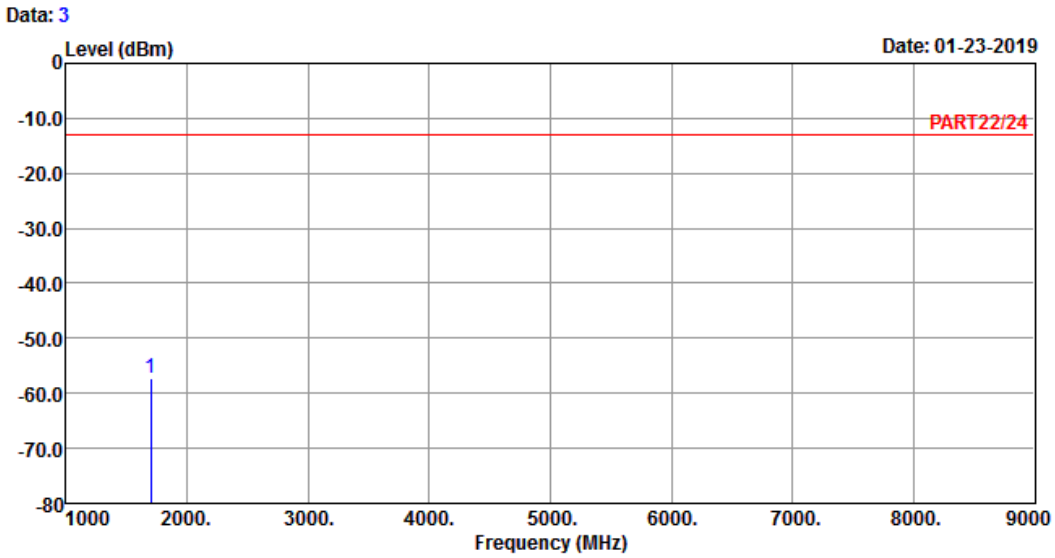



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : EDGE 850 Link_M-CH
Tested by: Jisyong Wang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 1672.80 | -60.85 | -46.17 | -13.00 | -47.85 | -14.68 | Peak |

## High Channel

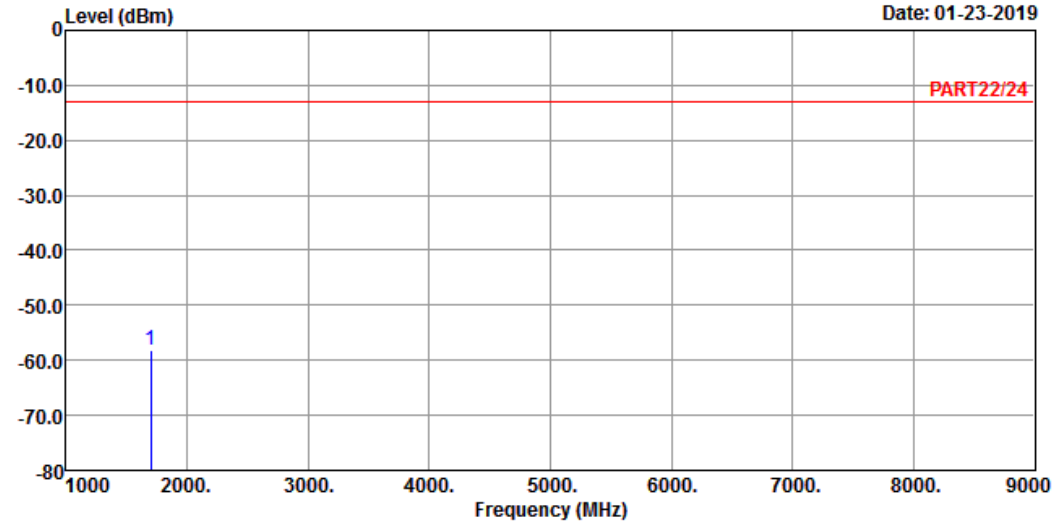
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remark : EDGE 850 Link_H-CH
Tested by: Jisyong Wang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 1697.60 | -57.35 | -42.82 | -13.00 | -44.35 | -14.53 | Peak |

Data: 4

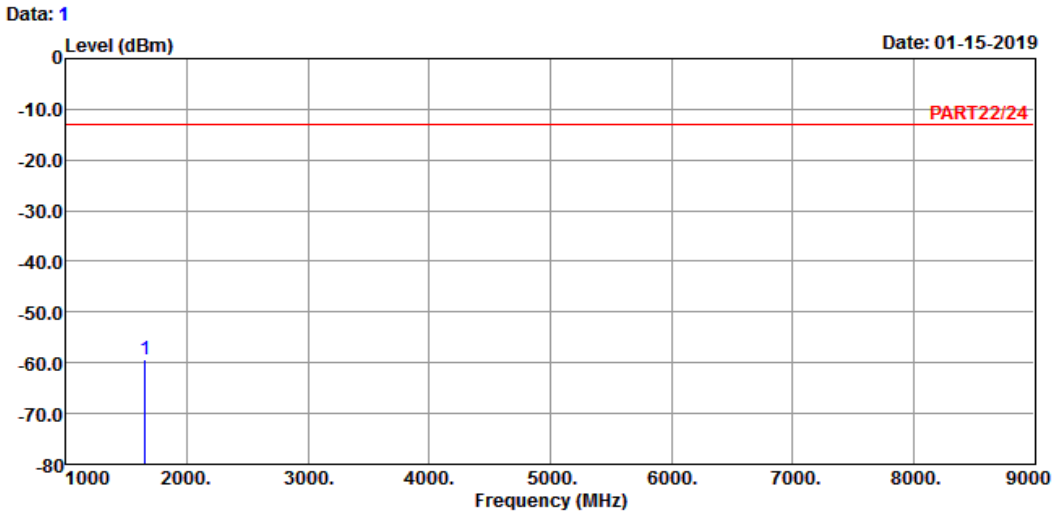



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remark : EDGE 850 Link_H-CH
Tested by: Jisyong Wang

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 1697.60 | -58.12 | -43.59 | -13.00 | -45.12 | -14.53 | Peak |

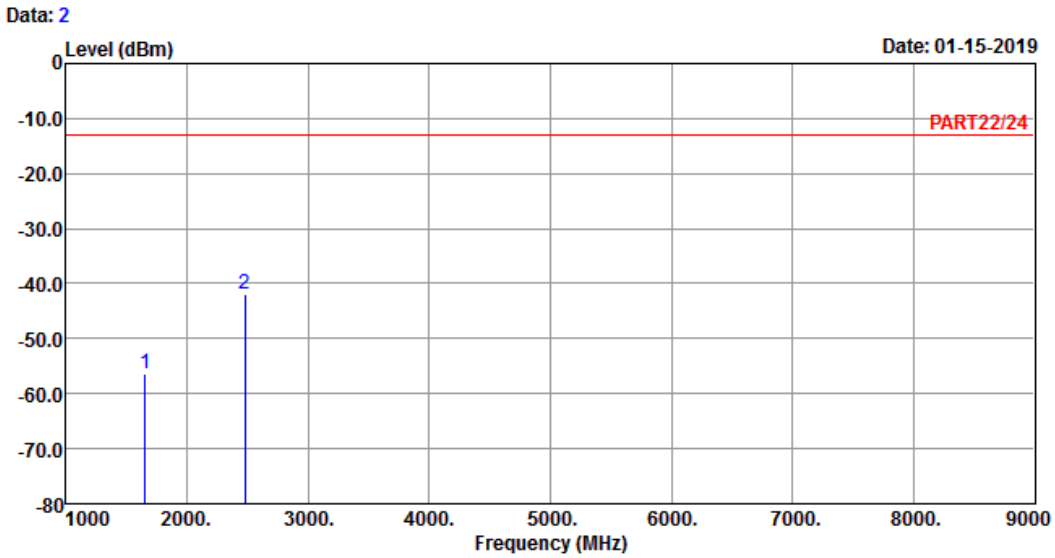
**LTE Band 5**
**Channel Bandwidth: 1.4 MHz / QPSK**
**Low Channel**






Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 5 QPSK_1.4M Link_L-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 1649.40 | -59.33 | -45.59 | -13.00 | -46.33 | -13.74 | Peak |

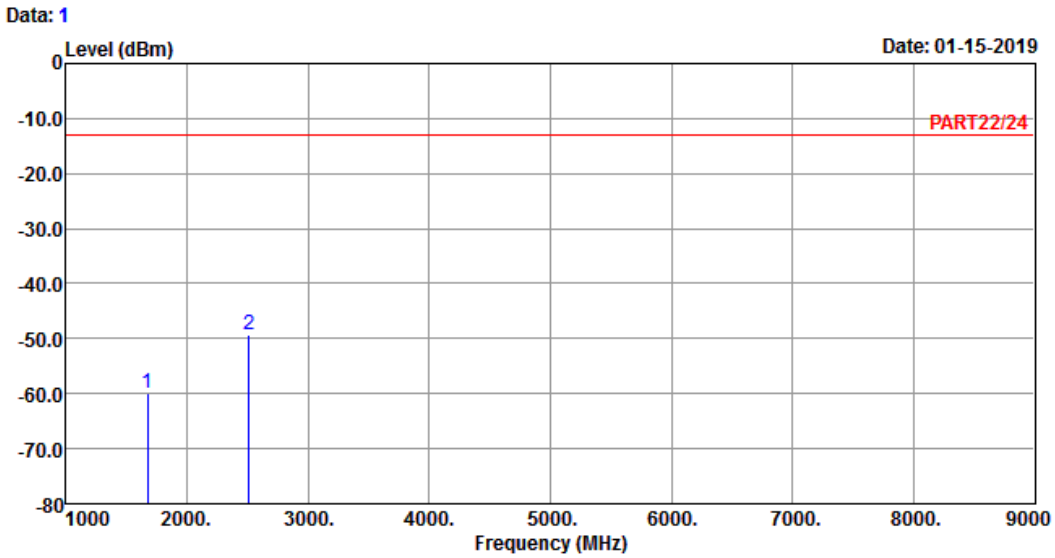



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 5 QPSK_1.4M Link_L-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1649.40 | -56.34 | -42.60 | -13.00 | -43.34 | -13.74 | Peak |
| 2 pp | 2474.10 | -42.06 | -32.04 | -13.00 | -29.06 | -10.02 | Peak |

