Certificate #6613.01

# FCC TEST REPORT

# (PART 27)

| | |
|---|---|
| Applicant: | HMD Global Oy |
| Address: | Bertel Jungin aukio 9 Espoo 02600 Finland |

| | |
|---|---|
| Manufacturer or Supplier: | HMD Global Oy |
| Address: | Bertel Jungin aukio 9 Espoo 02600 Finland |
| Product: | Mobile Phone |
| Brand Name: | HMD |
| Model Name: | TA-1606 |
| FCC ID: | 2AJOTTA-1606 |
| Date of tests: | May. 14, 2024 ~ Jun. 13, 2024 |

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

☒ **FCC Part 27** ☒ **ANSI/TIA/EIA-603-D**
☒ **FCC Part 2** ☒ **ANSI/TIA/EIA-603-E** ☒ **ANSI C63.26-2015**

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

| Prepared by Hanwen Xu<br>Engineer / Mobile Department | Approved by Peibo Sun<br>Manager / Mobile Department |
|---|---|
| Date: Jun. 13, 2024 | Date: Jun. 13, 2024 |

# TABLE OF CONTENTS

# RELEASE CONTROL RECORD

| ISSUE NO. | REASON FOR CHANGE | DATE ISSUED |
|---|---|---|
| PSU-NQN2405090215RF04 | Original release | Jun. 13, 2024 |

# 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC PART 27 & PART 2 | | | |
|---|---|---|---|
| **STANDARD SECTION** | **TEST TYPE AND LIMIT** | **RESULT** | **TEST LAB*** |
| §2.1046 | Conducted Output Power | Compliance | A |
| §27.50(d)(4) | Equivalent Isotropically Radiated Power (WCMDAB4) (Band 4) (Band 66) | Compliance | A |
| §2.1055 §27.54 | Frequency Stability | Compliance | A |
| §2.1049 | Occupied Bandwidth | Compliance | A |
| §2.1051 §27.53(h) | Conducted Band Edge Measurements (WCMDAB4) (Band 4) (Band 66) | Compliance | A |
| §2.1051 §27.53(h) | Conducted Spurious Emissions (WCMDAB4) (Band 4) (Band 66) | Compliance | A |
| §2.1053 §27.53(h) | Radiated Spurious Emissions (WCMDAB4) (Band 4) (Band 66) | Compliance | A |
| N/A | Peak to average ratio | Compliance | A |

***Test Lab Information Reference**

**Lab A:**

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

**Lab Address:**

Tower N, Innovation Center, 88 Zhuyi Road, High-tech District, Suzhou City, Anhui Province

**Accredited Test Lab Cert 6613.01**

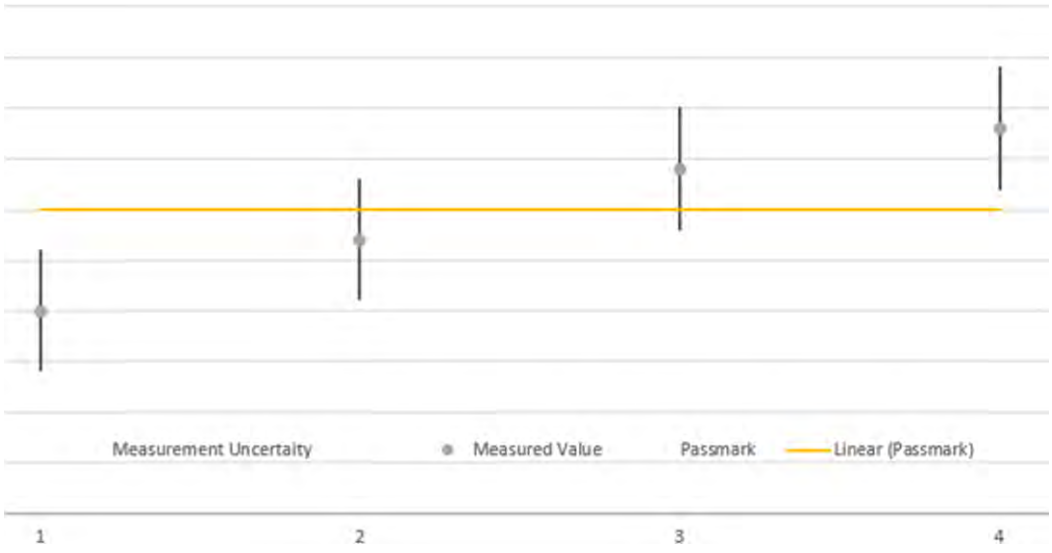
The FCC Site Registration No. is 434559; The Designation No. is CN1325.

## 1.1 MEASREMENT UNCERTAINTY

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

| MEASUREMENT | UNCERTAINTY |
|---|---|
| Frequency Stability | ±76.97Hz |
| Radiated emissions (9KHz~30MHz) | ±2.68dB |
| Radiated emissions & Radiated Power (30MHz~1GHz) | ±4.98dB |
| Radiated emissions & Radiated Power (1GHz ~6GHz) | ±4.70dB |
| Radiated emissions (6GHz ~18GHz) | ±4.60dB |
| Radiated emissions (18GHz ~40GHz) | ±4.12dB |
| Conducted emissions | ±4.01dB |
| Occupied Channel Bandwidth | ±43.58KHz |
| Conducted Output power | ±2.06dB |
| Band Edge Measurements | ±4.70dB |

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




The verdicts in this test report are given according the above diagram:

| Case | Measured Value | Uncertainty Range | Verdict |
|---|---|---|---|
| 1 | below pass mark | below pass mark | Passed |
| 2 | below pass mark | within pass mark | Passed |
| 3 | above pass mark | within pass mark | Failed |
| 4 | above pass mark | above pass mark | Failed |

That means, the laboratory applies, as decision rule (see ISO/IEC 17025:2017), the so-called shared risk principle.

## 1.2 TEST SITE AND INSTRUMENTS

| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
|---|---|---|---|---|---|
| Pre-Amplifier | R&S | SCU18F1 | 100815 | Aug.30,22 | Aug.29,24 |
| Pre-Amplifier | R&S | SCU08F1 | 101028 | Sep.16,22 | Sep.15,24 |
| Vector Signal Generator | R&S | SMBV100B | 102176 | Feb.16,24 | Feb.15,26 |
| Signal Generator | R&S | SMB100A | 182185 | Feb.16,24 | Feb.15,26 |
| 3m Fully-anechoic Chamber | TDK | 9m*6m*6m | HRSW-SZ-EMC-01Chamber | Nov.25,22 | Nov.24,25 |
| 3m Semi-anechoic Chamber | TDK | 9m*6m*6m | HRSW-SZ-EMC-02Chamber | Nov.25,22 | Nov.24,25 |
| EMI TEST Receiver | R&S | ESR26 | 101734 | Feb.25,24 | Feb.24,26 |
| EMI TEST Receiver | R&S | ESW44 | 101973 | Feb.25,24 | Feb.24,26 |
| Bilog Antenna | SCHWARZBECK | VULB 9163 | 1264 | Feb.28,24 | Feb.27,26 |
| Horn Antenna | ETS-LINDGREN | 3117 | 227836 | Aug.22,22 | Aug.21,24 |
| Horn Antenna (18GHz-40GHz) | Steatite Q-par Antennas | QMS 00880 | 23486 | Feb.23,24 | Feb.22,26 |
| Horn Antenna | Steatite Q-par Antennas | QMS 00208 | 23485 | Aug.22,22 | Aug.21,24 |
| Loop Antenna | SCHWARZ | HFH2-Z2/Z2E | 100976 | Feb.23,24 | Feb.22,26 |
| WIDEBANDRADIO COMMUNICATION TESTER | R&S | CMW500 | 169399 | Jun.27,22 | Jun.26,24 |
| Test Software | EMC32 | EMC32 | N/A | N/A | N/A |
| 6DB attenuator | Tonscend Technology Co., Ltd | N/A | 23062787 | N/A | N/A |
| Test Software | ELEKTRA | ELEKTRA4.32 | N/A | N/A | N/A |
| Open Switch and Control Unit | R&S | OSP220 | 101964 | Oct.01,22 | Sep.30,24 |
| DC Source | HYELEC | HY3010B | 551016 | Aug.31,22 | Aug.30,24 |
| Hygrothermograph | DELI | 20210528 | SZ014 | Sep.06,22 | Sep.05,24 |
| PC | LENOVO | E14 | HRSW0024 | N/A | N/A |
| TMC-AMI18843A(CABLE) | R&S | HF290-NMNM-7.00M | N/A | N/A | N/A |
| TMC-AMI18843A(CABLE) | R&S | HF290-NMNM-4.00M | N/A | N/A | N/A |
| CABLE | R&S | W13.02 | N/A | Apr.26,24 | Apr.25,25 |
| CABLE | R&S | W12.14 | N/A | Apr.26,24 | Apr.25,25 |
| CABLE | R&S | J12J103539-00-1 | SEP-03-20-069 | Apr.26,24 | Apr.25,25 |
| CABLE | R&S | J12J103539-00-1 | SEP-03-20-070 | Apr.26,24 | Apr.25,25 |
| Temperature Chamber | votsch | VT4002 | 585660781000050 | May.31,22 | May.30,24 |
| Temperature Chamber | votsch | VT4002 | 585660781000050 | May.30,24 | May.29,26 |

**NOTE:**

1. The calibration interval of the above test instruments is 12 months or 24 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 434559; The Designation No. is CN1325.

# 2 GENERAL INFORMATION

## 2.1 GENERAL DESCRIPTION OF EUT

| | | |
|---|---|---|
| **PRODUCT*** | Mobile Phone | |
| **BRAND NAME*** | HMD | |
| **MODEL NAME*** | TA-1606 | |
| **NOMINAL VOLTAGE*** | 5.0 or 9.0 or 12.0 Vdc (adapter)<br>3.87Vdc (battery) | |
| **MODULATION TECHNOLOGY*** | **LTE** | QPSK, 16QAM, 64QAM |
| **FREQUENCY RANGE** | **WCDMA IV** | 1712.4MHz ~ 1752.6MHz |
| | **LTE Band 4<br>Channel Bandwidth: 1.4MHz** | 1710.7MHz ~ 1754.3MHz |
| | **LTE Band 4<br>Channel Bandwidth: 3MHz** | 1711.5MHz ~ 1753.5MHz |
| | **LTE Band 4<br>Channel Bandwidth: 5MHz** | 1712.5MHz ~ 1752.5MHz |
| | **LTE Band 4<br>Channel Bandwidth: 10MHz** | 1715MHz ~ 1750MHz |
| | **LTE Band 4<br>Channel Bandwidth: 15MHz** | 1717.5MHz ~ 1747.5 MHz |
| | **LTE Band 4<br>Channel Bandwidth: 20MHz** | 1720MHz ~ 1745MHz |
| | **LTE Band 66<br>Channel Bandwidth: 1.4MHz** | 1710.7MHz ~ 1779.3MHz |
| | **LTE Band 66<br>Channel Bandwidth: 3MHz** | 1711.5MHz ~ 1778.5MHz |
| | **LTE Band 66<br>Channel Bandwidth: 5MHz** | 1712.5MHz ~ 1777.5MHz |
| | **LTE Band 66<br>Channel Bandwidth: 10MHz** | 1715MHz ~ 1775MHz |
| | **LTE Band 66<br>Channel Bandwidth: 15MHz** | 1717.5MHz ~ 1772.5MHz |
| | **LTE Band 66<br>Channel Bandwidth: 20MHz** | 1720MHz ~ 1770MHz |
| **MAX. EIRP POWER** | **WCDMA IV** | 192.75mW |
| | **LTE Band 4<br>Channel Bandwidth: 1.4MHz** | 238.78mW |
| | **LTE Band 4<br>Channel Bandwidth: 3MHz** | 236.59mW |
| | **LTE Band 4<br>Channel Bandwidth: 5MHz** | 236.59mW |

| | | |
|---|---|---|
| | **LTE Band 4 Channel Bandwidth: 10MHz** | 235.5mW |
| | **LTE Band 4 Channel Bandwidth: 15MHz** | 238.23mW |
| | **LTE Band 4 Channel Bandwidth: 20MHz** | 240.44mW |
| | **LTE Band 66 Channel Bandwidth: 1.4MHz** | 218.78mW |
| | **LTE Band 66 Channel Bandwidth: 3MHz** | 221.31mW |
| | **LTE Band 66 Channel Bandwidth: 5MHz** | 219.28mW |
| | **LTE Band 66 Channel Bandwidth: 10MHz** | 218.78mW |
| | **LTE Band 66 Channel Bandwidth: 15MHz** | 223.36mW |
| | **LTE Band 66 Channel Bandwidth: 20MHz** | 224.39mW |
| **EMISSION DESIGNATOR** | **WCDMA IV** | 4M15F9W |
| | **LTE Band 66 Channel Bandwidth: 1.4MHz** | QPSK: 1M10G7D |
| | | 16QAM: 1M10W7D |
| | **LTE Band 66 Channel Bandwidth: 3MHz** | QPSK: 2M71G7D |
| | | 16QAM: 2M71W7D |
| | **LTE Band 66 Channel Bandwidth: 5MHz** | QPSK: 4M53G7D |
| | | 16QAM: 4M50W7D |
| | **LTE Band 66 Channel Bandwidth: 10MHz** | QPSK: 9M03G7D |
| | | 16QAM: 9M02W7D |
| | **LTE Band 66 Channel Bandwidth: 15MHz** | QPSK: 13M5G7D |
| | | 16QAM: 13M5W7D |
| | **LTE Band 66 Channel Bandwidth: 20MHz** | QPSK: 18M1G7D |
| | | 16QAM: 18M0W7D |
| **ANTENNA TYPE*** | PIFA Antenna with 0.2dBi gain for WCDMA IV/ LTE B4/ LTE B66 | |
| **HW VERSION*** | V00 | |
| **SW VERSION*** | V0.019_A01 | |
| **I/O PORTS*** | Refer to user's manual | |
| **CABLE SUPPLIED*** | USB cable1: non-shielded cable, with w/o ferrite core, 1.0 meter<br>USB cable2: non-shielded cable, with w/o ferrite core, 1.0 meter<br>USB cable3: non-shielded cable, with w/o ferrite core, 1.0 meter<br>USB cable4: non-shielded cable, with w/o ferrite core, 1.0 meter | |

| | |
|---|---|
| **EXTREME TEMPERATURE*** | -10 ~ 55 ℃ |
| **EXTREME VOLTAGE*** | 3.6V ~ 4.45V |

**NOTE**:

1. *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information , Test Lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.

2. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

3. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

| MODULATION MODE | TX FUNCTION |
|---|---|
| LTE | 1TX/1RX |

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

5. For the product of TA-1606 (FCC ID: 2AJOTTA-1606), the following components are different between the first and second supply, other parameters are the same.

**Key Component List**

| No. | Component | Description | First supply | | Second supply | |
|---|---|---|---|---|---|---|
| | | | SUPPLIER | Spec | SUPPLIER | Spec |
| 1 | NMOS | PCBA | PRISEMI | PNM3FD20V2 | JSCJ | CJBA3134K |
| 2 | E-compass | | MEMSIC | MMC5603NJ | QST | QMC6308-TR |
| 3 | Memory-256GB | | FORESEE | FEUDNN256G-C2G07 | BIWIN | BWU2ASV46A256G |
| 4 | Memory-64GB | | FORESEE | FLXC4008G-30 | BIWIN | BWMZCX32H2A-64G-X |
| 5 | nano-SIM | | LCN | CAF99-06033-0305 | HRD | S186-1B01F13F |
| 6 | T-card | | LCN | CAF11-08136-031901 | HRD | S186-1B02F13F |
| 7 | iron covering | | LCN | CAF00-21134-032307 | HRD | S186-2B21F13F-1 |
| 8 | Type C connector | | LETCON | 15-16815-110 | LCN | UAF05-16323-3007 |
| 9 | headphone socket | | LETCON | 11-058126A | HRD | PH157-0B12F36M |
| 10 | G sensor | | slan | 2*2 12bit | sensortek | 2*2 12bit |
| 11 | Proximity light sensor | | Liteon | LTR-569ALS-02 | sensortek | STK3335-X |
| 12 | Backlight driver | | AWINIC | dfn2*2-6L | broadchip | dfn2*2-6L |
| 13 | Flash driver | | AWINIC | 2A DCDC | OCS | 2A DCDC |
| 14 | CKDID baschip | | AWINIC | ±5V | OCS | ±5V |
| 15 | overvoltage protection chip | | broadchip | 6.8V FCQFN12 | AWINIC | 6.8V FCQFN12 |
| 16 | CKD BDS/GPS/GAL LNA | | SILICONWAVE | LNA 1.5*1.0 6pin | AWINIC | LNA 1.5*1.0 6pin |
| 17 | MIC | | GETTOP | 2.75*1.85*0.9mm | YUTAI | 2.75*1.85*0.9mm |
| 18 | LCM | LCD | HUAXIAN | incell5.56HD+ | DZX | incell5.56HD+ |
| 19 | Macro cam | camera | CXT | 2M CSP | lianhe | 2M CSP |
| 20 | Finger print | module | SYX | side fingerprint | SHENAO | side fingerprint |
| 21 | Battery | | GAOYUAN | Rated: 4900mAh Typical: 5000mAh | FENGHUA | Rated: 4900mAh Typical: 5000mAh |
| 22 | Receiver | | SENNOR | '0809 | TUNESS | '0809 |
| 23 | Vibrator | | JX | 0830 3.35mm | JD | 0830 3.35mm |
| 24 | Charger US | | BJD | 5V 2A | JUWEI | 5V 2A |
| 25 | Data cable | | JUWEI | A-C | FKY | A-C |
| | | | JUWEI | C-C | FKY | C-C |

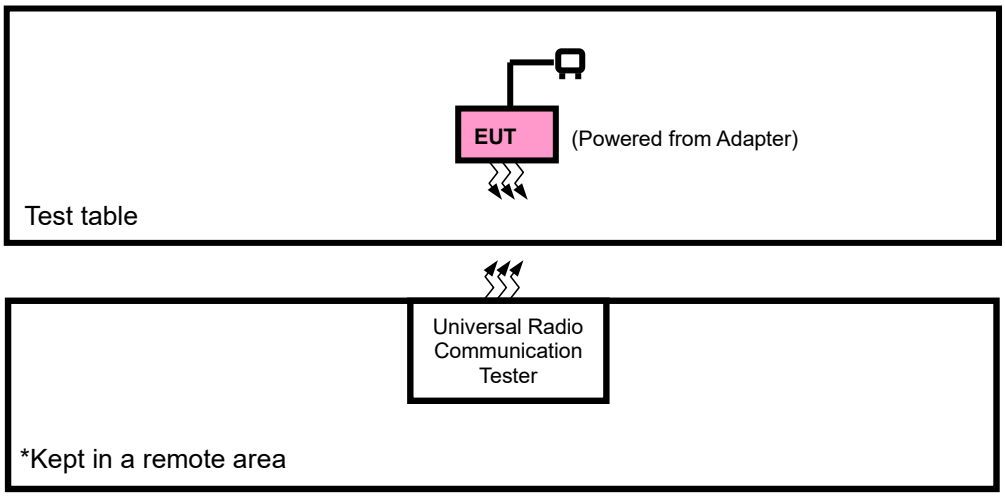
**List of Accessory:**

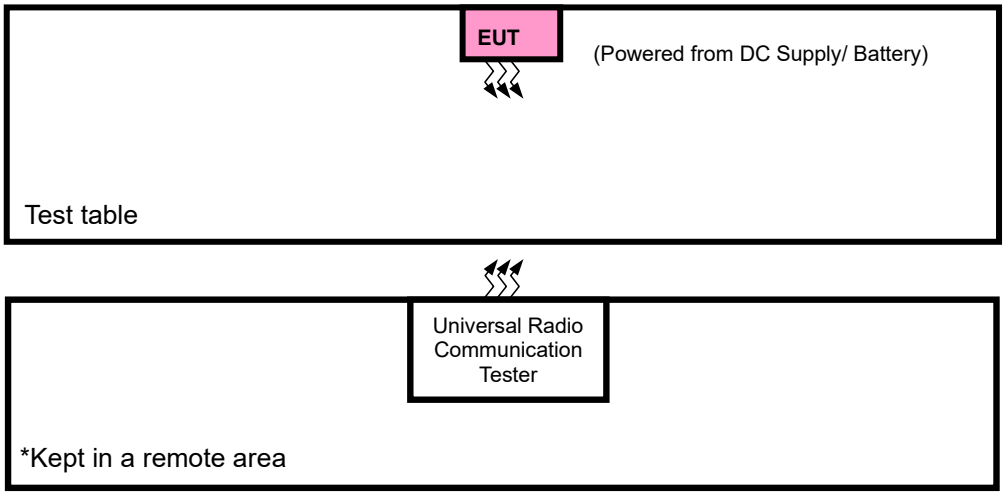
| ACCESSORIES | BRAND | MANUFACTURER | MODEL | SPECIFICATION |
|---|---|---|---|---|
| Battery 1 | HMD | Gaoyuan | HBA5020AA | Power Rating: 3.87 Vdc;18.963 Wh;4900 mAh |
| Battery 2 | HMD | Fenghua | HBA5020AA | Power Rating: 3.87 Vdc;18.963 Wh;4900 mAh |
| AC Adapter 1 | HMD | Shenzhen Baijunda Electronics Co.,Ltd | HAD-020U(US-PD 20W) | I/P: 100-240 V,50~60Hz,0.6A O/P: USB-C Output:5.0V 3.0A or 9.0V 2.22A or 12.0V 1.67A 20.0W Max |
| AC Adapter 2 | HMD | Shenzhen Baijunda Electronics Co.,Ltd | HAD-010U(US) | I/P: 100-240 V,50~60Hz,0.35A O/P: 5V 2A,10W |
| AC Adapter 3 | HMD | Huizhou Juwei Electronics Co., Ltd. | HAD-010U(US) | I/P: 100-240 V,50~60Hz,0.35A O/P: 5V 2A,10W |
| Earphone | HMD | N/A | JWEP1266-H24H | N/A |
| USB Cable 1 | HMD | JUWEI | JWUB1684-M01H | A to C |
| USB Cable 2 | HMD | JUWEI | JWUB1688-M01H | C to C |
| USB Cable 3 | HMD | FUKANGYUAN | FKY-23-368 | A to C |
| USB Cable 4 | HMD | FUKANGYUAN | FKY-23-369 | C to C |

6. The worst-case scenario for all measurements is based on an engineering evaluation made on different modulations. Then, QPSK and 16QAM were observed as the worst mode to LTE bands respectively and set for all conducted and radiated. Output power measurements were measured on QPSK,16QAM, 64QAM modulations, and tests other than output power are performed only in worse-case QPSK and 16QAM modulations.

## 2.2 CONFIGURATION OF SYSTEM UNDER TEST

**FOR RADIATION EMISSION TEST**



## 2.3 DESCRIPTION OF SUPPORT UNITS

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

| NO. | PRODUCT | BRAND | MODEL NO. | SERIAL NO. | FCC ID |
|---|---|---|---|---|---|
| 1 | DC Source | HYELEC | HY3010B | 551016 | N/A |

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

## 2.4 TEST ITEM AND TEST CONFIGURATION

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

| EUT CONFIGURE MODE | DESCRIPTION |
|---|---|
| A | EUT + Adapter + USB Cable with WCDMA or LTE link |
| B | EUT + DC Supply with WCDMA or LTE link |

**WCDMA MODE**

| EUT CONFIGURE MODE | TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | MODE |
|---|---|---|---|---|
| A | EIRP | 1312 to 1513 | 1312, 1413, 1513 | WCDMA |
| B | FREQUENCY STABILITY | 1312 to 1513 | 1312, 1413, 1513 | WCDMA |
| A | OCCUPIED BANDWIDTH | 1312 to 1513 | 1312, 1413, 1513 | WCDMA |
| A | BAND EDGE | 1312 to 1513 | 1312, 1513 | WCDMA |
| A | PEAK TO AVERAGE RATIO | 1312 to 1513 | 1312, 1413, 1513 | WCDMA |
| A | CONDUCTED EMISSION | 1312 to 1513 | 1312, 1413, 1513 | WCDMA |
| A | RADIATED EMISSION | 1312 to 1513 | 1312, 1413, 1513 | WCDMA |

**LTE BAND 4 MODE**

| EUT CONFIGURE MODE | TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE |
|---|---|---|---|---|---|---|
| A | EIRP | 19957 to 20393 | 19957, 20175, 20393 | 1.4MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | 19965 to 20385 | 19965, 20175, 20385 | 3MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | 19975 to 20375 | 19975, 20175, 20375 | 5MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | 20000 to 20350 | 20000, 20175, 20350 | 10MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | 20025 to 20325 | 20025, 20175, 20325 | 15MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | 20050 to 20300 | 20050, 20175, 20300 | 20MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |

**Note:** 1.This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

2. LTE Band 4 are covered by LTE Band 66, Because it is a subset of LTE Band 66 with the same output power and supported bandwidths, So the conducted test data and RSE test data please refer to LTE Band 66.

**LTE BAND 66 MODE**

| EUT CONFIGURE MODE | TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE |
|---|---|---|---|---|---|---|
| A | EIRP | 131979 to 132665 | 131979,132322,132665 | 1.4MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | | 131987 to 132657 | 131987,132322,132657 | 3MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | | 131997 to 132647 | 131997,132322,132647 | 5MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | | 132022 to 132622 | 132022,132322,132622 | 10MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | | 132047 to 132597 | 132047,132322,132597 | 15MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| | | 132072 to 132572 | 132072,132322,132572 | 20MHz | QPSK,16QAM,64QAM | 1 RB / 0 RB Offset |
| B | FREQUENCY STABILITY | 131979 to 132665 | 131979,132322,132665 | 1.4MHz | QPSK,16QAM | 6 RB / 0 RB Offset |
| | | 131987 to 132657 | 131987,132322,132657 | 3MHz | QPSK,16QAM | 15 RB / 0 RB Offset |
| | | 131997 to 132647 | 131997,132322,132647 | 5MHz | QPSK,16QAM | 25 RB / 0 RB Offset |
| | | 132022 to 132622 | 132022,132322,132622 | 10MHz | QPSK,16QAM | 50 RB / 0 RB Offset |
| | | 132047 to 132597 | 132047,132322,132597 | 15MHz | QPSK,16QAM | 75 RB / 0 RB Offset |
| | | 132072 to 132572 | 132072,132322,132572 | 20MHz | QPSK,16QAM | 100 RB / 0 RB Offset |
| A | OCCUPIED BANDWIDTH | 131979 to 132665 | 131979,132322,132665 | 1.4MHz | QPSK,16QAM | 6 RB / 0 RB Offset |
| | | 131987 to 132657 | 131987,132322,132657 | 3MHz | QPSK,16QAM | 15 RB / 0 RB Offset |
| | | 131997 to 132647 | 131997,132322,132647 | 5MHz | QPSK,16QAM | 25 RB / 0 RB Offset |
| | | 132022 to 132622 | 132022,132322,132622 | 10MHz | QPSK,16QAM | 50 RB / 0 RB Offset |
| | | 132047 to 132597 | 132047,132322,132597 | 15MHz | QPSK,16QAM | 75 RB / 0 RB Offset |
| | | 132072 to 132572 | 132072,132322,132572 | 20MHz | QPSK,16QAM | 100 RB / 0 RB Offset |
| A | BAND EDGE | 131979 to 132322 | 131979 | 1.4MHz | QPSK,16QAM | 1 RB / 0 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | | 132322 | 1.4MHz | QPSK,16QAM | 1 RB / 5 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | 131987 to 132657 | 131987 | 3MHz | QPSK,16QAM | 1 RB / 0 RB Offset |
| | | | | | | 15 RB / 0 RB Offset |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | 132657 | 3MHz | QPSK,16QAM | 1 RB / 14 RB Offset |
| | | | | | | 15 RB / 0 RB Offset |
| | | 131997 to 132647 | 131997 | 5MHz | QPSK,16QAM | 1 RB / 0 RB Offset |
| | | | | | | 25 RB / 0 RB Offset |
| | | | 132647 | 5MHz | QPSK,16QAM | 1 RB / 24 RB Offset |
| | | | | | | 25 RB / 0 RB Offset |
| | | 132022 to 132622 | 132022 | 10MHz | QPSK,16QAM | 1 RB / 0 RB Offset |
| | | | | | | 50 RB / 0 RB Offset |
| | | | 132622 | 10MHz | QPSK,16QAM | 1 RB / 49 RB Offset |
| | | | | | | 50 RB / 0 RB Offset |
| | | 132047 to 132597 | 132047 | 15MHz | QPSK,16QAM | 1 RB / 0 RB Offset |
| | | | | | | 75 RB / 0 RB Offset |
| | | | 132597 | 15MHz | QPSK,16QAM | 1 RB / 74 RB Offset |
| | | | | | | 75 RB / 0 RB Offset |
| | | 132072 to 132572 | 132072 | 20MHz | QPSK,16QAM | 1 RB / 0 RB Offset |
| | | | | | | 100 RB / 0 RB Offset |
| | | | 132572 | 20MHz | QPSK,16QAM | 1 RB / 99 RB Offset |
| | | | | | | 100 RB / 0 RB Offset |
| A | CONDCUDETED EMISSION | 131979 to 132665 | 131979,132322,132665 | 1.4MHz | QPSK,16QAM | 1 RB / 0 RB Offset |
| | | 131987 to 132657 | 131987,132322,132657 | 3MHz | QPSK,16QAM | 1 RB / 0 RB Offset |
| | | 131997 to 132647 | 131997,132322,132647 | 5MHz | QPSK,16QAM | 1 RB / 0 RB Offset |
| | | 132022 to 132622 | 132022,132322,132622 | 10MHz | QPSK,16QAM | 1 RB / 0 RB Offset |
| | | 132047 to 132597 | 132047,132322,132597 | 15MHz | QPSK,16QAM | 1 RB / 0 RB Offset |
| | | 132072 to 132572 | 132072,132322,132572 | 20MHz | QPSK,16QAM | 1 RB / 0 RB Offset |
| A | RADIATED EMISSION | 131979 to 132665 | 132322 | 1.4MHz | QPSK | 1 RB / 0 RB Offset |
| | | 131987 to 132657 | 132322 | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | | 131997 to 132647 | 132322 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | 132022 to 132622 | 132022,132322,132622 | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | | 132047 to 132597 | 132322 | 15MHz | QPSK | 1 RB / 0 RB Offset |
| | | 132072 to 132572 | 132322 | 20MHz | 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&EIRP | 23deg. C, 70%RH | DC 5/9/12V By Adapter | Hanwen Xu |
| FREQUENCY STABILITY | 23deg. C, 70%RH | DC 3.87V By DC Supply | Hanwen Xu |
| OCCUPIED BANDWIDTH | 23deg. C, 70%RH | DC 5/9/12V By Adapter | Hanwen Xu |
| BAND EDGE | 23deg. C, 70%RH | DC 5/9/12V By Adapter | Hanwen Xu |
| CONDCUDETED EMISSION | 23deg. C, 70%RH | DC 5/9/12V By Adapter | Hanwen Xu |
| RADIATED EMISSION | 23deg. C, 70%RH | DC 5/9/12V By Adapter | Hanwen Xu |
| PEAK TO AVERAGE RATIO | 23deg. C, 70%RH | DC 5/9/12V By Adapter | Hanwen Xu |