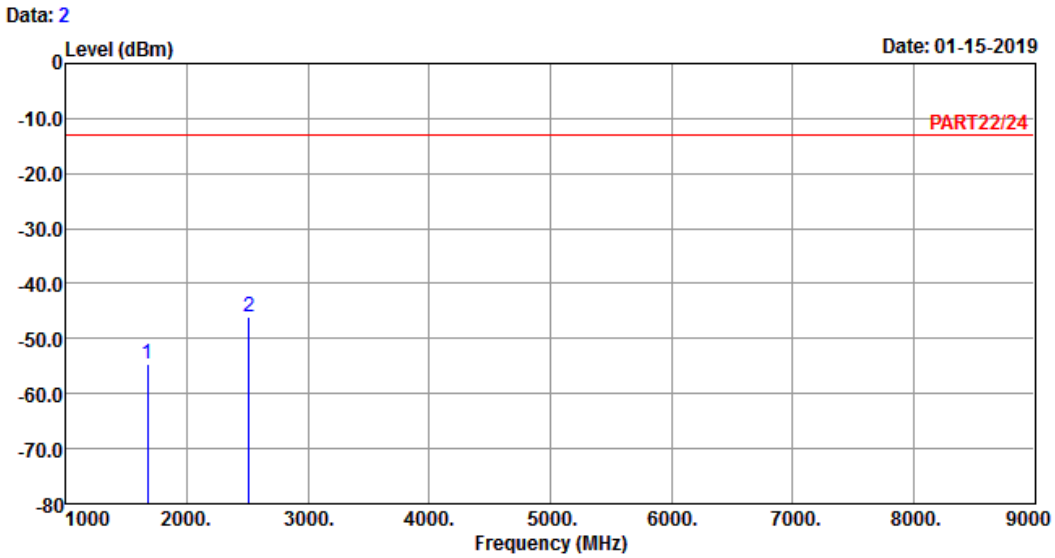
## Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 5 QPSK_1.4M Link_M-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1673.00 | -60.02 | -46.12 | -13.00 | -47.02 | -13.90 | Peak |
| 2 pp | 2509.50 | -49.22 | -39.14 | -13.00 | -36.22 | -10.08 | Peak |

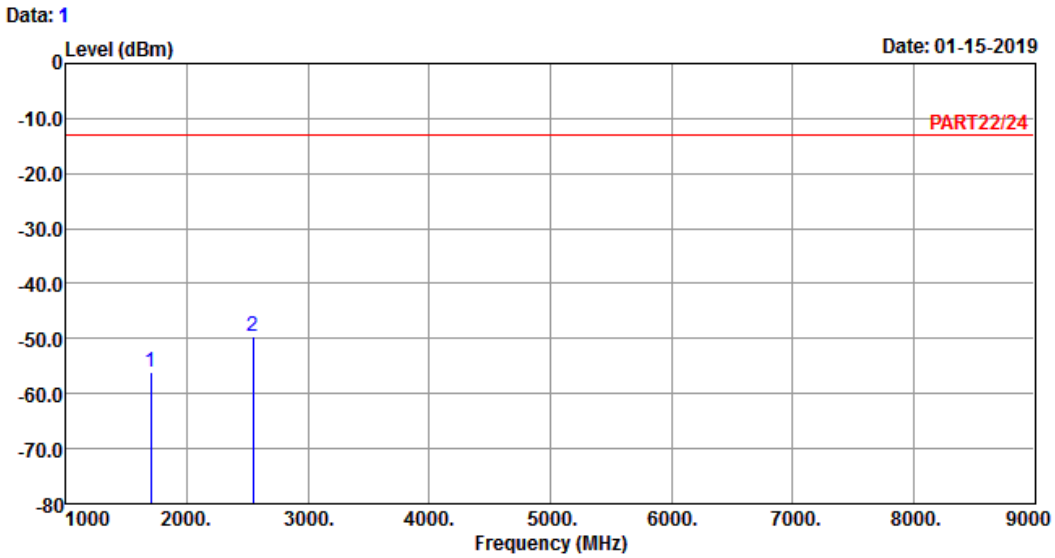



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 5 QPSK_1.4M Link_M-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1673.00 | -54.74 | -40.84 | -13.00 | -41.74 | -13.90 | Peak |
| 2 pp | 2509.50 | -45.92 | -35.84 | -13.00 | -32.92 | -10.08 | Peak |

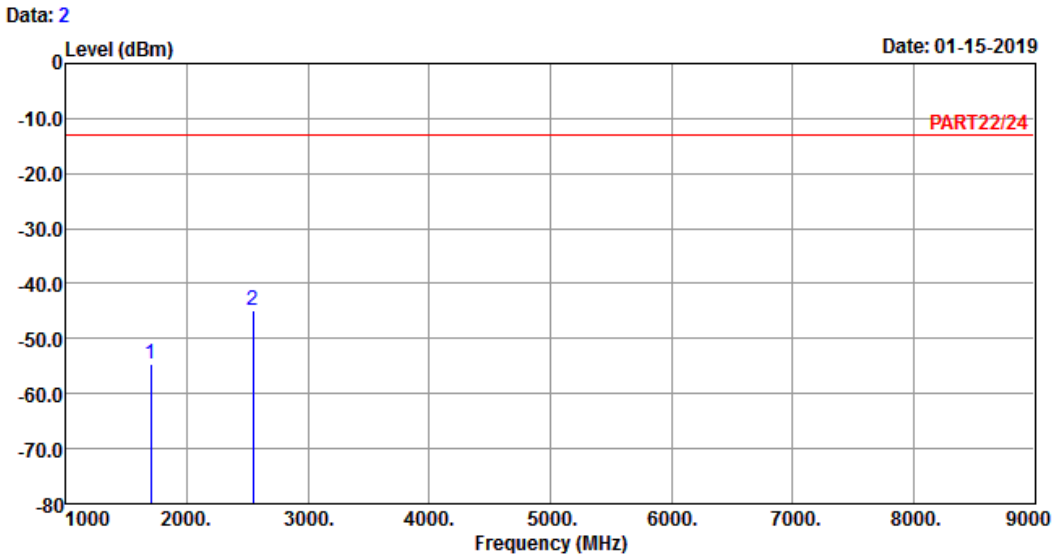
## High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 5 QPSK_1.4M Link_H-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1696.60 | -56.03 | -42.01 | -13.00 | -43.03 | -14.02 | Peak |
| 2 pp | 2544.90 | -49.61 | -39.55 | -13.00 | -36.61 | -10.06 | Peak |

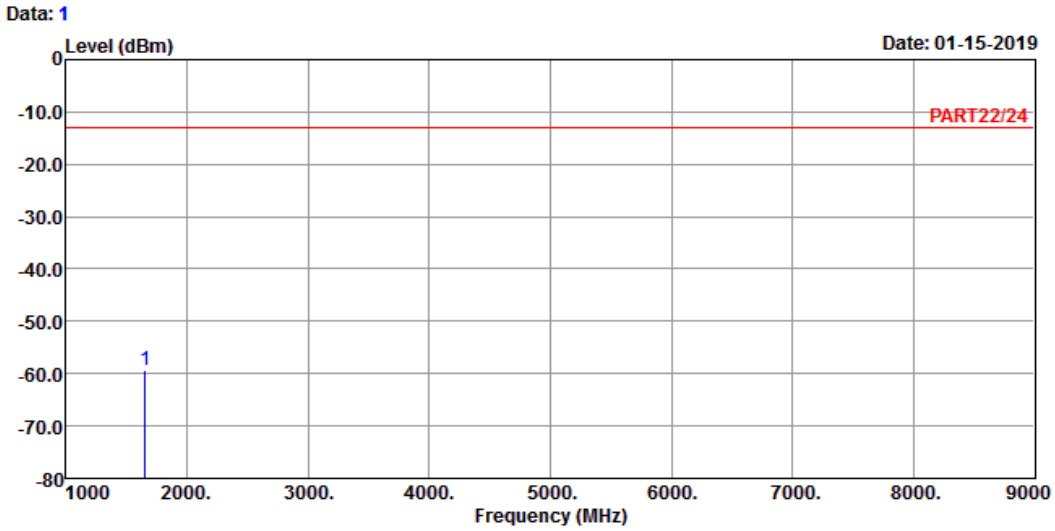



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 5 QPSK_1.4M Link_H-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1696.60 | -54.53 | -40.51 | -13.00 | -41.53 | -14.02 | Peak |
| 2 pp | 2544.90 | -44.77 | -34.71 | -13.00 | -31.77 | -10.06 | Peak |

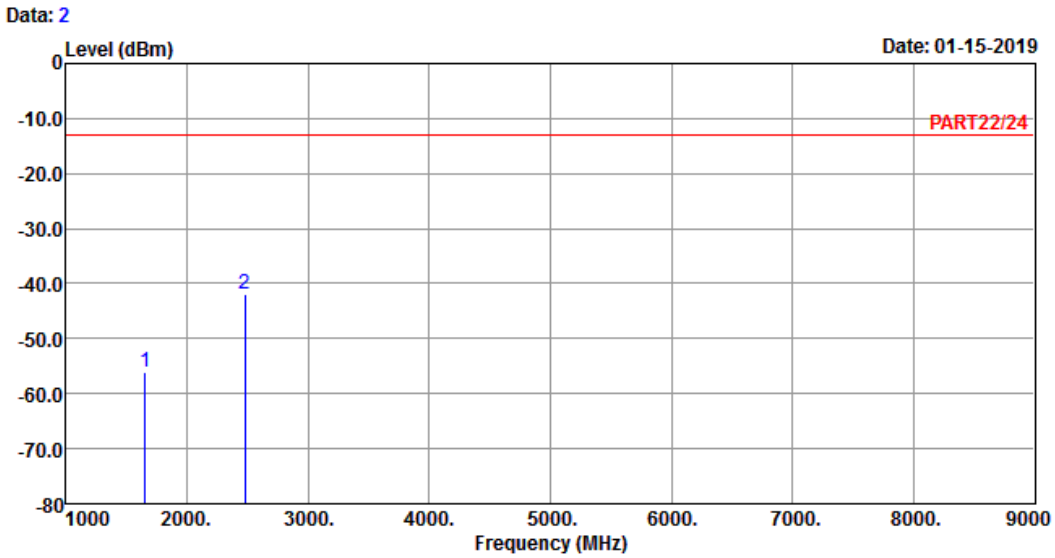
## Channel Bandwidth: 5 MHz / QPSK
## Low Channel






Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 5 QPSK_5M Link_L-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 pp | 1653.00 | -59.27 | -45.50 | -13.00 | -46.27 | -13.77 | Peak |

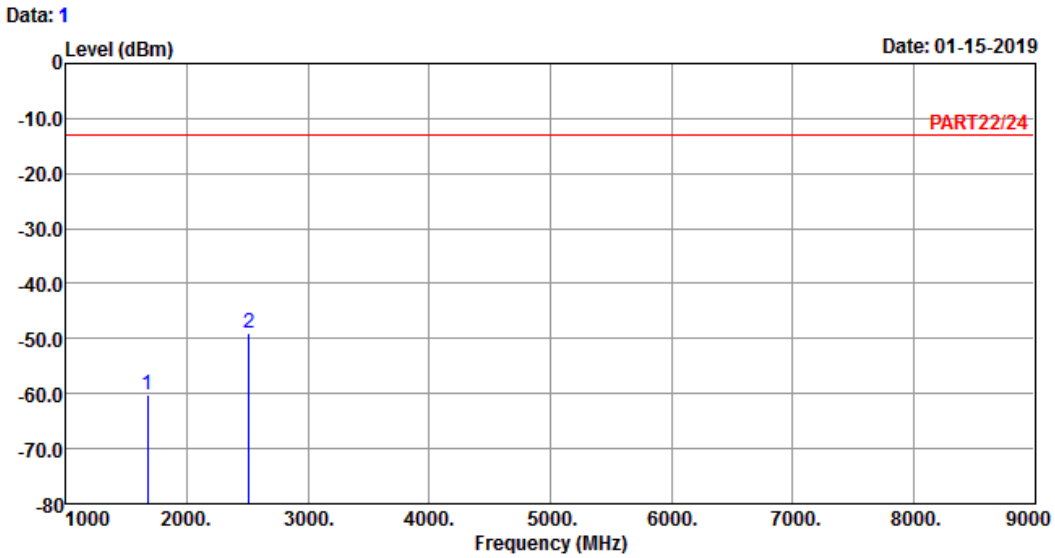



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 5 QPSK_5M Link_L-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1653.00 | -56.19 | -42.42 | -13.00 | -43.19 | -13.77 | Peak |
| 2 pp | 2479.50 | -41.88 | -31.85 | -13.00 | -28.88 | -10.03 | Peak |

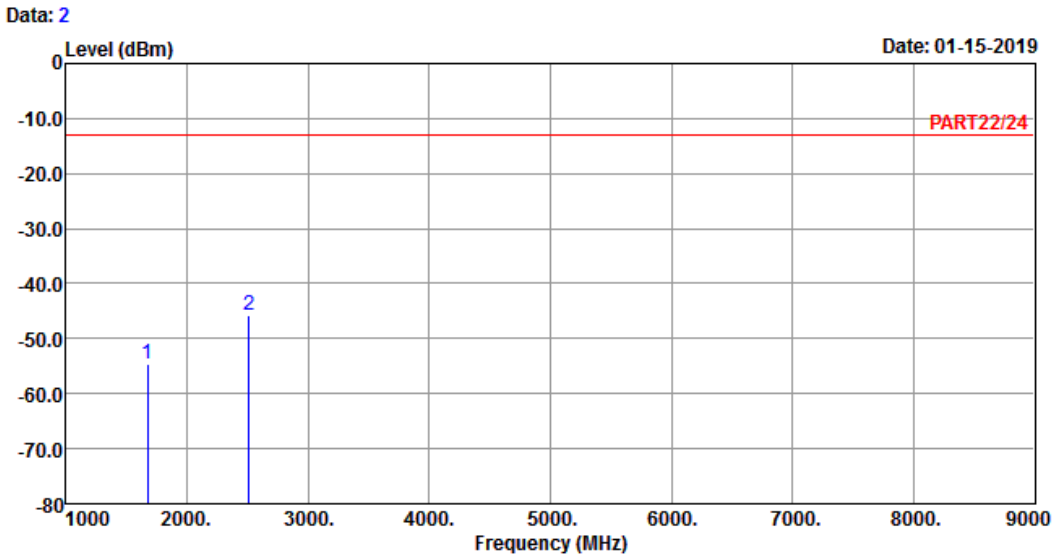
## Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 5 QPSK_5M Link_M-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1673.00 | -60.12 | -46.22 | -13.00 | -47.12 | -13.90 | Peak |
| 2 pp | 2509.50 | -49.10 | -39.02 | -13.00 | -36.10 | -10.08 | Peak |

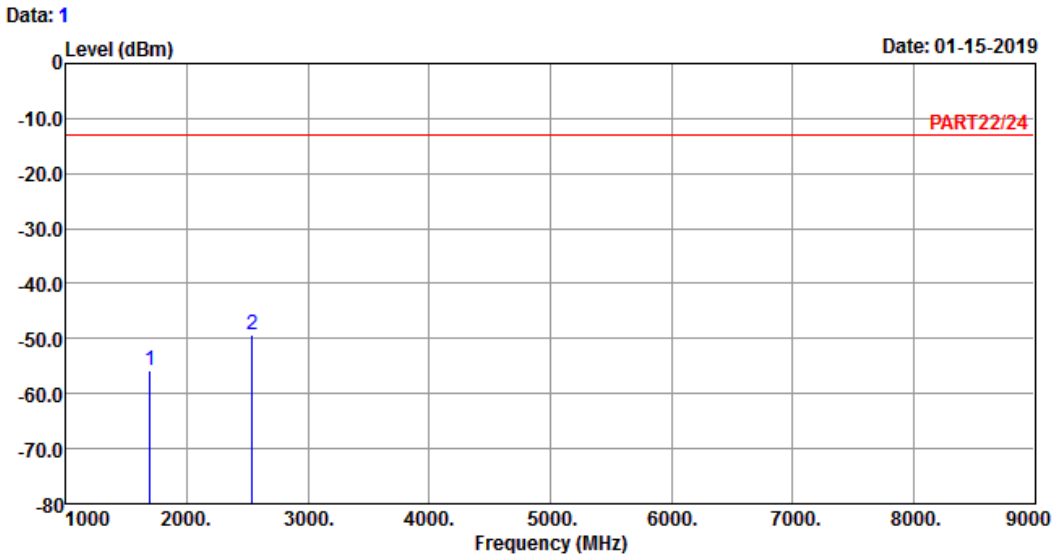



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 5 QPSK_5M Link_M-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1673.00 | -54.60 | -40.70 | -13.00 | -41.60 | -13.90 | Peak |
| 2 pp | 2509.50 | -45.78 | -35.70 | -13.00 | -32.78 | -10.08 | Peak |

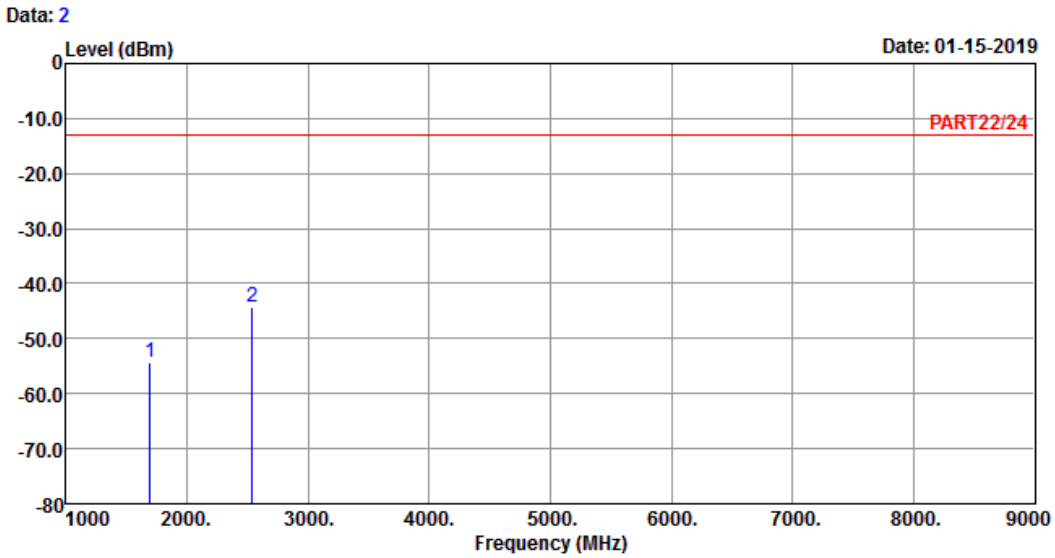
## High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 5 QPSK_5M Link_H-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1693.00 | -55.89 | -41.87 | -13.00 | -42.89 | -14.02 | Peak |
| 2 pp | 2539.50 | -49.31 | -39.25 | -13.00 | -36.31 | -10.06 | Peak |

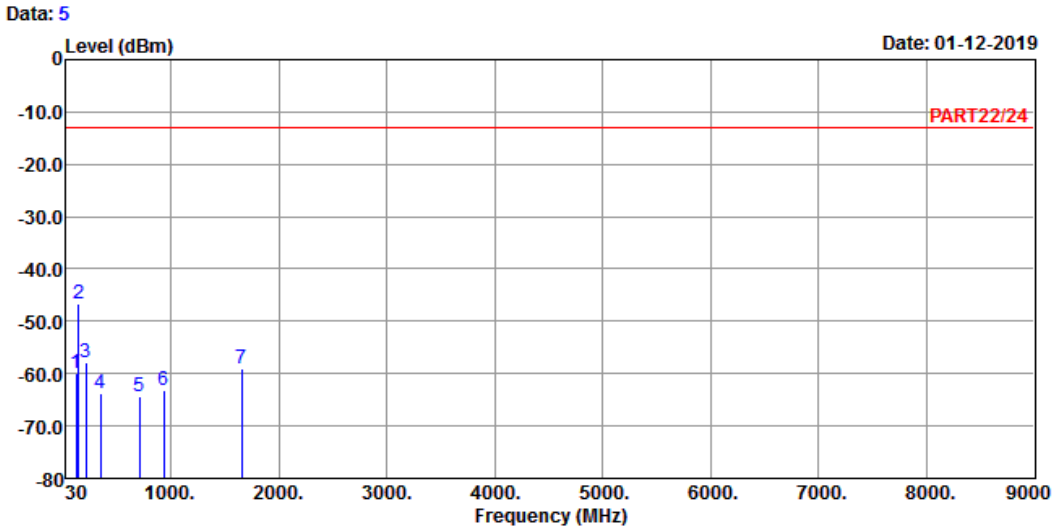



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 5 QPSK_5M Link_H-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1693.00 | -54.23 | -40.21 | -13.00 | -41.23 | -14.02 | Peak |
| 2 pp | 2539.50 | -44.38 | -34.32 | -13.00 | -31.38 | -10.06 | Peak |