## 2.5 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 27**

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

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

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

**ANSI C63.26-2015**

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

# 3 TEST TYPES AND RESULTS

## 3.1 OUTPUT POWER MEASUREMENT

### 3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

The radiated peak output power shall be according to the specific rule Part 27.50(h)(2) that “User stations are limited to 2 watts” and 27.50(i) specific that “Peak transmit power must be measure over any interval of continuous transmission using instrumentation calibration in terms of rms-equivalent voltage.”

Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP

According to the specific rule Part 27.50 (k)(3)Mobile devices are limited to 1Watt (30 dBm) EIRP, Mobile devices operating inl these bands must employ a means for limiting power to the minimum necessary for successful communications

### 3.1.2 TEST PROCEDURES

**EIRP MEASUREMENT:**

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

ERP or EIRP = $P_{Meas} + G_T – L_C$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as $P_{Meas}$, typically dBW or dBm);

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

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

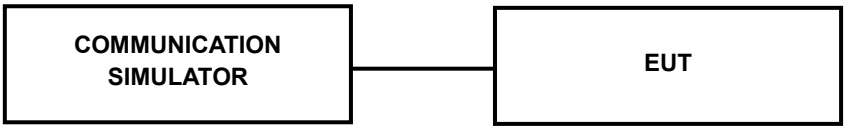
$L_C$ = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

**CONDUCTED POWER MEASUREMENT:**

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

### 3.1.3 TEST SETUP

**CONDUCTED POWER MEASUREMENT:**




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

## 3.1.4 TEST RESULTS

**AVERAGE CONDUCTED OUTPUT POWER (dBm)**

| Band | WCDMA IV | | |
|---|---|---|---|
| Channel | 1312 | 1413 | 1513 |
| Frequency (MHz) | 1712.4 | 1732.6 | 1752.6 |
| RMC 12.2K | 22.60 | **22.65** | 22.61 |
| HSDPA Subtest-1 | 22.23 | 22.28 | 22.27 |
| HSDPA Subtest-2 | 22.18 | 22.16 | 22.10 |
| HSDPA Subtest-3 | 21.72 | 21.63 | 21.57 |
| HSDPA Subtest-4 | 21.65 | 21.56 | 21.78 |
| DC-HSDPA Subtest-1 | 22.13 | 22.18 | 22.11 |
| DC-HSDPA Subtest-2 | 22.03 | 22.25 | 22.05 |
| DC-HSDPA Subtest-3 | 21.76 | 21.55 | 21.62 |
| DC-HSDPA Subtest-4 | 21.71 | 21.58 | 21.69 |
| HSUPA Subtest-1 | 21.27 | 21.38 | 21.19 |
| HSUPA Subtest-2 | 20.82 | 20.91 | 20.78 |
| HSUPA Subtest-3 | 21.40 | 21.29 | 21.33 |
| HSUPA Subtest-4 | 20.66 | 20.74 | 20.79 |
| HSUPA Subtest-5 | 21.72 | 21.70 | 21.80 |
| HSPA+ Subtest-1 | 21.20 | 21.43 | 21.33 |

LTE Band 4

| Band/BW | Modulation | RB Size | RB Offset | Low CH 19957 | Mid CH 20175 | High CH 20393 |
|---|---|---|---|---|---|---|
| | | | | Frequency 1710.7 MHz | Frequency 1732.5 MHz | Frequency 1754.3 MHz |
| 4/ 1.4 | QPSK | 1 | 0 | 23.28 | 23.42 | 23.12 |
| | | 1 | 2 | 23.33 | 23.58 | 22.83 |
| | | 1 | 5 | 23.53 | 23.55 | 23.20 |
| | | 3 | 0 | 23.16 | 23.31 | 22.51 |
| | | 3 | 1 | 23.11 | 23.18 | 22.49 |
| | | 3 | 3 | 23.21 | 23.28 | 22.67 |
| | | 6 | 0 | 22.20 | 22.25 | 22.04 |
| | 16QAM | 1 | 0 | 22.50 | 22.40 | 22.29 |
| | | 1 | 2 | 22.51 | 22.63 | 22.29 |
| | | 1 | 5 | 22.65 | 22.49 | 22.29 |
| | | 3 | 0 | 22.17 | 22.25 | 22.17 |
| | | 3 | 1 | 22.08 | 22.35 | 22.19 |
| | | 3 | 3 | 22.23 | 22.27 | 22.52 |
| | | 6 | 0 | 21.22 | 21.36 | 21.00 |
| | 64QAM | 1 | 0 | 21.67 | 21.50 | 21.42 |
| | | 1 | 2 | 21.63 | 21.66 | 21.20 |
| | | 1 | 5 | 21.50 | 21.47 | 21.47 |
| | | 3 | 0 | 21.14 | 21.11 | 21.03 |
| | | 3 | 1 | 21.23 | 21.18 | 20.92 |
| | | 3 | 3 | 21.16 | 21.20 | 20.99 |
| | | 6 | 0 | 20.16 | 20.08 | 20.06 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 19965 | Mid CH 20175 | High CH 20385 |
|---|---|---|---|---|---|---|
| | | | | Frequency 1711.5 MHz | Frequency 1732.5 MHz | Frequency 1753.5 MHz |
| 4/ 3 | QPSK | 1 | 0 | 23.30 | 23.41 | 23.16 |
| | | 1 | 7 | 23.33 | 23.54 | 22.80 |
| | | 1 | 14 | 23.40 | 23.52 | 23.33 |
| | | 8 | 0 | 22.02 | 22.20 | 21.61 |
| | | 8 | 3 | 22.18 | 22.18 | 21.55 |
| | | 8 | 7 | 22.15 | 22.30 | 21.76 |
| | | 15 | 0 | 22.12 | 22.23 | 22.09 |
| | 16QAM | 1 | 0 | 22.54 | 22.51 | 22.24 |
| | | 1 | 7 | 22.53 | 22.72 | 22.30 |
| | | 1 | 14 | 22.63 | 22.51 | 22.33 |
| | | 8 | 0 | 21.23 | 21.28 | 21.24 |
| | | 8 | 3 | 21.28 | 21.46 | 21.33 |
| | | 8 | 7 | 21.38 | 21.40 | 21.57 |
| | | 15 | 0 | 21.22 | 21.36 | 21.03 |
| | 64QAM | 1 | 0 | 21.62 | 21.54 | 21.41 |
| | | 1 | 7 | 21.68 | 21.62 | 21.21 |
| | | 1 | 14 | 21.64 | 21.58 | 21.44 |
| | | 8 | 0 | 20.27 | 20.24 | 20.19 |
| | | 8 | 3 | 20.22 | 20.28 | 20.15 |
| | | 8 | 7 | 20.24 | 20.20 | 20.06 |
| | | 15 | 0 | 20.17 | 20.17 | 20.06 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 19975<br>Frequency 1712.5 MHz | Mid CH 20175<br>Frequency 1732.5 MHz | High CH 20375<br>Frequency 1752.5 MHz |
|---|---|---|---|---|---|---|
| 4/ 5 | QPSK | 1 | 0 | 23.27 | 23.46 | 23.15 |
| | | 1 | 12 | 23.46 | 23.53 | 22.81 |
| | | 1 | 24 | 23.49 | 23.54 | 23.34 |
| | | 12 | 0 | 22.14 | 22.20 | 21.50 |
| | | 12 | 6 | 22.15 | 22.17 | 21.60 |
| | | 12 | 13 | 22.12 | 22.36 | 21.70 |
| | | 25 | 0 | 22.19 | 22.15 | 22.00 |
| | 16QAM | 1 | 0 | 22.59 | 22.53 | 22.23 |
| | | 1 | 12 | 22.42 | 22.69 | 22.40 |
| | | 1 | 24 | 22.57 | 22.57 | 22.22 |
| | | 12 | 0 | 21.28 | 21.34 | 21.18 |
| | | 12 | 6 | 21.31 | 21.43 | 21.21 |
| | | 12 | 13 | 21.37 | 21.35 | 21.66 |
| | | 25 | 0 | 21.28 | 21.38 | 21.08 |
| | 64QAM | 1 | 0 | 21.60 | 21.61 | 21.39 |
| | | 1 | 12 | 21.65 | 21.73 | 21.22 |
| | | 1 | 24 | 21.63 | 21.57 | 21.42 |
| | | 12 | 0 | 20.17 | 20.20 | 20.06 |
| | | 12 | 6 | 20.31 | 20.32 | 20.12 |
| | | 12 | 13 | 20.28 | 20.28 | 20.17 |
| | | 25 | 0 | 20.12 | 20.08 | 20.03 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 20000 | Mid CH 20175 | High CH 20350 |
|---|---|---|---|---|---|---|
| | | | | Frequency 1715 MHz | Frequency 1732.5 MHz | Frequency 1750 MHz |
| 4/ 10 | QPSK | 1 | 0 | 23.31 | 23.47 | 23.13 |
| | | 1 | 24 | 23.47 | 23.47 | 22.88 |
| | | 1 | 49 | 23.47 | 23.52 | 23.21 |
| | | 25 | 0 | 22.03 | 22.25 | 21.58 |
| | | 25 | 12 | 22.11 | 22.18 | 21.52 |
| | | 25 | 25 | 22.24 | 22.27 | 21.79 |
| | | 50 | 0 | 22.11 | 22.16 | 22.08 |
| | 16QAM | 1 | 0 | 22.55 | 22.48 | 22.28 |
| | | 1 | 24 | 22.50 | 22.66 | 22.33 |
| | | 1 | 49 | 22.68 | 22.56 | 22.26 |
| | | 25 | 0 | 21.27 | 21.26 | 21.23 |
| | | 25 | 12 | 21.27 | 21.50 | 21.29 |
| | | 25 | 25 | 21.35 | 21.43 | 21.67 |
| | | 50 | 0 | 21.29 | 21.40 | 21.03 |
| | 64QAM | 1 | 0 | 21.64 | 21.54 | 21.40 |
| | | 1 | 24 | 21.65 | 21.76 | 21.21 |
| | | 1 | 49 | 21.56 | 21.60 | 21.38 |
| | | 25 | 0 | 20.22 | 20.30 | 20.13 |
| | | 25 | 12 | 20.26 | 20.30 | 20.07 |
| | | 25 | 25 | 20.30 | 20.20 | 20.14 |
| | | 50 | 0 | 20.15 | 20.16 | 20.02 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 20025 | Mid CH 20175 | High CH 20325 |
|---|---|---|---|---|---|---|
| | | | | Frequency 1717.5 MHz | Frequency 1732.5 MHz | Frequency 1747.5 MHz |
| 4/ 15 | QPSK | 1 | 0 | 23.33 | 23.35 | 23.15 |
| | | 1 | 37 | 23.35 | 23.44 | 22.86 |
| | | 1 | 74 | 23.46 | 23.57 | 23.20 |
| | | 36 | 0 | 22.14 | 22.24 | 21.60 |
| | | 36 | 19 | 22.20 | 22.18 | 21.54 |
| | | 36 | 39 | 22.22 | 22.28 | 21.80 |
| | | 75 | 0 | 22.15 | 22.25 | 22.03 |
| | 16QAM | 1 | 0 | 22.52 | 22.44 | 22.29 |
| | | 1 | 37 | 22.47 | 22.70 | 22.35 |
| | | 1 | 74 | 22.68 | 22.59 | 22.20 |
| | | 36 | 0 | 21.16 | 21.37 | 21.25 |
| | | 36 | 19 | 21.25 | 21.51 | 21.34 |
| | | 36 | 39 | 21.29 | 21.35 | 21.59 |
| | | 75 | 0 | 21.33 | 21.46 | 21.05 |
| | 64QAM | 1 | 0 | 21.65 | 21.58 | 21.52 |
| | | 1 | 37 | 21.59 | 21.63 | 21.23 |
| | | 1 | 74 | 21.53 | 21.60 | 21.41 |
| | | 36 | 0 | 20.17 | 20.29 | 20.15 |
| | | 36 | 19 | 20.28 | 20.25 | 20.12 |
| | | 36 | 39 | 20.27 | 20.28 | 20.11 |
| | | 75 | 0 | 20.19 | 20.13 | 20.04 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 20050<br>Frequency 1720 MHz | Mid CH 20175<br>Frequency 1732.5 MHz | High CH 20300<br>Frequency 1745 MHz |
|---|---|---|---|---|---|---|
| 4/ 20 | QPSK | 1 | 0 | 23.41 | 23.48 | 23.20 |
| | | 1 | 50 | 23.48 | 23.59 | 22.94 |
| | | 1 | 99 | 23.54 | **23.61** | 23.35 |
| | | 50 | 0 | 22.17 | 22.35 | 21.64 |
| | | 50 | 25 | 22.26 | 22.27 | 21.63 |
| | | 50 | 50 | 22.27 | **22.38** | 21.82 |
| | | 100 | 0 | 22.25 | **22.27** | 22.15 |
| | 16QAM | 1 | 0 | 22.61 | 22.54 | 22.33 |
| | | 1 | 50 | 22.57 | 22.74 | 22.42 |
| | | 1 | 99 | 22.69 | 22.61 | 22.35 |
| | | 50 | 0 | 21.29 | 21.38 | 21.33 |
| | | 50 | 25 | 21.33 | 21.53 | 21.36 |
| | | 50 | 50 | 21.44 | 21.50 | 21.69 |
| | | 100 | 0 | 21.37 | 21.49 | 21.15 |
| | 64QAM | 1 | 0 | 21.68 | 21.63 | 21.53 |
| | | 1 | 50 | 21.70 | 21.77 | 21.28 |
| | | 1 | 99 | 21.65 | 21.62 | 21.52 |
| | | 50 | 0 | 20.29 | 20.32 | 20.21 |
| | | 50 | 25 | 20.34 | 20.38 | 20.16 |
| | | 50 | 50 | 20.36 | 20.31 | 20.21 |
| | | 100 | 0 | 20.26 | 20.20 | 20.11 |