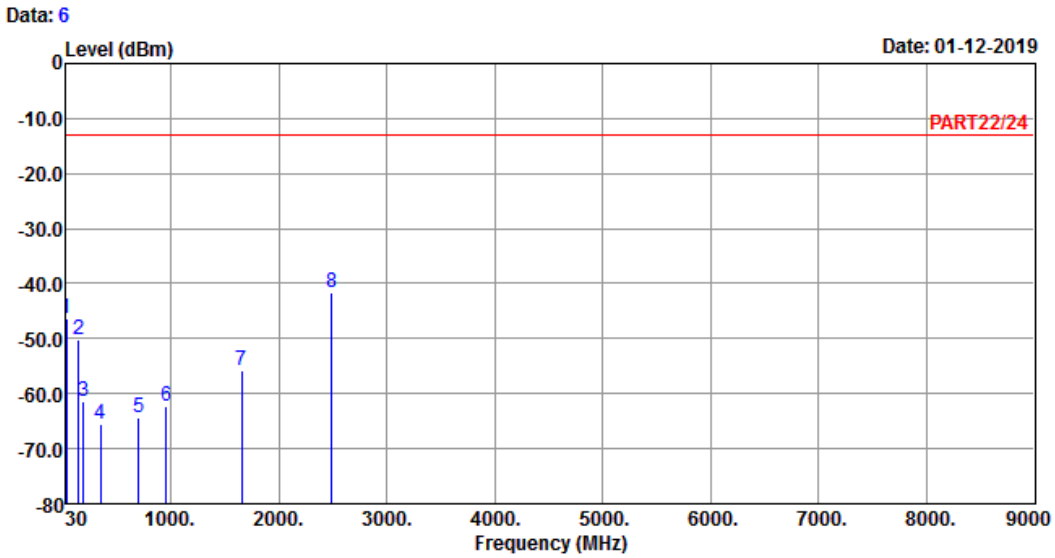
## Channel Bandwidth: 10 MHz / QPSK
## Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 5 QPSK_10M Link_L-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 119.24 | -59.85 | -49.96 | -13.00 | -46.85 | -9.89 | Peak |
| 2 pp | 148.34 | -46.68 | -38.91 | -13.00 | -33.68 | -7.77 | Peak |
| 3 | 213.33 | -57.91 | -50.44 | -13.00 | -44.91 | -7.47 | Peak |
| 4 | 346.22 | -63.66 | -57.36 | -13.00 | -50.66 | -6.30 | Peak |
| 5 | 708.03 | -64.37 | -64.42 | -13.00 | -51.37 | 0.05 | Peak |
| 6 | 935.01 | -63.09 | -64.53 | -13.00 | -50.09 | 1.44 | Peak |
| 7 | 1658.00 | -58.92 | -45.12 | -13.00 | -45.92 | -13.80 | Peak |

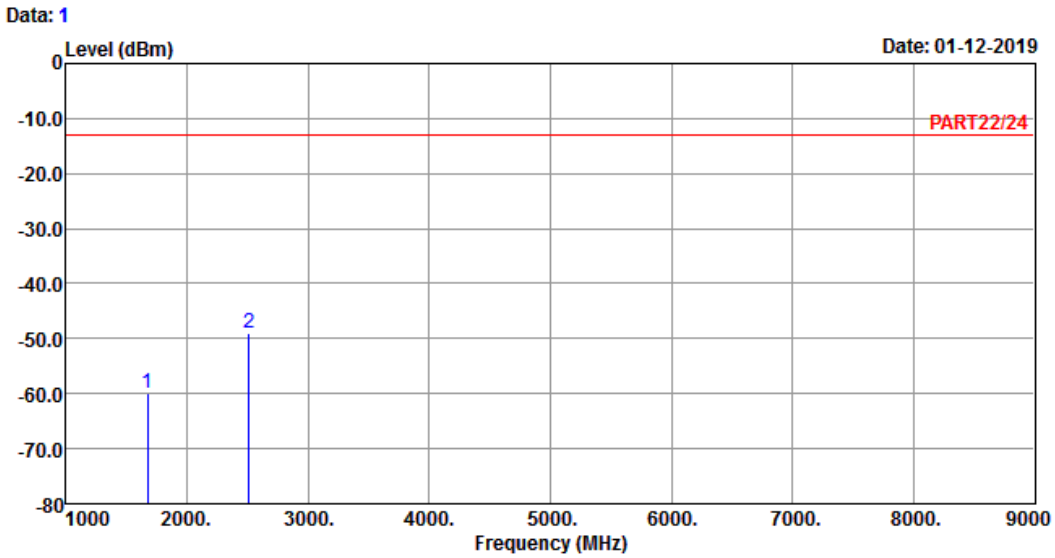



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 5 QPSK_10M Link_L-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 30.00 | -46.21 | -46.59 | -13.00 | -33.21 | 0.38 | Peak |
| 2 | 144.46 | -50.26 | -42.10 | -13.00 | -37.26 | -8.16 | Peak |
| 3 | 189.08 | -61.39 | -54.27 | -13.00 | -48.39 | -7.12 | Peak |
| 4 | 345.25 | -65.51 | -59.20 | -13.00 | -52.51 | -6.31 | Peak |
| 5 | 702.21 | -64.22 | -64.16 | -13.00 | -51.22 | -0.06 | Peak |
| 6 | 959.26 | -62.28 | -64.42 | -13.00 | -49.28 | 2.14 | Peak |
| 7 | 1658.00 | -55.86 | -42.06 | -13.00 | -42.86 | -13.80 | Peak |
| 8 pp | 2487.00 | -41.58 | -31.53 | -13.00 | -28.58 | -10.05 | Peak |

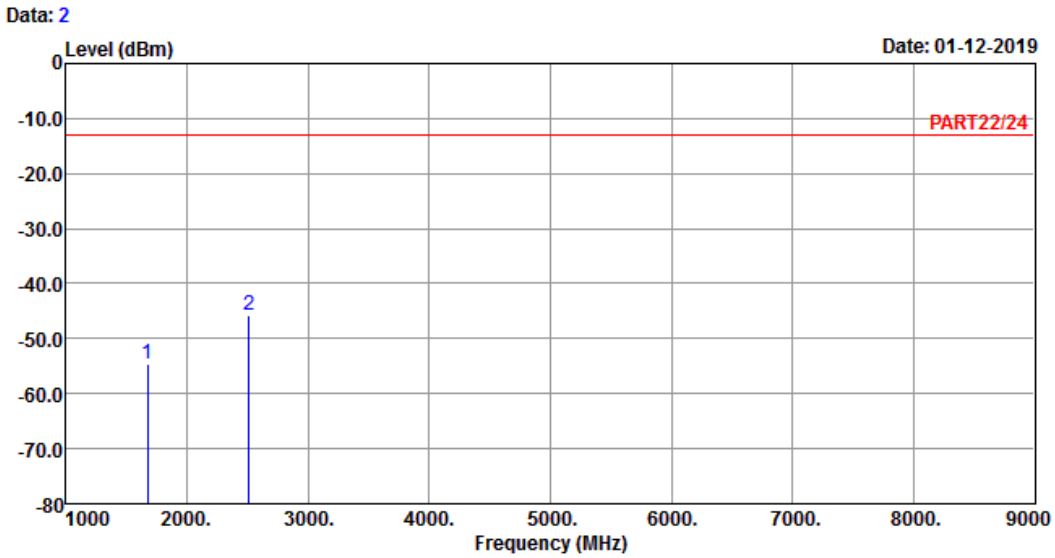
## Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 5 QPSK_10M Link_M-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1673.00 | -59.93 | -46.03 | -13.00 | -46.93 | -13.90 | Peak |
| 2 pp | 2509.50 | -48.96 | -38.88 | -13.00 | -35.96 | -10.08 | Peak |

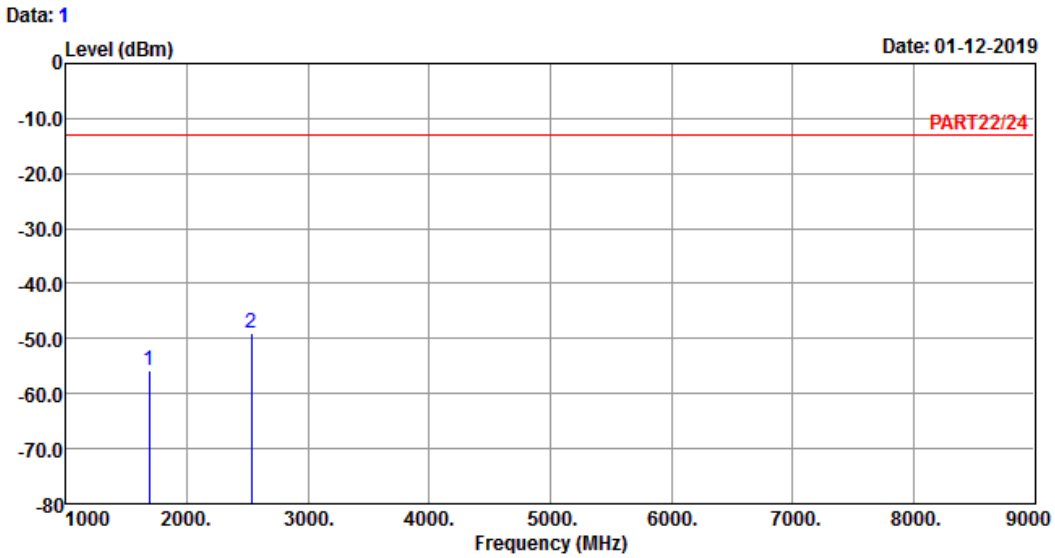



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 5 QPSK_10M Link_M-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1673.00 | -54.48 | -40.58 | -13.00 | -41.48 | -13.90 | Peak |
| 2 pp | 2509.50 | -45.67 | -35.59 | -13.00 | -32.67 | -10.08 | Peak |