LTE Band 66

| Band/BW | Modulation | RB Size | RB Offset | Low CH 131979 Frequency 1710.7MHz | Mid CH 132322 Frequency 1745MHz | High CH 132665 Frequency 1779.3MHz |
|---|---|---|---|---|---|---|
| 66/ 1.4 | QPSK | 1 | 0 | 23.10 | 22.87 | 23.00 |
| | | 1 | 2 | 23.20 | 22.90 | 23.11 |
| | | 1 | 5 | 23.05 | 22.80 | 23.10 |
| | | 3 | 0 | 22.98 | 22.87 | 22.86 |
| | | 3 | 1 | 23.07 | 22.98 | 22.96 |
| | | 3 | 3 | 23.04 | 22.93 | 22.85 |
| | | 6 | 0 | 22.02 | 21.97 | 21.97 |
| | 16QAM | 1 | 0 | 22.37 | 22.20 | 21.86 |
| | | 1 | 2 | 22.47 | 22.36 | 21.98 |
| | | 1 | 5 | 22.55 | 22.37 | 21.79 |
| | | 3 | 0 | 22.00 | 22.09 | 22.06 |
| | | 3 | 1 | 22.08 | 22.09 | 22.17 |
| | | 3 | 3 | 22.06 | 22.25 | 22.10 |
| | | 6 | 0 | 21.16 | 21.16 | 21.08 |
| | 64QAM | 1 | 0 | 21.55 | 21.23 | 21.55 |
| | | 1 | 2 | 21.69 | 21.35 | 21.74 |
| | | 1 | 5 | 21.68 | 21.37 | 21.60 |
| | | 3 | 0 | 21.60 | 21.55 | 21.54 |
| | | 3 | 1 | 21.62 | 21.67 | 21.76 |
| | | 3 | 3 | 21.64 | 21.67 | 21.69 |
| | | 6 | 0 | 20.54 | 20.57 | 20.63 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 131987<br>Frequency 1711.5MHz | Mid CH 132322<br>Frequency 1745MHz | High CH 132657<br>Frequency 1778.5MHz |
|---|---|---|---|---|---|---|
| 66/ 3 | QPSK | 1 | 0 | 23.11 | 22.84 | 22.93 |
| | | 1 | 7 | 23.25 | 22.95 | 23.09 |
| | | 1 | 14 | 22.94 | 22.84 | 23.17 |
| | | 8 | 0 | 22.03 | 21.89 | 21.89 |
| | | 8 | 3 | 22.10 | 22.03 | 21.89 |
| | | 8 | 7 | 22.06 | 21.95 | 21.88 |
| | | 15 | 0 | 22.00 | 22.03 | 21.97 |
| | 16QAM | 1 | 0 | 22.33 | 22.32 | 21.84 |
| | | 1 | 7 | 22.42 | 22.42 | 21.88 |
| | | 1 | 14 | 22.56 | 22.42 | 21.72 |
| | | 8 | 0 | 21.05 | 21.14 | 21.00 |
| | | 8 | 3 | 21.19 | 21.10 | 21.23 |
| | | 8 | 7 | 21.04 | 21.23 | 21.02 |
| | | 15 | 0 | 21.13 | 21.19 | 21.09 |
| | 64QAM | 1 | 0 | 21.45 | 21.22 | 21.54 |
| | | 1 | 7 | 21.63 | 21.24 | 21.70 |
| | | 1 | 14 | 21.57 | 21.30 | 21.61 |
| | | 8 | 0 | 20.56 | 20.60 | 20.56 |
| | | 8 | 3 | 20.65 | 20.70 | 20.73 |
| | | 8 | 7 | 20.63 | 20.68 | 20.62 |
| | | 15 | 0 | 20.57 | 20.48 | 20.67 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 131997<br>Frequency 1712.5MHz | Mid CH 132322<br>Frequency 1745MHz | High CH 132647<br>Frequency 1777.5MHz |
|---|---|---|---|---|---|---|
| 66/ 5 | QPSK | 1 | 0 | 23.18 | 22.90 | 23.01 |
| | | 1 | 12 | 23.21 | 22.89 | 23.18 |
| | | 1 | 24 | 23.02 | 22.81 | 23.04 |
| | | 12 | 0 | 21.96 | 21.88 | 21.91 |
| | | 12 | 6 | 22.10 | 22.00 | 21.92 |
| | | 12 | 13 | 22.04 | 21.84 | 21.85 |
| | | 25 | 0 | 21.93 | 22.02 | 22.02 |
| | 16QAM | 1 | 0 | 22.27 | 22.20 | 21.90 |
| | | 1 | 12 | 22.51 | 22.36 | 21.99 |
| | | 1 | 24 | 22.55 | 22.38 | 21.79 |
| | | 12 | 0 | 21.00 | 21.15 | 20.95 |
| | | 12 | 6 | 21.20 | 21.10 | 21.22 |
| | | 12 | 13 | 21.02 | 21.14 | 21.04 |
| | | 25 | 0 | 21.08 | 21.18 | 21.05 |
| | 64QAM | 1 | 0 | 21.51 | 21.25 | 21.52 |
| | | 1 | 12 | 21.56 | 21.31 | 21.77 |
| | | 1 | 24 | 21.59 | 21.31 | 21.62 |
| | | 12 | 0 | 20.62 | 20.62 | 20.59 |
| | | 12 | 6 | 20.66 | 20.62 | 20.65 |
| | | 12 | 13 | 20.69 | 20.64 | 20.63 |
| | | 25 | 0 | 20.56 | 20.46 | 20.68 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 132022 Frequency 1715MHz | Mid CH 132322 Frequency 1745MHz | High CH 132622 Frequency 1775MHz |
|---|---|---|---|---|---|---|
| 66/ 10 | QPSK | 1 | 0 | 23.10 | 22.78 | 23.00 |
| | | 1 | 24 | 23.20 | 22.94 | 23.20 |
| | | 1 | 49 | 22.97 | 22.85 | 23.08 |
| | | 25 | 0 | 22.08 | 21.90 | 21.90 |
| | | 25 | 12 | 22.08 | 22.01 | 21.92 |
| | | 25 | 25 | 22.03 | 21.82 | 21.77 |
| | | 50 | 0 | 22.02 | 22.03 | 21.89 |
| | 16QAM | 1 | 0 | 22.38 | 22.29 | 21.77 |
| | | 1 | 24 | 22.49 | 22.34 | 21.96 |
| | | 1 | 49 | 22.51 | 22.46 | 21.80 |
| | | 25 | 0 | 20.96 | 21.07 | 21.02 |
| | | 25 | 12 | 21.20 | 21.13 | 21.13 |
| | | 25 | 25 | 21.03 | 21.13 | 21.03 |
| | | 50 | 0 | 21.09 | 21.11 | 21.00 |
| | 64QAM | 1 | 0 | 21.51 | 21.29 | 21.42 |
| | | 1 | 24 | 21.69 | 21.32 | 21.74 |
| | | 1 | 49 | 21.59 | 21.37 | 21.64 |
| | | 25 | 0 | 20.58 | 20.57 | 20.53 |
| | | 25 | 12 | 20.58 | 20.69 | 20.70 |
| | | 25 | 25 | 20.60 | 20.68 | 20.62 |
| | | 50 | 0 | 20.60 | 20.60 | 20.69 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 132047<br>Frequency 1717.5 MHz | Mid CH 132322<br>Frequency 1745MHz | High CH 132597<br>Frequency 1772.5 MHz |
|---|---|---|---|---|---|---|
| 66/ 15 | QPSK | 1 | 0 | 23.14 | 22.82 | 22.91 |
| | | 1 | 37 | 23.29 | 22.90 | 23.23 |
| | | 1 | 74 | 22.99 | 22.82 | 23.09 |
| | | 36 | 0 | 22.02 | 21.86 | 21.90 |
| | | 36 | 19 | 22.06 | 21.99 | 21.94 |
| | | 36 | 39 | 22.04 | 21.96 | 21.88 |
| | | 75 | 0 | 21.94 | 21.90 | 21.91 |
| | 16QAM | 1 | 0 | 22.35 | 22.25 | 21.84 |
| | | 1 | 37 | 22.49 | 22.37 | 21.98 |
| | | 1 | 74 | 22.54 | 22.47 | 21.78 |
| | | 36 | 0 | 20.96 | 21.07 | 21.04 |
| | | 36 | 19 | 21.20 | 21.09 | 21.09 |
| | | 36 | 39 | 21.05 | 21.23 | 21.08 |
| | | 75 | 0 | 21.18 | 21.07 | 21.05 |
| | 64QAM | 1 | 0 | 21.43 | 21.18 | 21.48 |
| | | 1 | 37 | 21.67 | 21.25 | 21.67 |
| | | 1 | 74 | 21.59 | 21.38 | 21.65 |
| | | 36 | 0 | 20.64 | 20.59 | 20.53 |
| | | 36 | 19 | 20.59 | 20.69 | 20.65 |
| | | 36 | 39 | 20.69 | 20.72 | 20.60 |
| | | 75 | 0 | 20.65 | 20.49 | 20.60 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 132072 Frequency 1720MHz | Mid CH 132322 Frequency 1745MHz | High CH 132572 Frequency 1770MHz |
|---|---|---|---|---|---|---|
| 66/ 20 | QPSK | 1 | 0 | 23.25 | 22.91 | 23.02 |
| | | 1 | 50 | **23.31** | 22.98 | 23.24 |
| | | 1 | 99 | 23.09 | 22.95 | 23.19 |
| | | 50 | 0 | 22.10 | 21.95 | 21.96 |
| | | 50 | 25 | **22.13** | 22.06 | 22.02 |
| | | 50 | 50 | 22.09 | 21.97 | 21.90 |
| | | 100 | 0 | **22.07** | 22.04 | 22.03 |
| | 16QAM | 1 | 0 | 22.42 | 22.34 | 21.92 |
| | | 1 | 50 | 22.54 | 22.46 | 22.00 |
| | | 1 | 99 | 22.58 | 22.51 | 21.86 |
| | | 50 | 0 | 21.11 | 21.17 | 21.07 |
| | | 50 | 25 | 21.21 | 21.20 | 21.24 |
| | | 50 | 50 | 21.16 | 21.26 | 21.14 |
| | | 100 | 0 | 21.23 | 21.20 | 21.15 |
| | 64QAM | 1 | 0 | 21.58 | 21.31 | 21.57 |
| | | 1 | 50 | 21.70 | 21.39 | 21.79 |
| | | 1 | 99 | 21.69 | 21.41 | 21.70 |
| | | 50 | 0 | 20.66 | 20.70 | 20.66 |
| | | 50 | 25 | 20.68 | 20.72 | 20.79 |
| | | 50 | 50 | 20.72 | 20.73 | 20.74 |
| | | 100 | 0 | 20.66 | 20.61 | 20.71 |

**EIRP**

**WCDMA IV**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 1312 | 1712.4 | 22.6 | 0.2 | 22.8 | 190.55 | 1 |
| 1413 | 1732.6 | 22.65 | 0.2 | 22.85 | 192.75 | 1 |
| 1513 | 1752.6 | 22.61 | 0.2 | 22.81 | 190.99 | 1 |

**LTE BAND 4**
**CHANNEL BANDWIDTH: 1.4MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 19957 | 1710.7 | 23.53 | 0.2 | 23.73 | 236.05 | 1 |
| 20175 | 1732.5 | 23.58 | 0.2 | 23.78 | 238.78 | 1 |
| 20393 | 1754.3 | 23.2 | 0.2 | 23.4 | 218.78 | 1 |

**CHANNEL BANDWIDTH: 1.4MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 19957 | 1710.7 | 22.65 | 0.2 | 22.85 | 192.75 | 1 |
| 20175 | 1732.5 | 22.63 | 0.2 | 22.83 | 191.87 | 1 |
| 20393 | 1754.3 | 22.52 | 0.2 | 22.72 | 187.07 | 1 |