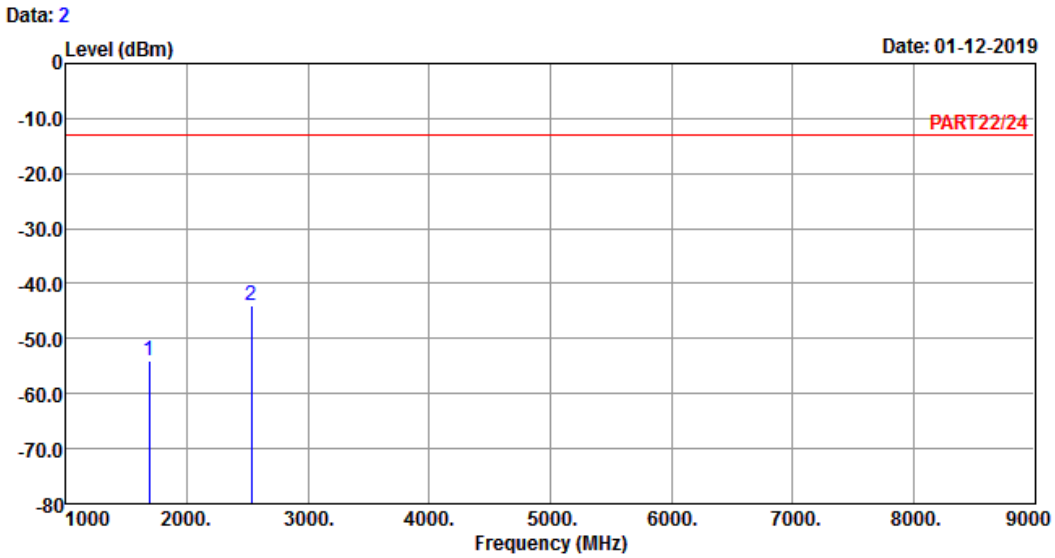
## High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 5 QPSK_10M Link_H-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1688.00 | -55.69 | -41.70 | -13.00 | -42.69 | -13.99 | Peak |
| 2 pp | 2532.00 | -48.96 | -38.89 | -13.00 | -35.96 | -10.07 | Peak |

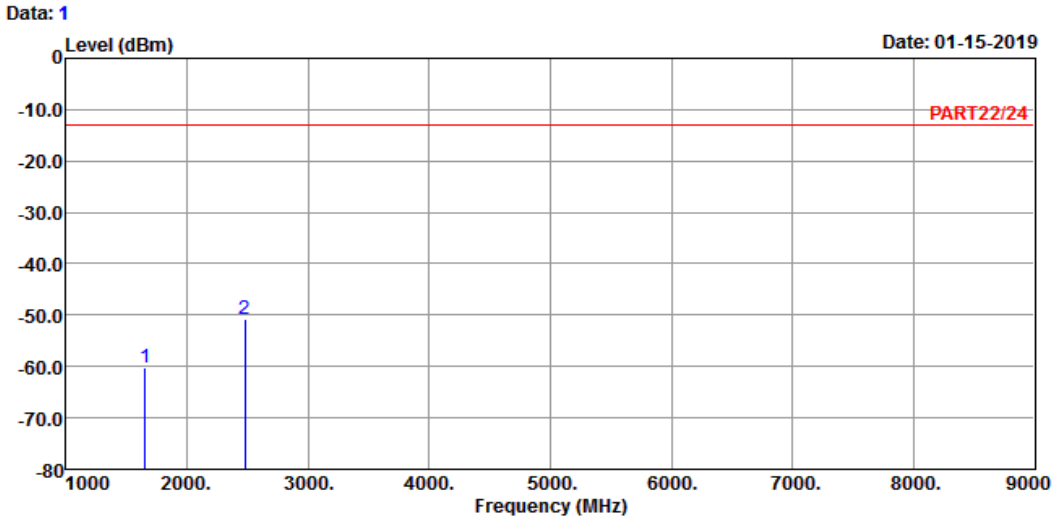



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 5 QPSK_10M Link_H-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1688.00 | -53.99 | -40.00 | -13.00 | -40.99 | -13.99 | Peak |
| 2 pp | 2532.00 | -44.11 | -34.04 | -13.00 | -31.11 | -10.07 | Peak |

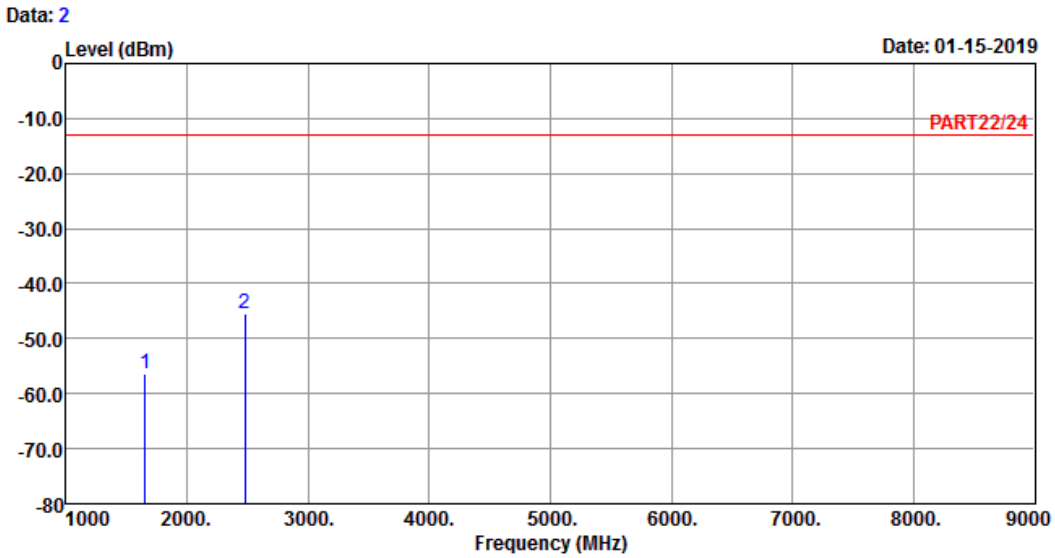
**LTE Band 26**
**Channel Bandwidth: 1.4 MHz / QPSK**
**Low Channel**






Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 26 QPSK_1.4M Link_L-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1649.40 | -60.11 | -46.37 | -13.00 | -47.11 | -13.74 | Peak |
| 2 pp | 2474.10 | -50.83 | -40.81 | -13.00 | -37.83 | -10.02 | Peak |

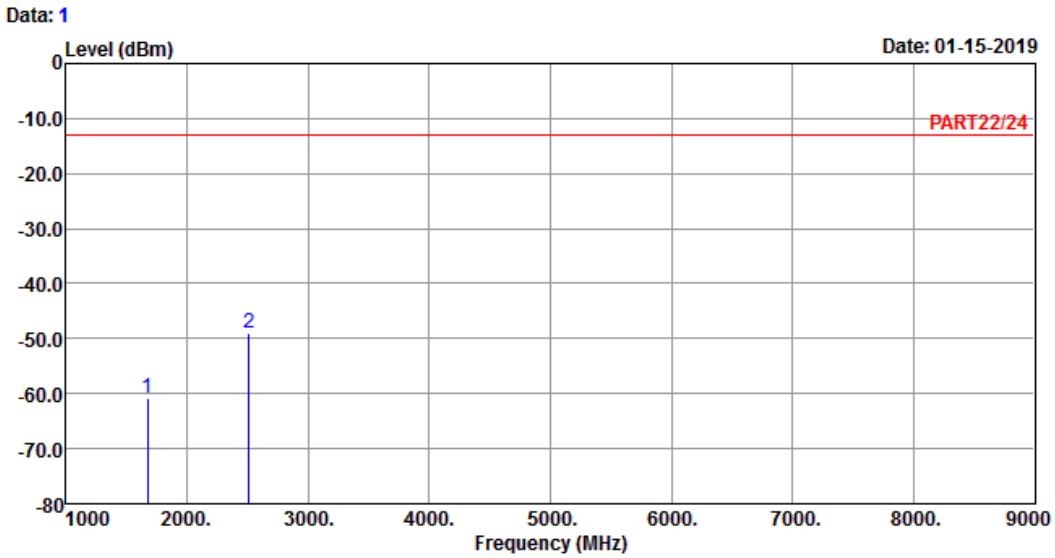



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 26 QPSK_1.4M Link_L-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1649.40 | -56.38 | -42.64 | -13.00 | -43.38 | -13.74 | Peak |
| 2 pp | 2474.10 | -45.39 | -35.37 | -13.00 | -32.39 | -10.02 | Peak |

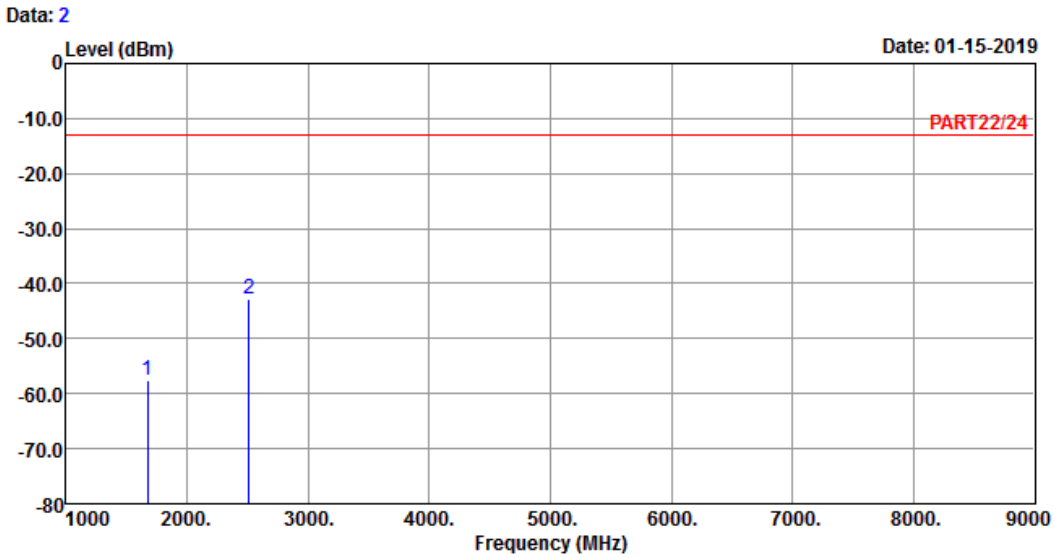
## Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 26 QPSK_1.4M Link_M-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1673.00 | -60.68 | -46.78 | -13.00 | -47.68 | -13.90 | Peak |
| 2 pp | 2509.50 | -48.89 | -38.81 | -13.00 | -35.89 | -10.08 | Peak |