**CHANNEL BANDWIDTH: 1.4MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 19957 | 1710.7 | 21.67 | 0.2 | 21.87 | 153.82 | 1 |
| 20175 | 1732.5 | 21.66 | 0.2 | 21.86 | 153.46 | 1 |
| 20393 | 1754.3 | 21.47 | 0.2 | 21.67 | 146.89 | 1 |

**CHANNEL BANDWIDTH: 3MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 19965 | 1711.5 | 23.4 | 0.2 | 23.6 | 229.09 | 1 |
| 20175 | 1732.5 | 23.54 | 0.2 | 23.74 | 236.59 | 1 |
| 20385 | 1753.5 | 23.33 | 0.2 | 23.53 | 225.42 | 1 |

**CHANNEL BANDWIDTH: 3MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 19965 | 1711.5 | 22.63 | 0.2 | 22.83 | 191.87 | 1 |
| 20175 | 1732.5 | 22.63 | 0.2 | 22.83 | 191.87 | 1 |
| 20385 | 1753.5 | 22.63 | 0.2 | 22.83 | 191.87 | 1 |

**CHANNEL BANDWIDTH: 3MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 19965 | 1711.5 | 21.68 | 0.2 | 21.88 | 154.17 | 1 |
| 20175 | 1732.5 | 21.62 | 0.2 | 21.82 | 152.05 | 1 |
| 20385 | 1753.5 | 21.44 | 0.2 | 21.64 | 145.88 | 1 |

**CHANNEL BANDWIDTH: 5MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 19975 | 1712.5 | 23.49 | 0.2 | 23.69 | 233.88 | 1 |
| 20175 | 1732.5 | 23.54 | 0.2 | 23.74 | 236.59 | 1 |
| 20375 | 1752.5 | 23.34 | 0.2 | 23.54 | 225.94 | 1 |

**CHANNEL BANDWIDTH: 5MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 19975 | 1712.5 | 22.59 | 0.2 | 22.79 | 190.11 | 1 |
| 20175 | 1732.5 | 22.69 | 0.2 | 22.89 | 194.54 | 1 |
| 20375 | 1752.5 | 22.4 | 0.2 | 22.6 | 181.97 | 1 |

**CHANNEL BANDWIDTH: 5MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 19975 | 1712.5 | 21.65 | 0.2 | 21.85 | 153.11 | 1 |
| 20175 | 1732.5 | 21.73 | 0.2 | 21.93 | 155.96 | 1 |
| 20375 | 1752.5 | 21.42 | 0.2 | 21.62 | 145.21 | 1 |

**CHANNEL BANDWIDTH: 10MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20000 | 1715 | 23.47 | 0.2 | 23.67 | 232.81 | 1 |
| 20175 | 1732.5 | 23.52 | 0.2 | 23.72 | 235.5 | 1 |
| 20350 | 1750 | 23.21 | 0.2 | 23.41 | 219.28 | 1 |

**CHANNEL BANDWIDTH: 10MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20000 | 1715 | 22.68 | 0.2 | 22.88 | 194.09 | 1 |
| 20175 | 1732.5 | 22.66 | 0.2 | 22.86 | 193.2 | 1 |
| 20350 | 1750 | 22.33 | 0.2 | 22.53 | 179.06 | 1 |

**CHANNEL BANDWIDTH: 10MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20000 | 1715 | 21.65 | 0.2 | 21.85 | 153.11 | 1 |
| 20175 | 1732.5 | 21.76 | 0.2 | 21.96 | 157.04 | 1 |
| 20350 | 1750 | 21.4 | 0.2 | 21.6 | 144.54 | 1 |

**CHANNEL BANDWIDTH: 15MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20025 | 1717.5 | 23.46 | 0.2 | 23.66 | 232.27 | 1 |
| 20175 | 1732.5 | 23.57 | 0.2 | 23.77 | 238.23 | 1 |
| 20325 | 1747.5 | 23.2 | 0.2 | 23.4 | 218.78 | 1 |

**CHANNEL BANDWIDTH: 15MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20025 | 1717.5 | 22.68 | 0.2 | 22.88 | 194.09 | 1 |
| 20175 | 1732.5 | 22.7 | 0.2 | 22.9 | 194.98 | 1 |
| 20325 | 1747.5 | 22.35 | 0.2 | 22.55 | 179.89 | 1 |

**CHANNEL BANDWIDTH: 15MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20025 | 1717.5 | 21.65 | 0.2 | 21.85 | 153.11 | 1 |
| 20175 | 1732.5 | 21.63 | 0.2 | 21.83 | 152.41 | 1 |
| 20325 | 1747.5 | 21.52 | 0.2 | 21.72 | 148.59 | 1 |

**CHANNEL BANDWIDTH: 20MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20050 | 1720 | 23.54 | 0.2 | 23.74 | 236.59 | 1 |
| 20175 | 1732.5 | 23.61 | 0.2 | 23.81 | 240.44 | 1 |
| 20300 | 1745 | 23.35 | 0.2 | 23.55 | 226.46 | 1 |

**CHANNEL BANDWIDTH: 20MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20050 | 1720 | 22.69 | 0.2 | 22.89 | 194.54 | 1 |
| 20175 | 1732.5 | 22.74 | 0.2 | 22.94 | 196.79 | 1 |
| 20300 | 1745 | 22.42 | 0.2 | 22.62 | 182.81 | 1 |

**CHANNEL BANDWIDTH: 20MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20050 | 1720 | 21.7 | 0.2 | 21.9 | 154.88 | 1 |
| 20175 | 1732.5 | 21.77 | 0.2 | 21.97 | 157.4 | 1 |
| 20300 | 1745 | 21.53 | 0.2 | 21.73 | 148.94 | 1 |

**LTE BAND 66**

**CHANNEL BANDWIDTH: 1.4MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 131979 | 1710.7 | 23.2 | 0.2 | 23.4 | 218.78 | 1 |
| 132322 | 1745 | 22.98 | 0.2 | 23.18 | 207.97 | 1 |
| 132665 | 1779.3 | 23.11 | 0.2 | 23.31 | 214.29 | 1 |

**CHANNEL BANDWIDTH: 1.4MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 131979 | 1710.7 | 22.55 | 0.2 | 22.75 | 188.36 | 1 |
| 132322 | 1745 | 22.37 | 0.2 | 22.57 | 180.72 | 1 |
| 132665 | 1779.3 | 22.17 | 0.2 | 22.37 | 172.58 | 1 |

**CHANNEL BANDWIDTH: 1.4MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 131979 | 1710.7 | 21.69 | 0.2 | 21.89 | 154.53 | 1 |
| 132322 | 1745 | 21.67 | 0.2 | 21.87 | 153.82 | 1 |
| 132665 | 1779.3 | 21.76 | 0.2 | 21.96 | 157.04 | 1 |

**CHANNEL BANDWIDTH: 3MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 131987 | 1711.5 | 23.25 | 0.2 | 23.45 | 221.31 | 1 |
| 132322 | 1745 | 22.95 | 0.2 | 23.15 | 206.54 | 1 |
| 132657 | 1778.5 | 23.17 | 0.2 | 23.37 | 217.27 | 1 |

**CHANNEL BANDWIDTH: 3MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 131987 | 1711.5 | 22.56 | 0.2 | 22.76 | 188.8 | 1 |
| 132322 | 1745 | 22.42 | 0.2 | 22.62 | 182.81 | 1 |
| 132657 | 1778.5 | 21.88 | 0.2 | 22.08 | 161.44 | 1 |

**CHANNEL BANDWIDTH: 3MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 131987 | 1711.5 | 21.63 | 0.2 | 21.83 | 152.41 | 1 |
| 132322 | 1745 | 21.3 | 0.2 | 21.5 | 141.25 | 1 |
| 132657 | 1778.5 | 21.7 | 0.2 | 21.9 | 154.88 | 1 |

**CHANNEL BANDWIDTH: 5MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 131997 | 1712.5 | 23.21 | 0.2 | 23.41 | 219.28 | 1 |
| 132322 | 1745 | 22.9 | 0.2 | 23.1 | 204.17 | 1 |
| 132647 | 1777.5 | 23.18 | 0.2 | 23.38 | 217.77 | 1 |

**CHANNEL BANDWIDTH: 5MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 131997 | 1712.5 | 22.55 | 0.2 | 22.75 | 188.36 | 1 |
| 132322 | 1745 | 22.38 | 0.2 | 22.58 | 181.13 | 1 |
| 132647 | 1777.5 | 21.99 | 0.2 | 22.19 | 165.58 | 1 |

**CHANNEL BANDWIDTH: 5MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 131997 | 1712.5 | 21.59 | 0.2 | 21.79 | 151.01 | 1 |
| 132322 | 1745 | 21.31 | 0.2 | 21.51 | 141.58 | 1 |
| 132647 | 1777.5 | 21.77 | 0.2 | 21.97 | 157.4 | 1 |

**CHANNEL BANDWIDTH: 10MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132022 | 1715 | 23.2 | 0.2 | 23.4 | 218.78 | 1 |
| 132322 | 1745 | 22.94 | 0.2 | 23.14 | 206.06 | 1 |
| 132622 | 1775 | 23.2 | 0.2 | 23.4 | 218.78 | 1 |

**CHANNEL BANDWIDTH: 10MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132022 | 1715 | 22.51 | 0.2 | 22.71 | 186.64 | 1 |
| 132322 | 1745 | 22.46 | 0.2 | 22.66 | 184.5 | 1 |
| 132622 | 1775 | 21.96 | 0.2 | 22.16 | 164.44 | 1 |

**CHANNEL BANDWIDTH: 10MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132022 | 1715 | 22.51 | 0.2 | 22.71 | 186.64 | 1 |
| 132322 | 1745 | 22.46 | 0.2 | 22.66 | 184.5 | 1 |
| 132622 | 1775 | 21.96 | 0.2 | 22.16 | 164.44 | 1 |

**CHANNEL BANDWIDTH: 15MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132047 | 1717.5 | 23.29 | 0.2 | 23.49 | 223.36 | 1 |
| 132322 | 1745 | 22.9 | 0.2 | 23.1 | 204.17 | 1 |
| 132597 | 1772.5 | 23.23 | 0.2 | 23.43 | 220.29 | 1 |

**CHANNEL BANDWIDTH: 15MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132047 | 1717.5 | 22.54 | 0.2 | 22.74 | 187.93 | 1 |
| 132322 | 1745 | 22.47 | 0.2 | 22.67 | 184.93 | 1 |
| 132597 | 1772.5 | 21.98 | 0.2 | 22.18 | 165.2 | 1 |

**CHANNEL BANDWIDTH: 15MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132047 | 1717.5 | 21.67 | 0.2 | 21.87 | 153.82 | 1 |
| 132322 | 1745 | 21.38 | 0.2 | 21.58 | 143.88 | 1 |
| 132597 | 1772.5 | 21.67 | 0.2 | 21.87 | 153.82 | 1 |

**CHANNEL BANDWIDTH: 20MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132072 | 1720 | 23.31 | 0.2 | 23.51 | 224.39 | 1 |
| 132322 | 1745 | 22.98 | 0.2 | 23.18 | 207.97 | 1 |
| 132572 | 1770 | 23.24 | 0.2 | 23.44 | 220.8 | 1 |

**CHANNEL BANDWIDTH: 20MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132072 | 1720 | 22.58 | 0.2 | 22.78 | 189.67 | 1 |
| 132322 | 1745 | 22.51 | 0.2 | 22.71 | 186.64 | 1 |
| 132572 | 1770 | 22 | 0.2 | 22.2 | 165.96 | 1 |

**CHANNEL BANDWIDTH: 20MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132072 | 1720 | 21.7 | 0.2 | 21.9 | 154.88 | 1 |
| 132322 | 1745 | 21.41 | 0.2 | 21.61 | 144.88 | 1 |
| 132572 | 1770 | 21.79 | 0.2 | 21.99 | 158.12 | 1 |

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

## 3.2 FREQUENCY STABILITY MEASUREMENT

### 3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

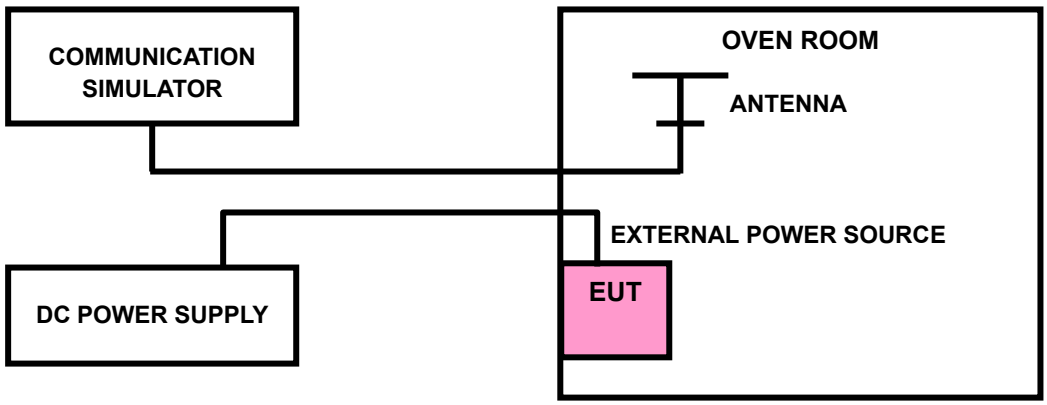
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

### 3.2.2 TEST PROCEDURE

a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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

### 3.2.3 TEST SETUP



### 3.2.4 TEST RESULTS

Please Refer to Appendix Of this test report.