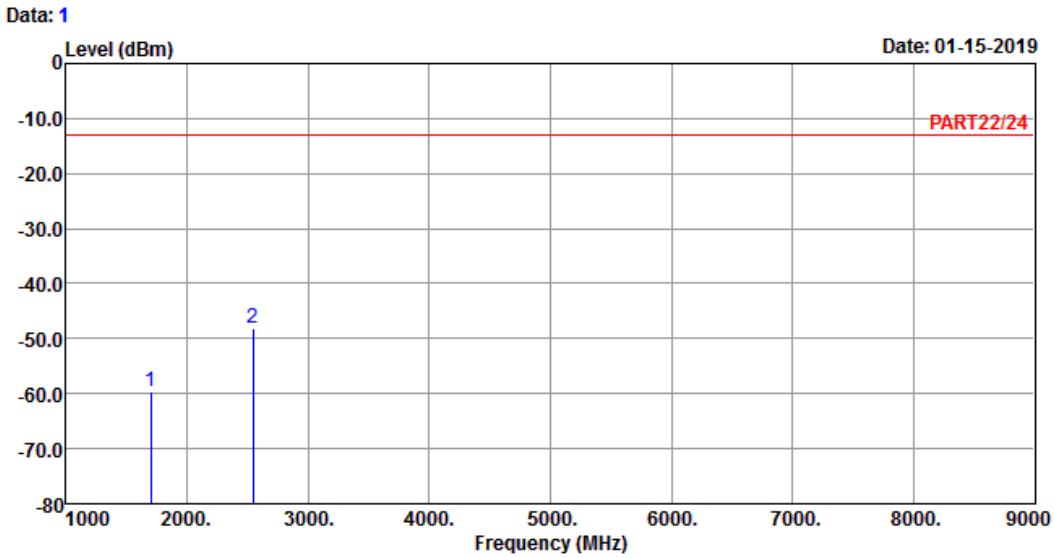



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 26 QPSK_1.4M Link_M-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1673.00 | -57.46 | -43.56 | -13.00 | -44.46 | -13.90 | Peak |
| 2 pp | 2509.50 | -42.94 | -32.86 | -13.00 | -29.94 | -10.08 | Peak |

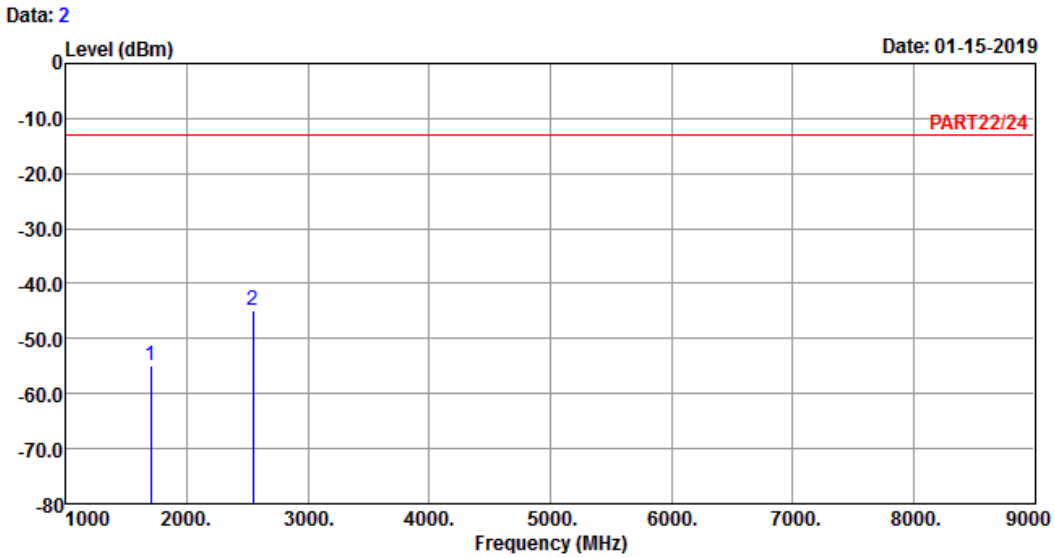
## High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 26 QPSK_1.4M Link_H-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1696.60 | -59.67 | -45.65 | -13.00 | -46.67 | -14.02 | Peak |
| 2 pp | 2544.90 | -47.98 | -37.92 | -13.00 | -34.98 | -10.06 | Peak |

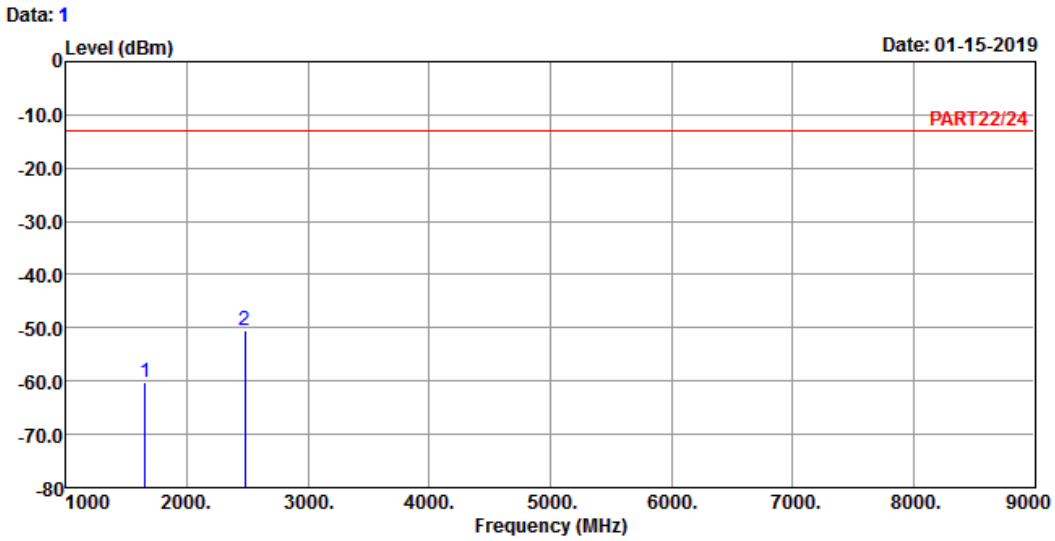



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 26 QPSK_1.4M Link_H-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1696.60 | -54.81 | -40.79 | -13.00 | -41.81 | -14.02 | Peak |
| 2 pp | 2544.90 | -44.79 | -34.73 | -13.00 | -31.79 | -10.06 | Peak |

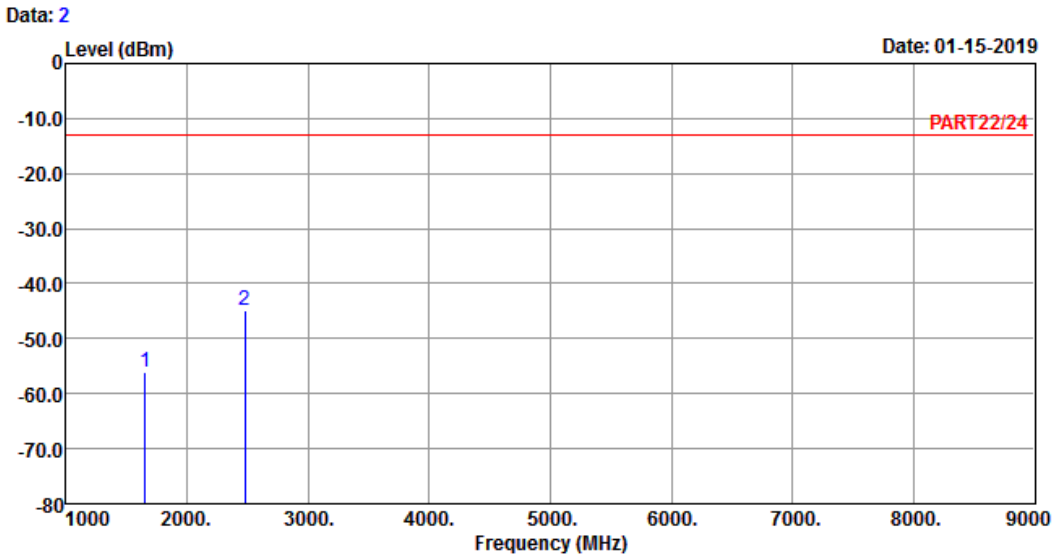
## Channel Bandwidth: 5 MHz / QPSK
## Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 26 QPSK_5M Link_L-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1653.00 | -60.17 | -46.40 | -13.00 | -47.17 | -13.77 | Peak |
| 2 pp | 2479.50 | -50.55 | -40.52 | -13.00 | -37.55 | -10.03 | Peak |

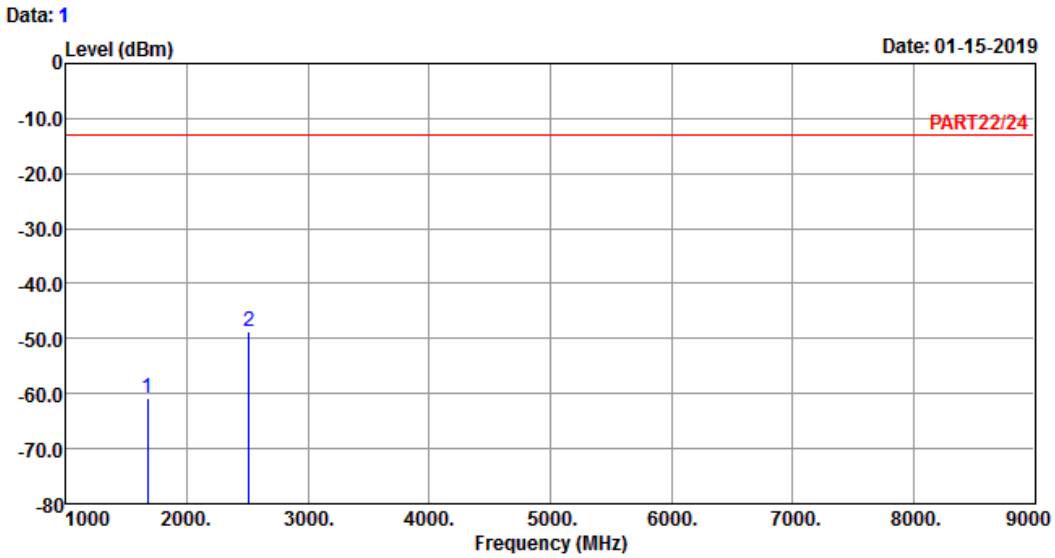



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 26 QPSK_5M Link_L-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1653.00 | -56.12 | -42.35 | -13.00 | -43.12 | -13.77 | Peak |
| 2 pp | 2479.50 | -45.00 | -34.97 | -13.00 | -32.00 | -10.03 | Peak |