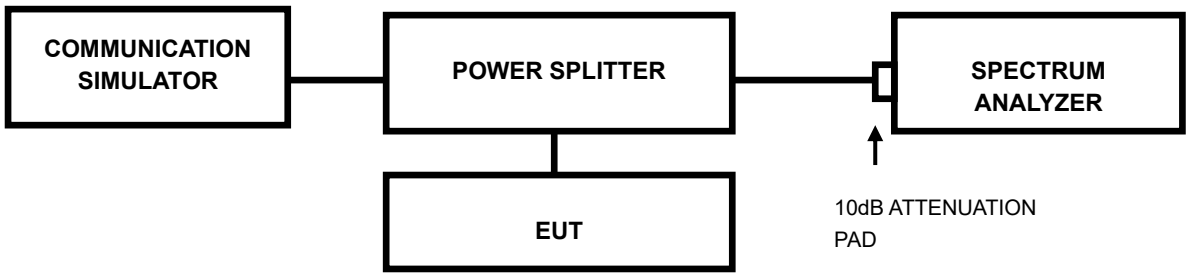
Note: VL = Low voltage(3.6V); VN/NV = Normal voltage(3.87V); VH = High voltage(4.45V);
NT = Normal temperature (25℃)

## 3.3 OCCUPIED BANDWIDTH MEASUREMENT

### 3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

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

### 3.3.2 TEST SETUP




### 3.3.3 TEST PROCEDURES

a. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
b. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

### 3.3.4 TEST RESULTS

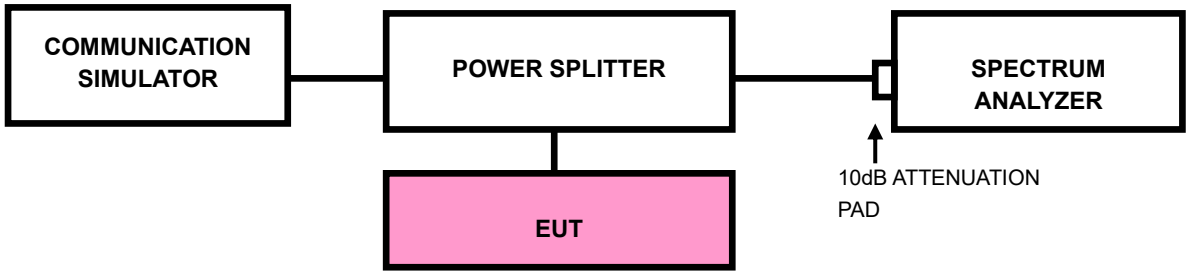
Please Refer to Appendix Of this test report.

## 3.4 BAND EDGE MEASUREMENT

### 3.4.1 LIMITS OF BAND EDGE MEASUREMENT

According to FCC Part 27.53(h) specified that For operations in the 1710-1755 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

### 3.4.2 TEST SETUP



### 3.4.3 TEST PROCEDURES

a) Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.

b) Tune the analyzer to the nominal center frequency of the emission bandwidth (EBW).

c) Set the resolution bandwidth (RBW) ≧ 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.

d) Beyond the 1MHz band from the band edge, RBW=1MHz was used.

e) Set the video bandwidth (VBW) to ≧3 x RBW.

f) Select the average power (RMS) display detector.

g) Set the number of measurement points to ≧ 1001.

h) Use auto-coupled sweep time.

i) Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.

j) The RF fundamental frequency should be excluded against the limit line in the operating frequency band and use RBW is 10KHz or 100KHz.

k) Record the max trace plot into the test report.

### 3.4.4 TEST RESULTS

Please Refer to Appendix Of this test report.

## 3.5 CONDUCTED SPURIOUS EMISSIONS

### 3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

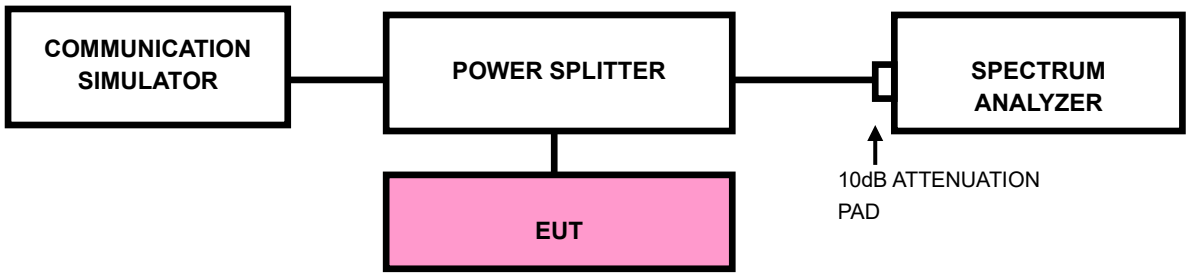
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

### 3.5.2 TEST PROCEDURE

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

b. Measuring frequency range is from 9kHz up to a frequency including its 10$^{th}$ harmonic. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

### 3.5.3 TEST SETUP



### 3.5.4 TEST RESULTS

NOTE：The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

Please Refer to Appendix Of this test report.

## 3.6 RADIATED EMISSION MEASUREMENT

### 3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

.

### 3.6.2 TEST PROCEDURES

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step a. Record the power level of S.G.
c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

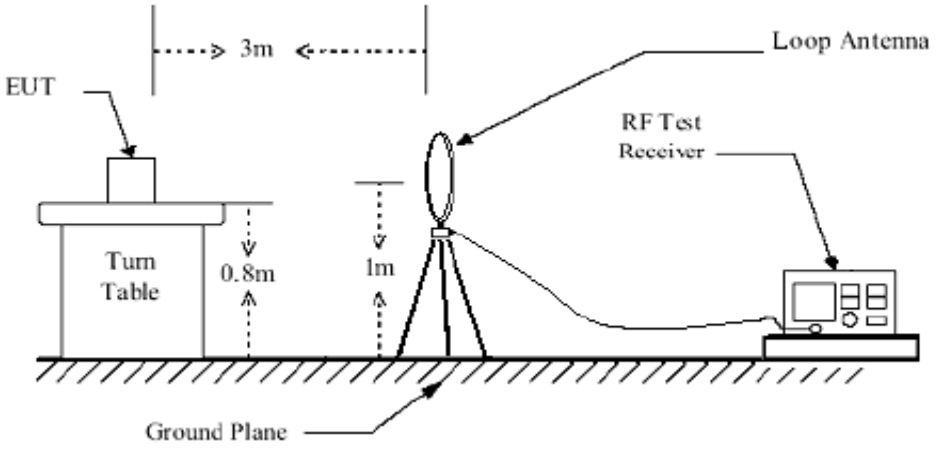
**NOTE:** The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

### 3.6.3 DEVIATION FROM TEST STANDARD

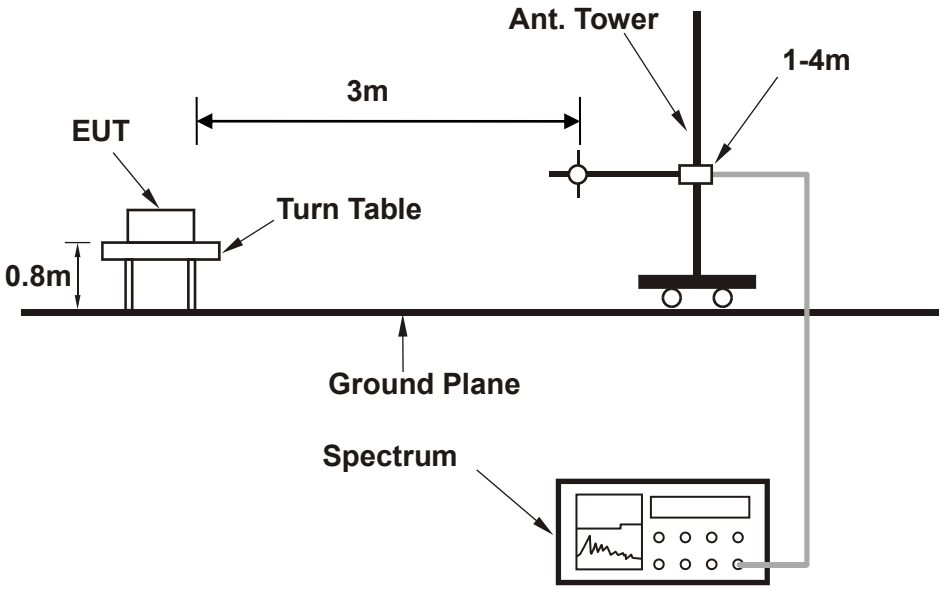
No deviation

## 3.6.4 TEST SETUP

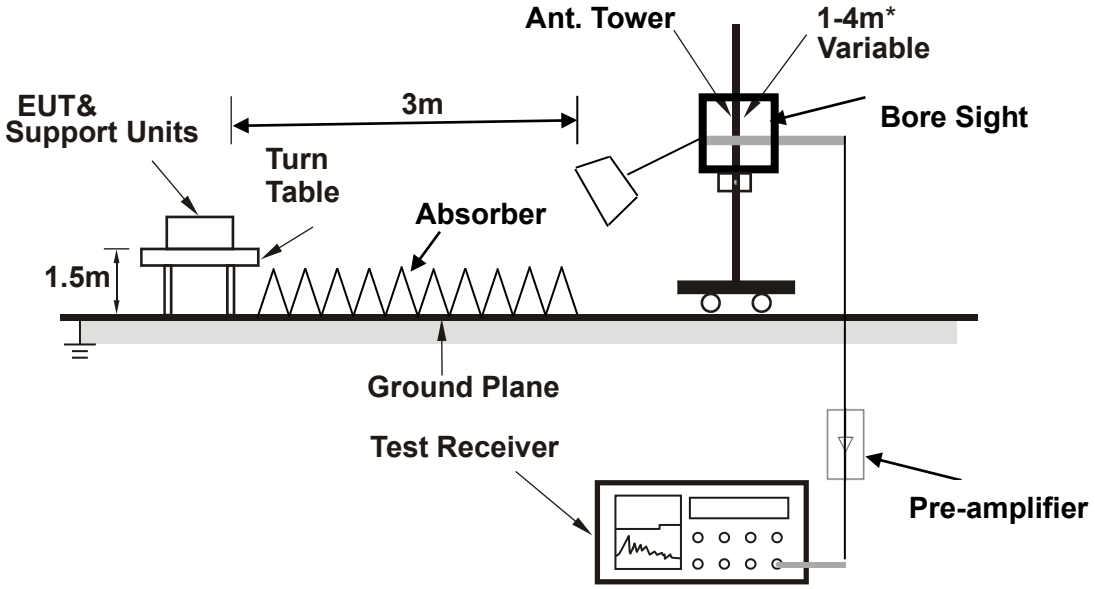
**< Frequency Range below 30MHz >**




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



**<Frequency Range above 1GHz>**




**Note**: Above 1G is a directional antenna depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

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

## 3.6.5 TEST RESULTS

NOTE：The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

**BELOW 1GHz WORST-CASE DATA**

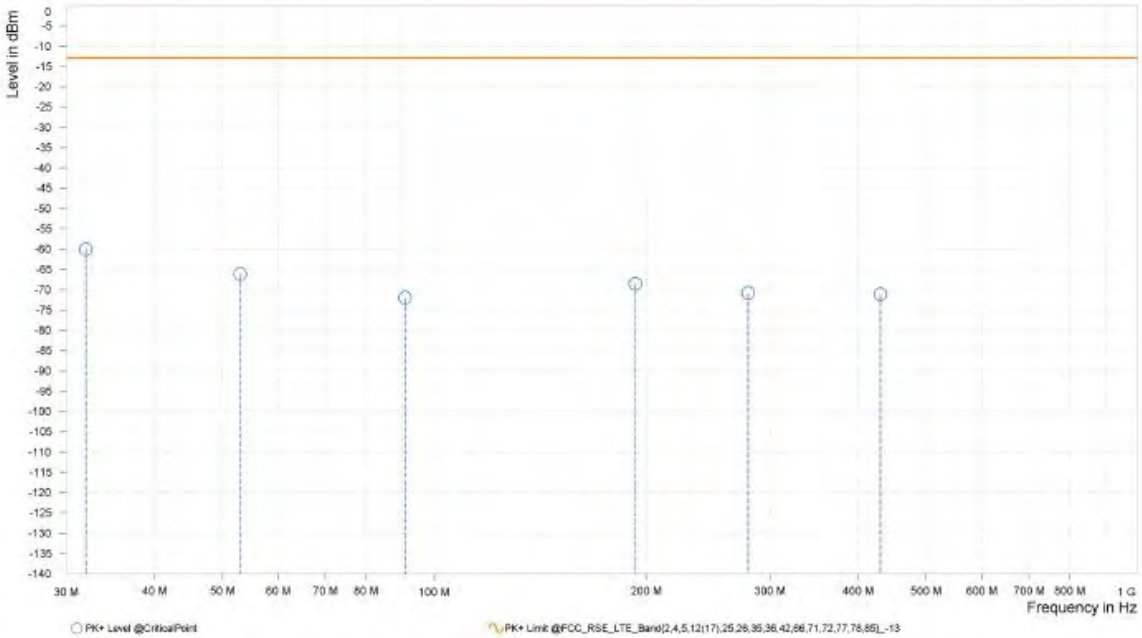
**30 MHz – 1GHz data:**

**LTE Band 66**

**CHANNEL BANDWIDTH: 10MHz / QPSK**

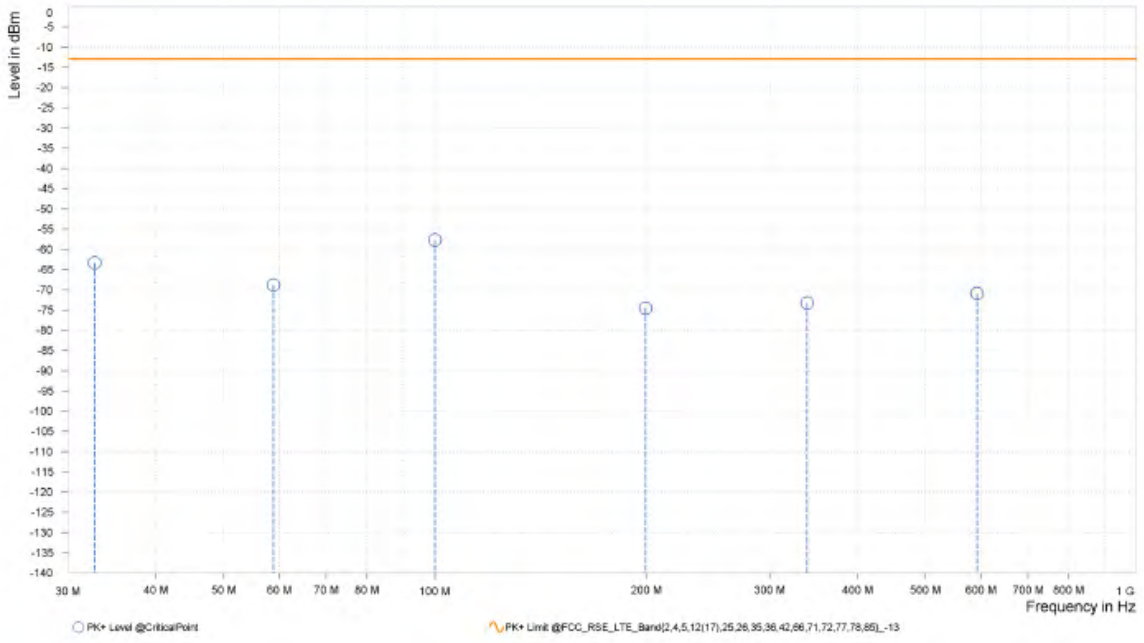
| | | | |
|---|---|---|---|
| **MODE** | TX channel 132322 | **FREQUENCY RANGE** | Below 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60HZ |
| **TESTED BY** | Hanwen Xu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 1 | 32.000 | -60.04 | -13.00 | 47.04 | 4.56 | H | 1 | 2.00 |
| 1 | 53.000 | -66.15 | -13.00 | 53.15 | 1.37 | H | 274.2 | 1.00 |
| 1 | 90.900 | -72.01 | -13.00 | 59.01 | -5.84 | H | 146.7 | 2.00 |
| 1 | 193.200 | -68.56 | -13.00 | 55.56 | 0.11 | H | 97.3 | 1.00 |
| 1 | 279.350 | -70.84 | -13.00 | 57.84 | 3.66 | H | 215.6 | 1.00 |
| 1 | 430.650 | -71.10 | -13.00 | 58.10 | 7.73 | H | 355.7 | 2.00 |



| MODE | TX channel 132322 | FREQUENCY RANGE | Below 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Hanwen Xu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 1 | 32.750 | -63.31 | -13.00 | 50.31 | -1.73 | V | 17.9 | 2.00 |
| 1 | 58.900 | -68.77 | -13.00 | 55.77 | 1.28 | V | 17.9 | 2.00 |
| 1 | 100.000 | -57.67 | -13.00 | 44.67 | 9.62 | V | 355 | 2.00 |
| 1 | 199.700 | -74.54 | -13.00 | 61.54 | -1.62 | V | 318.5 | 1.00 |
| 1 | 339.000 | -73.23 | -13.00 | 60.23 | 4.97 | V | 357.5 | 1.00 |
| 2 | 592.450 | -70.93 | -13.00 | 57.93 | 5.66 | V | 358.3 | 1.00 |



**ABOVE 1GHz**

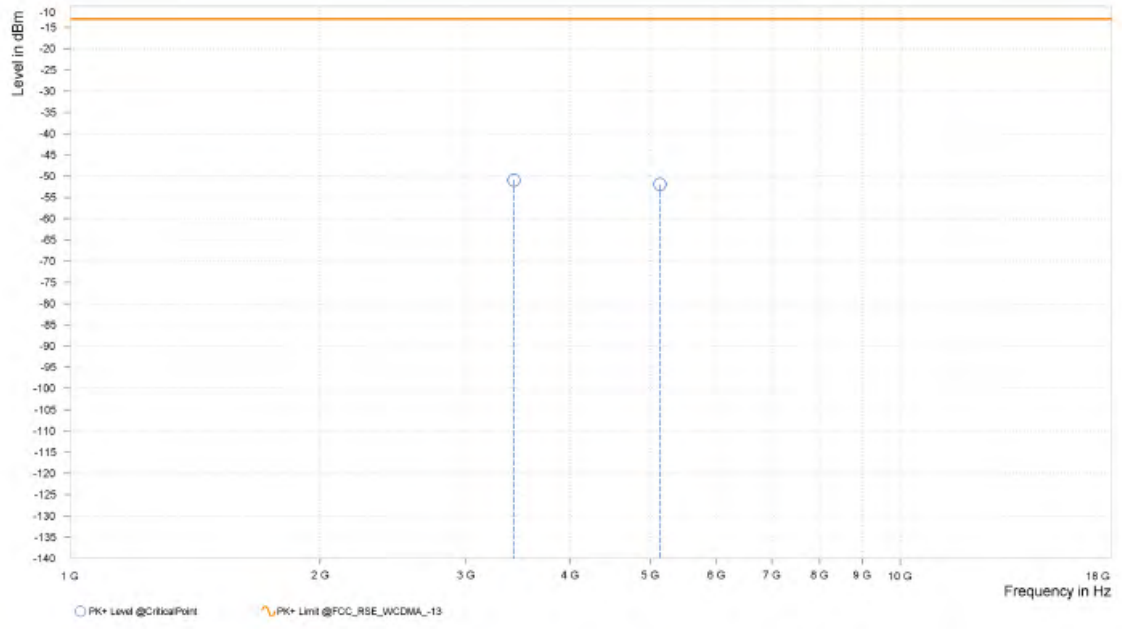
**Note:** For higher frequency, the emission is too low to be detected.

**WCDMA Band IV:**

**CH 1312**

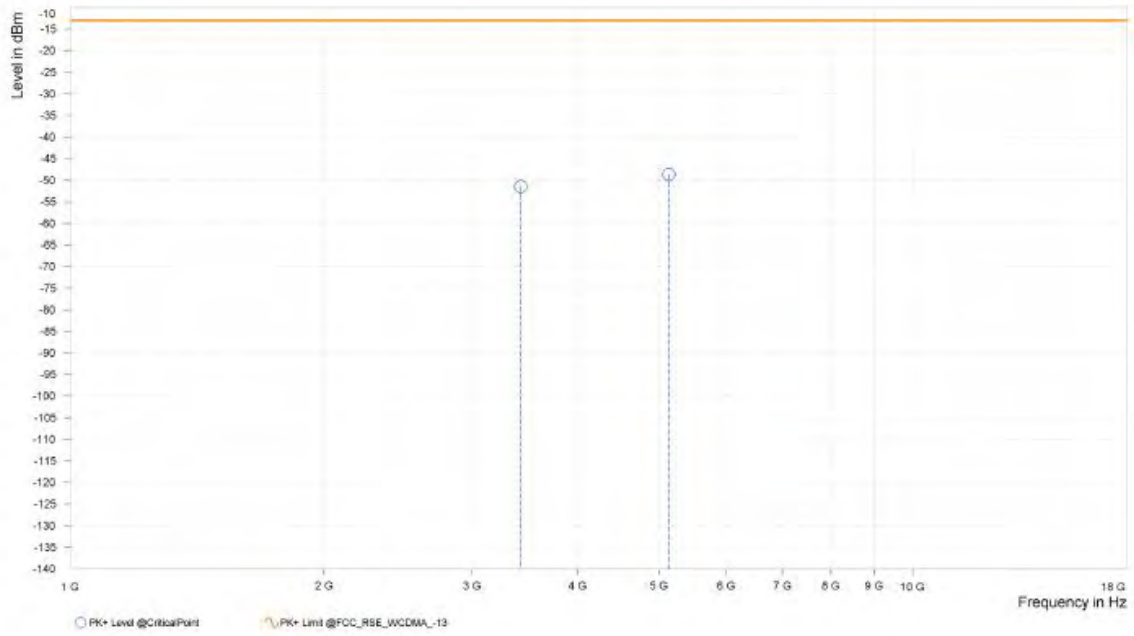
| | | | |
|---|---|---|---|
| **MODE** | TX channel 1312 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60HZ |
| **TESTED BY** | Jace Hu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,425.000 | -50.96 | -13.00 | 37.96 | 20.64 | H | 359 | 2.00 |
| 4 | 5,137.000 | -51.91 | -13.00 | 38.91 | 23.11 | H | 1 | 2.00 |



| MODE | TX channel 1312 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

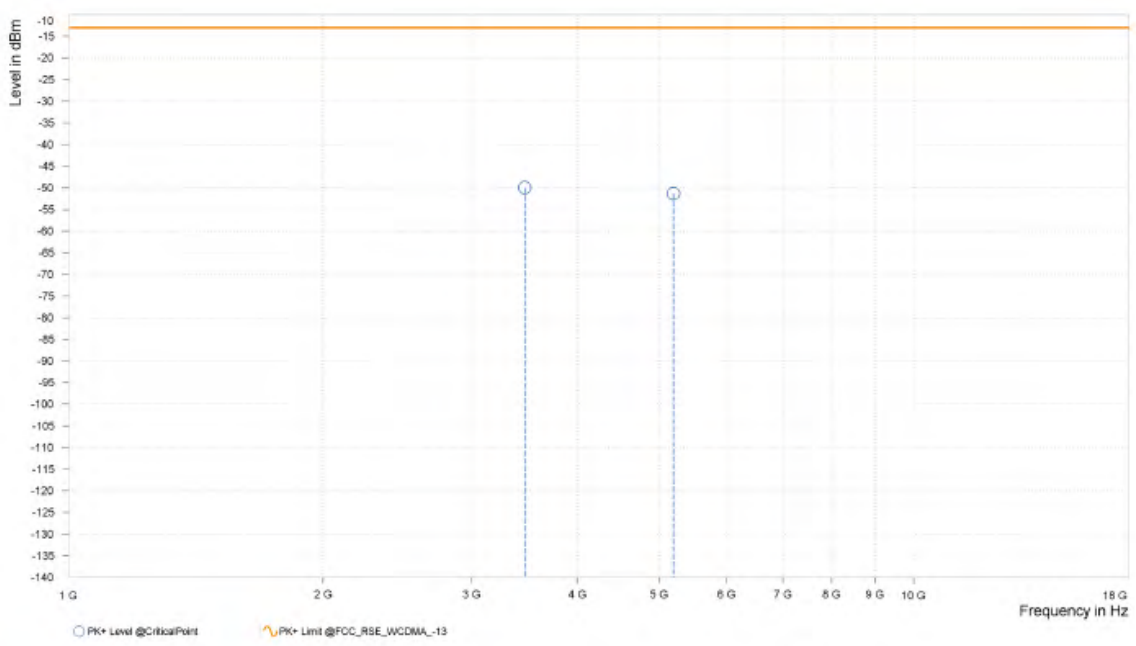
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,425.000 | -51.46 | -13.00 | 38.46 | 21.03 | V | 359 | 1.00 |
| 4 | 5,137.000 | -48.66 | -13.00 | 35.66 | 23.39 | V | 1 | 1.00 |



**CH 1413**

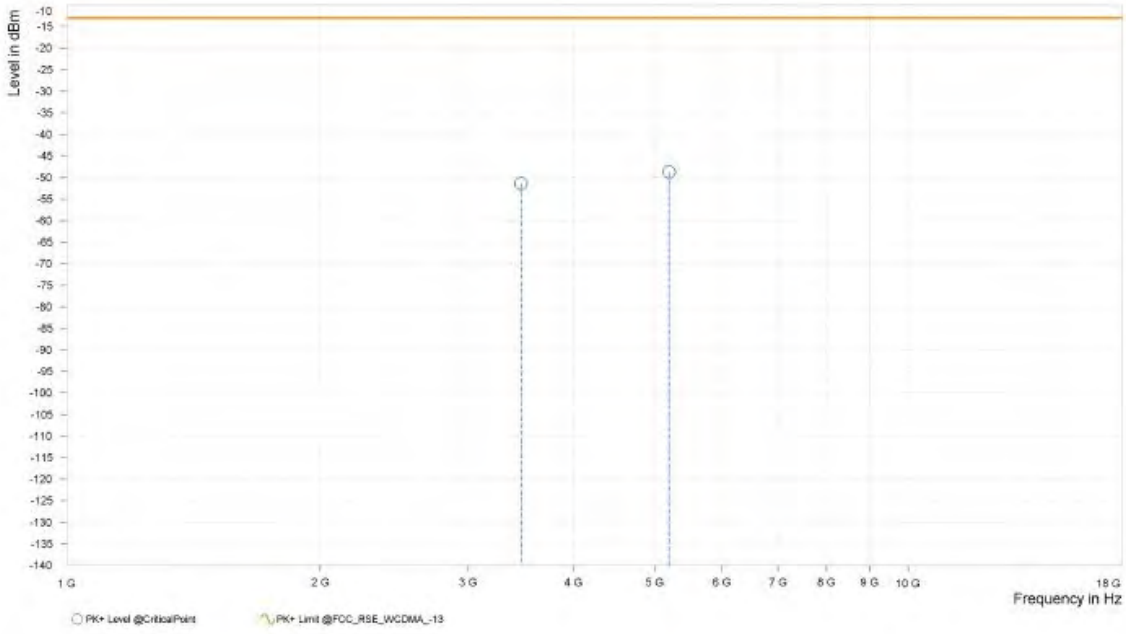
| MODE | TX channel 1413 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,465.000 | -49.98 | -13.00 | 36.98 | 20.40 | H | 185.8 | 1.00 |
| 4 | 5,198.000 | -51.30 | -13.00 | 38.30 | 23.43 | H | 359 | 2.00 |



| MODE | TX channel 1413 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

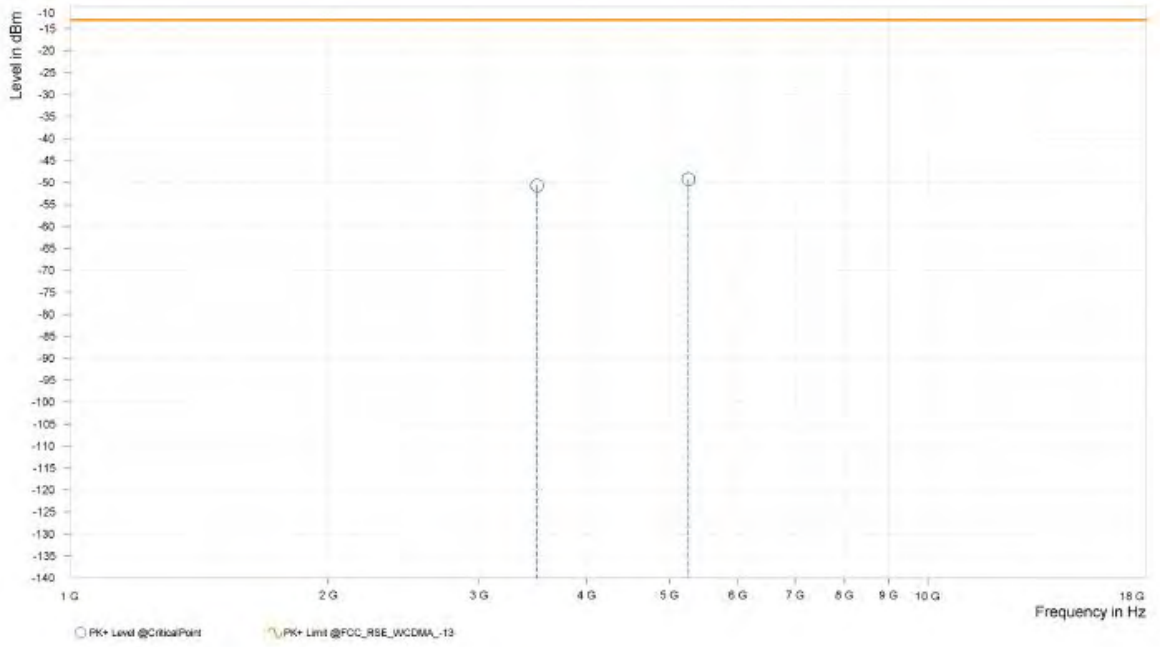
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,465.000 | -51.42 | -13.00 | 38.42 | 21.09 | V | 175 | 1.00 |
| 4 | 5,198.000 | -48.73 | -13.00 | 35.73 | 24.03 | V | 1 | 1.00 |