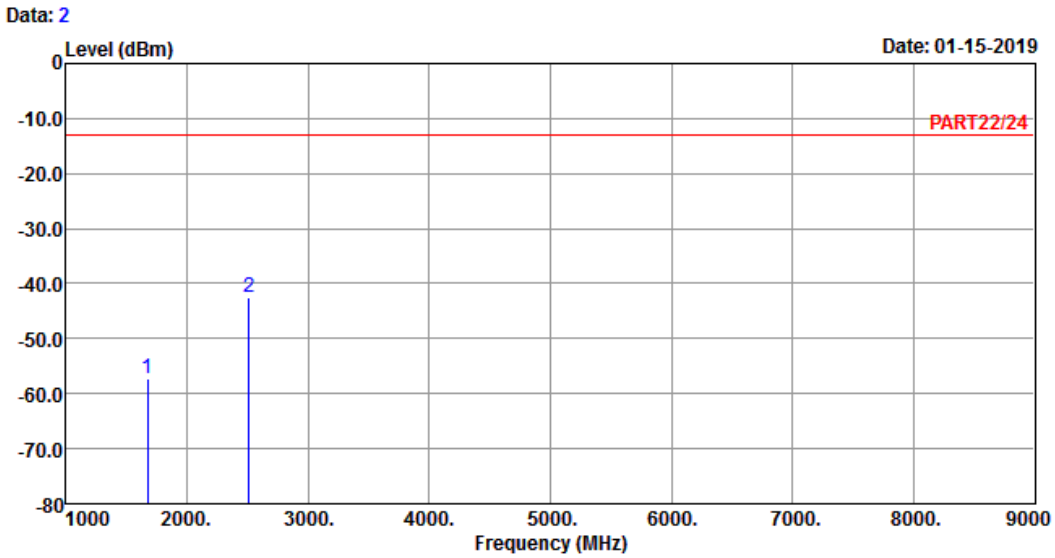
## Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 26 QPSK_5M Link_M-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1673.00 | -60.77 | -46.87 | -13.00 | -47.77 | -13.90 | Peak |
| 2 pp | 2509.50 | -48.58 | -38.50 | -13.00 | -35.58 | -10.08 | Peak |

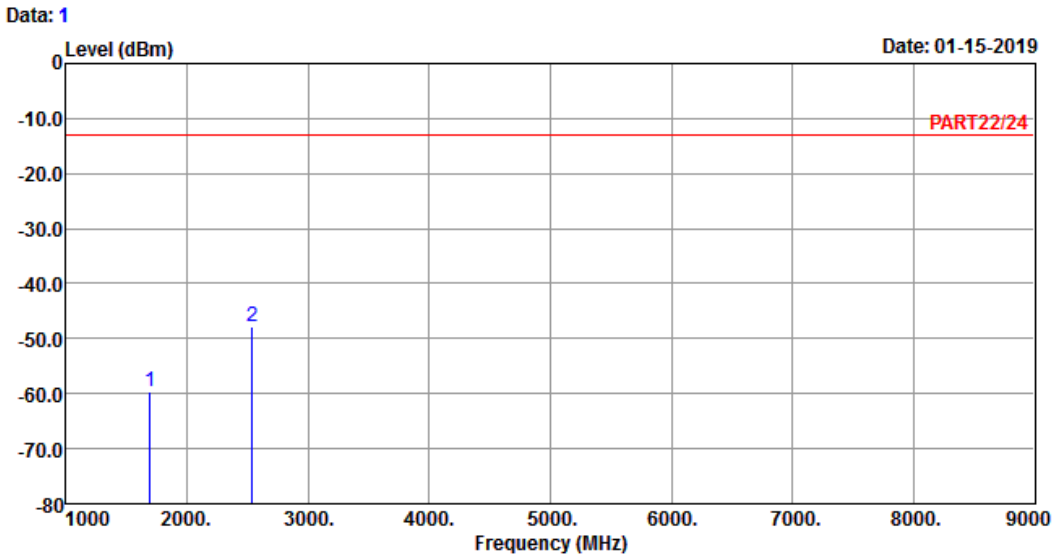



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 26 QPSK_5M Link_M-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1673.00 | -57.27 | -43.37 | -13.00 | -44.27 | -13.90 | Peak |
| 2 pp | 2509.50 | -42.61 | -32.53 | -13.00 | -29.61 | -10.08 | Peak |

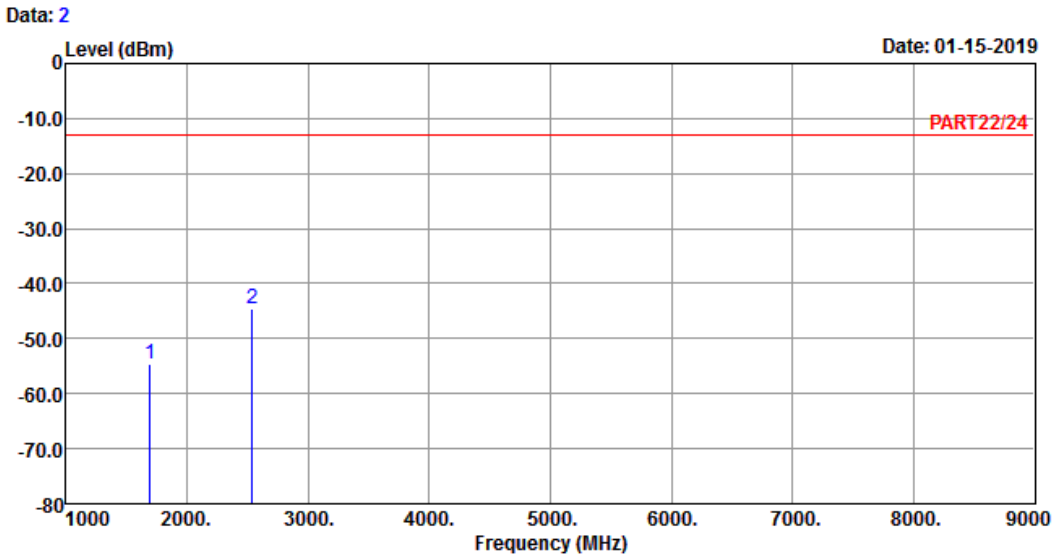
## High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 26 QPSK_5M Link_H-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1693.00 | -59.52 | -45.50 | -13.00 | -46.52 | -14.02 | Peak |
| 2 pp | 2539.50 | -47.77 | -37.71 | -13.00 | -34.77 | -10.06 | Peak |

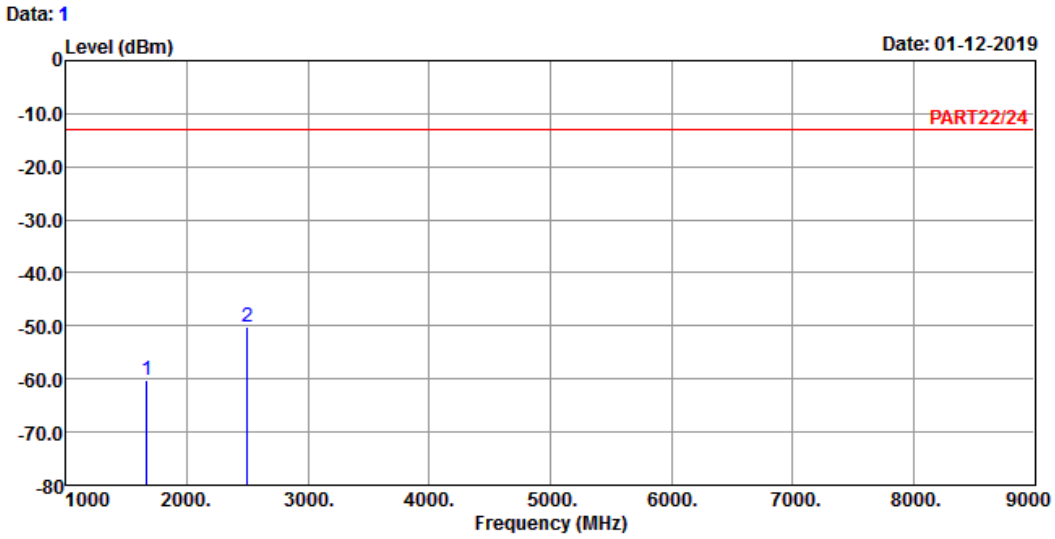



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 26 QPSK_5M Link_H-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1693.00 | -54.47 | -40.45 | -13.00 | -41.47 | -14.02 | Peak |
| 2 pp | 2539.50 | -44.45 | -34.39 | -13.00 | -31.45 | -10.06 | Peak |

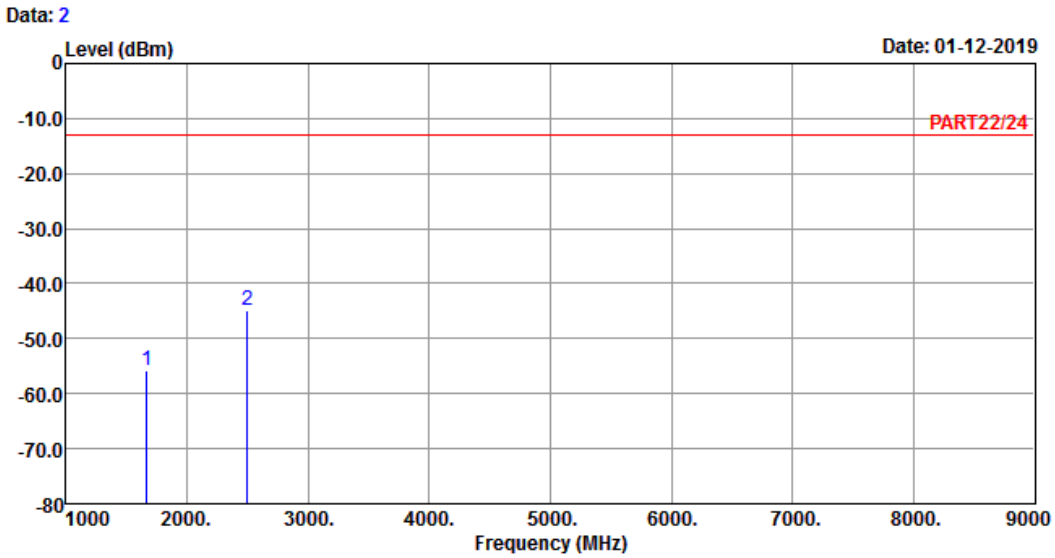
## Channel Bandwidth: 15 MHz / QPSK
## Low Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 26 QPSK_15M Link_L-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1663.00 | -60.08 | -46.25 | -13.00 | -47.08 | -13.83 | Peak |
| 2 pp | 2494.50 | -50.29 | -40.23 | -13.00 | -37.29 | -10.06 | Peak |

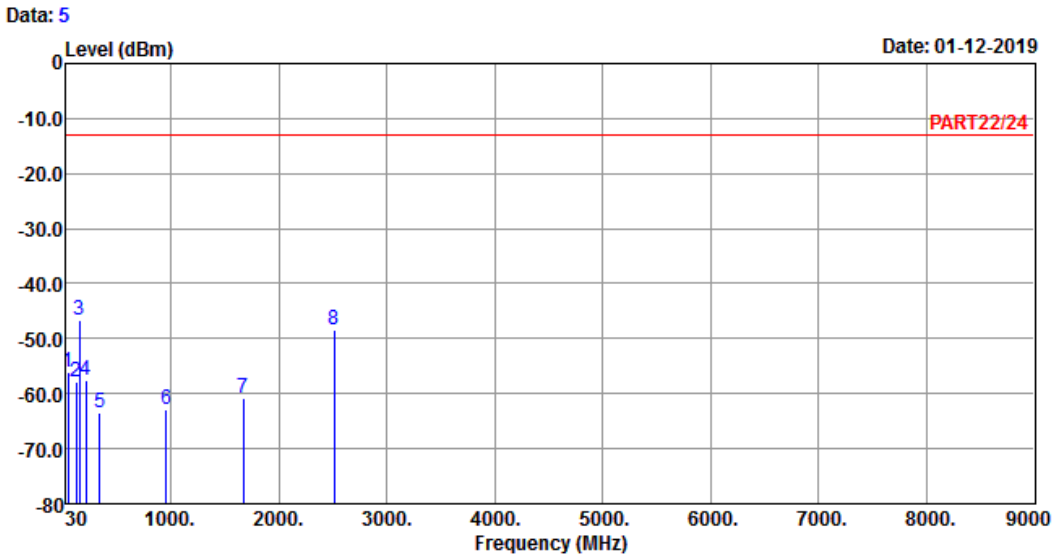



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 26 QPSK_15M Link_L-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1663.00 | -55.84 | -42.01 | -13.00 | -42.84 | -13.83 | Peak |
| 2 pp | 2494.50 | -44.74 | -34.68 | -13.00 | -31.74 | -10.06 | Peak |

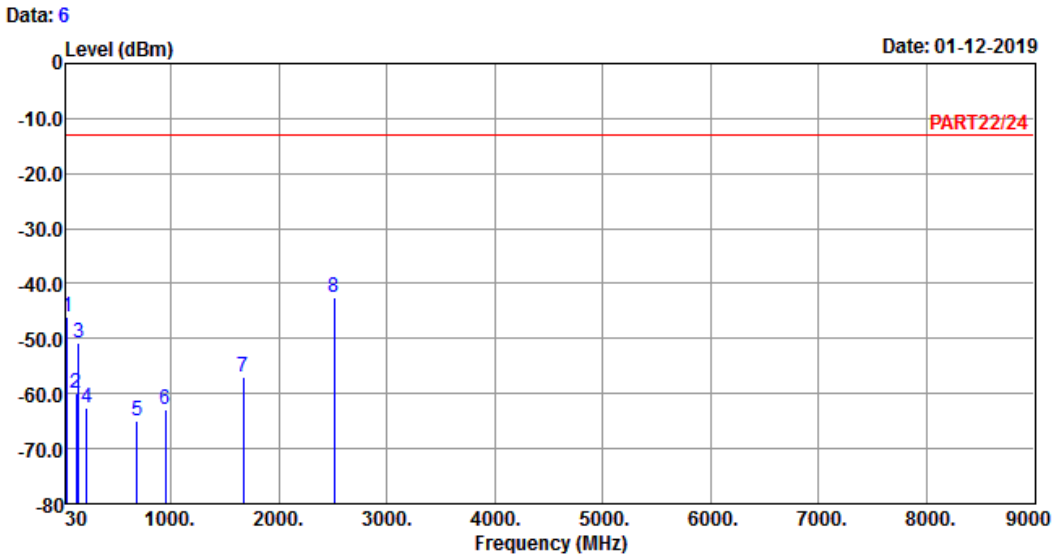
## Middle Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 26 QPSK_15M Link_M-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 44.55 | -56.02 | -54.03 | -13.00 | -43.02 | -1.99 | Peak |
| 2 | 122.15 | -57.83 | -48.21 | -13.00 | -44.83 | -9.62 | Peak |
| 3 pp | 153.19 | -46.72 | -39.96 | -13.00 | -33.72 | -6.76 | Peak |
| 4 | 212.36 | -57.58 | -50.07 | -13.00 | -44.58 | -7.51 | Peak |
| 5 | 343.31 | -63.54 | -57.20 | -13.00 | -50.54 | -6.34 | Peak |
| 6 | 956.35 | -63.01 | -65.05 | -13.00 | -50.01 | 2.04 | Peak |
| 7 | 1673.00 | -60.80 | -46.90 | -13.00 | -47.80 | -13.90 | Peak |
| 8 | 2509.50 | -48.39 | -38.31 | -13.00 | -35.39 | -10.08 | Peak |

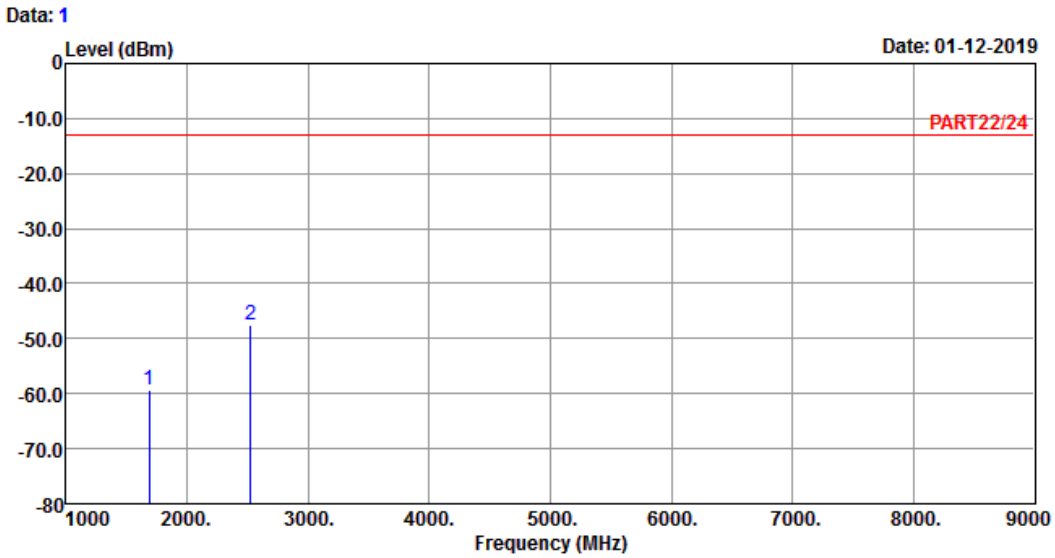



Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 26 QPSK_15M Link_M-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 41.64 | -46.00 | -45.59 | -13.00 | -33.00 | -0.41 | Peak |
| 2 | 124.09 | -59.79 | -50.40 | -13.00 | -46.79 | -9.39 | Peak |
| 3 | 145.43 | -50.70 | -42.63 | -13.00 | -37.70 | -8.07 | Peak |
| 4 | 221.09 | -62.71 | -55.55 | -13.00 | -49.71 | -7.16 | Peak |
| 5 | 682.81 | -65.03 | -64.66 | -13.00 | -52.03 | -0.37 | Peak |
| 6 | 946.65 | -62.92 | -64.65 | -13.00 | -49.92 | 1.73 | Peak |
| 7 | 1673.00 | -57.06 | -43.16 | -13.00 | -44.06 | -13.90 | Peak |
| 8 pp | 2509.50 | -42.37 | -32.29 | -13.00 | -29.37 | -10.08 | Peak |

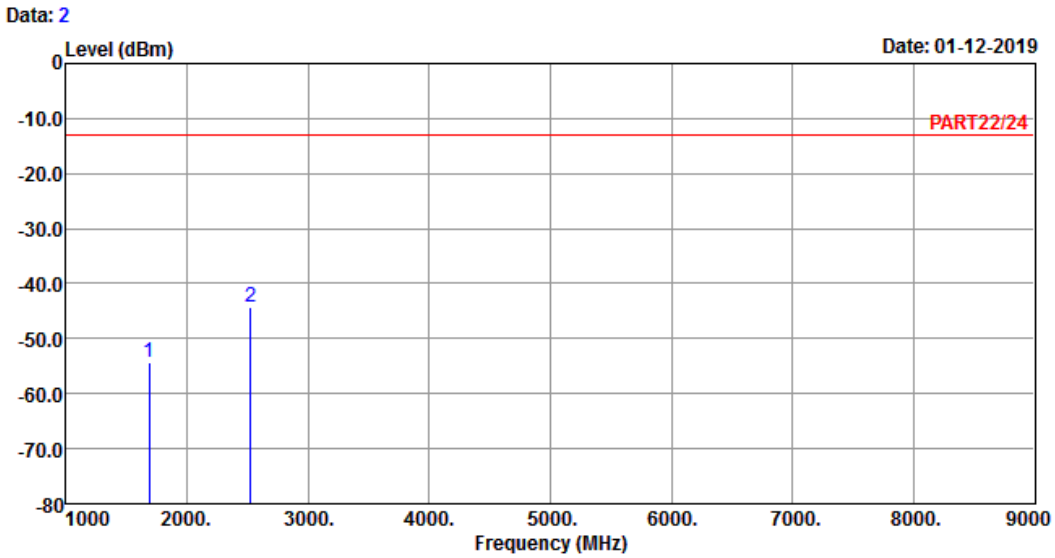
## High Channel

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch




Site : 966 Chamber 5
Condition: PART22/24 HORIZONTAL
Remak : Cat-M1 Band 26 QPSK_15M Link_H-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1683.00 | -59.45 | -45.49 | -13.00 | -46.45 | -13.96 | Peak |
| 2 pp | 2524.50 | -47.53 | -37.46 | -13.00 | -34.53 | -10.07 | Peak |




Site : 966 Chamber 5
Condition: PART22/24 VERTICAL
Remak : Cat-M1 Band 26 QPSK_15M Link_H-CH
Tested by: Thomas Wei

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBm | dBm | dBm | dB | dB | |
| 1 | 1683.00 | -54.23 | -40.27 | -13.00 | -41.23 | -13.96 | Peak |
| 2 pp | 2524.50 | -44.17 | -34.10 | -13.00 | -31.17 | -10.07 | Peak |

## 5 Pictures of Test Arrangements

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

**Appendix – Information of the Testing Laboratories**

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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


**Linko EMC/RF Lab**
Tel: 886-2-26052180
Fax: 886-2-26051924

**Hsin Chu EMC/RF/Telecom Lab**
Tel: 886-3-6668565
Fax: 886-3-6668323

**Hwa Ya EMC/RF/Safety**
Tel: 886-3-3183232
Fax: 886-3-3270892

**Email:** service.adt@tw.bureauveritas.com
**Web Site:** www.bureauveritas-adt.com


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

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