**CH 1513**

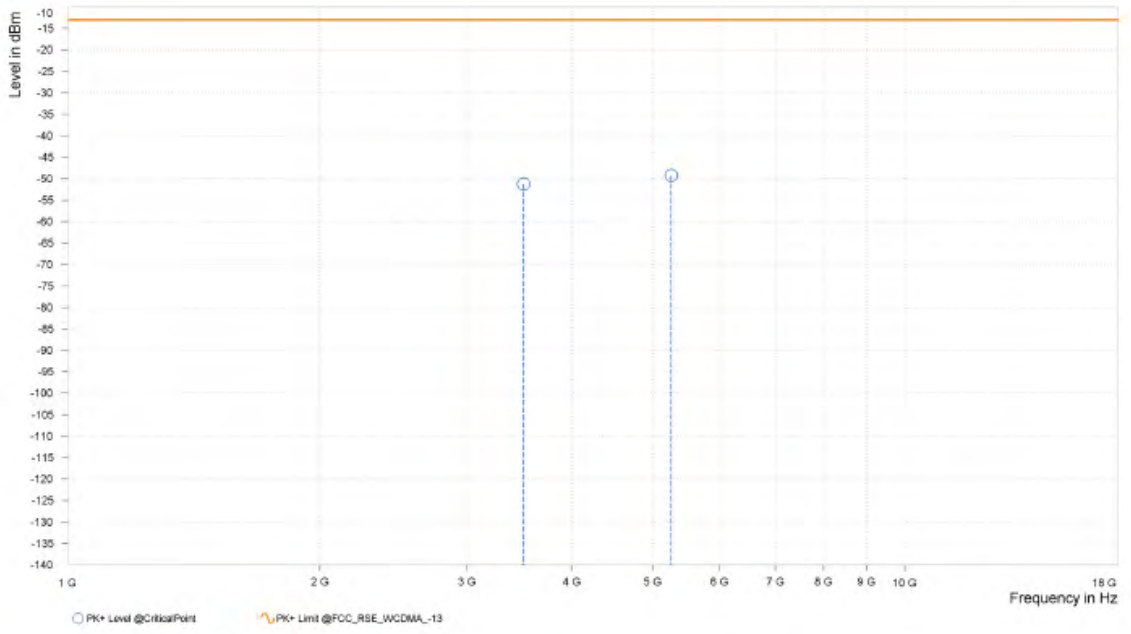
| MODE | TX channel 1513 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,505.000 | -50.67 | -13.00 | 37.67 | 20.55 | H | 355.8 | 1.00 |
| 4 | 5,258.000 | -49.27 | -13.00 | 36.27 | 23.64 | H | 359.1 | 1.00 |



| MODE | TX channel 1513 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,505.000 | -51.26 | -13.00 | 38.26 | 21.28 | V | 1 | 2.00 |
| 4 | 5,258.000 | -49.24 | -13.00 | 36.24 | 24.12 | V | 1 | 1.00 |

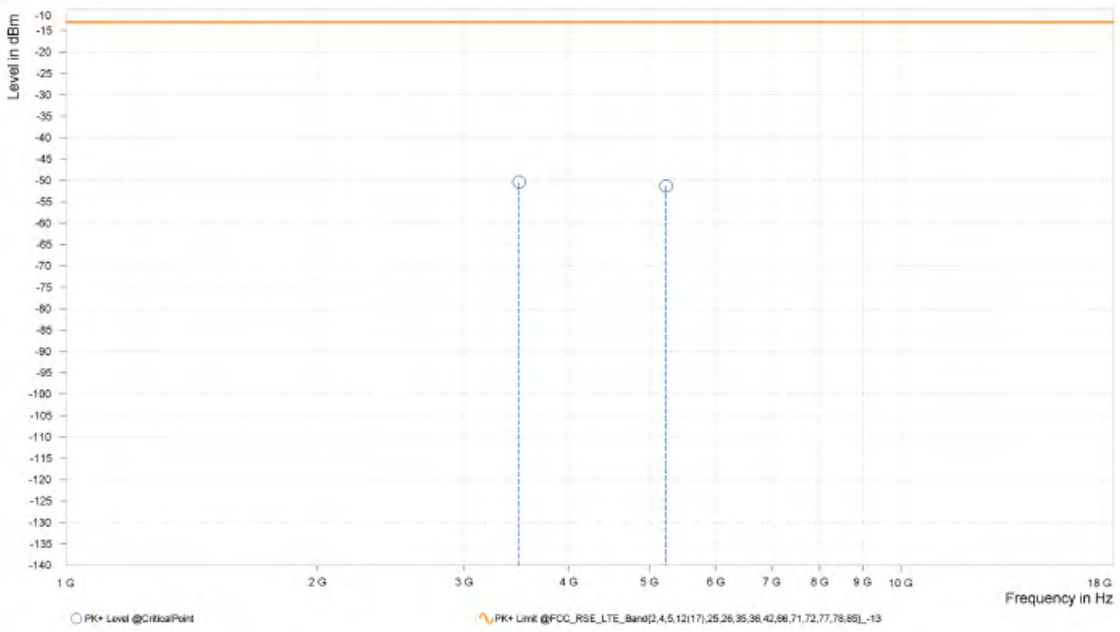


**LTE B66**

**CHANNEL BANDWIDTH: 1.4MHz / QPSK**

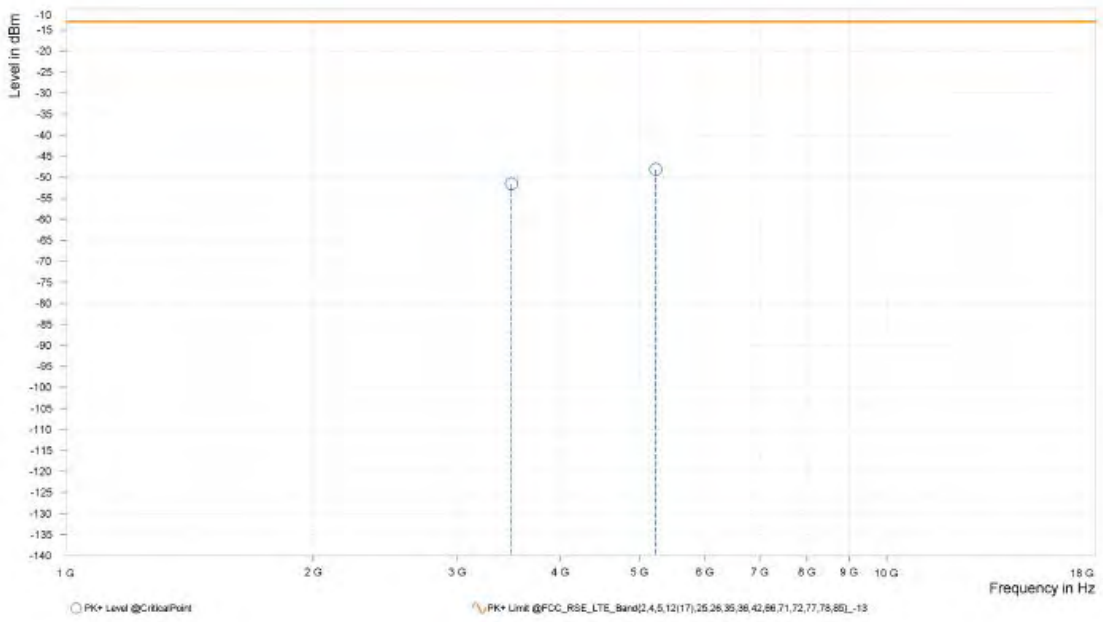
| | | | |
|---|---|---|---|
| **MODE** | TX channel 132322 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60HZ |
| **TESTED BY** | Hanwen Xu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,488.740 | -50.41 | -13.00 | 37.41 | 20.51 | H | 157 | 2.00 |
| 4 | 5,233.110 | -51.30 | -13.00 | 38.30 | 23.57 | H | 338.2 | 1.00 |



| MODE | TX channel 132322 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Hanwen Xu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

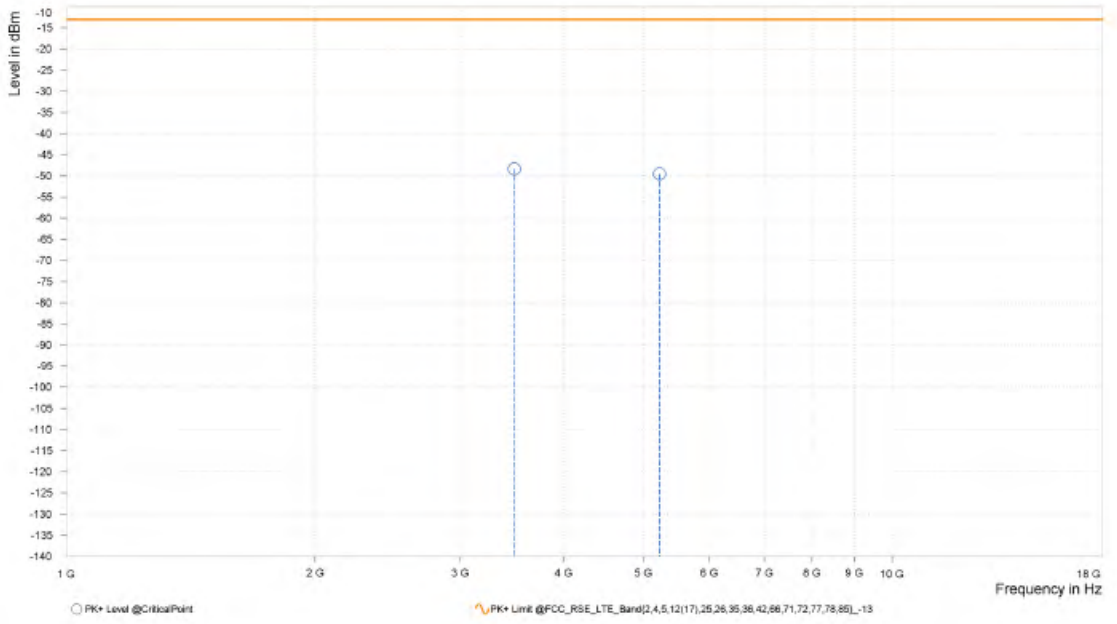
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,488.740 | -51.55 | -13.00 | 38.55 | 21.30 | V | 0.8 | 2.00 |
| 4 | 5,233.110 | -48.16 | -13.00 | 35.16 | 24.10 | V | 266 | 2.00 |



**CHANNEL BANDWIDTH: 3MHz / QPSK**

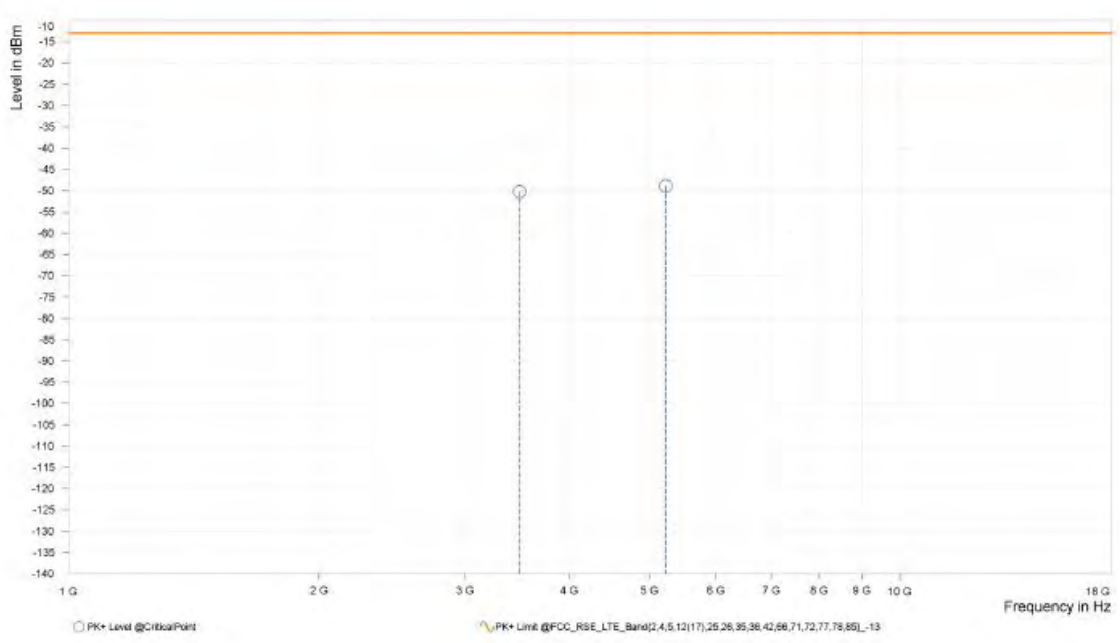
| | | | |
|---|---|---|---|
| **MODE** | TX channel 132322 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60HZ |
| **TESTED BY** | Hanwen Xu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,487.300 | -48.36 | -13.00 | 35.36 | 20.50 | H | 158.3 | 2.00 |
| 4 | 5,230.950 | -49.53 | -13.00 | 36.53 | 23.56 | H | 265.9 | 2.00 |



| MODE | TX channel 132322 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Hanwen Xu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

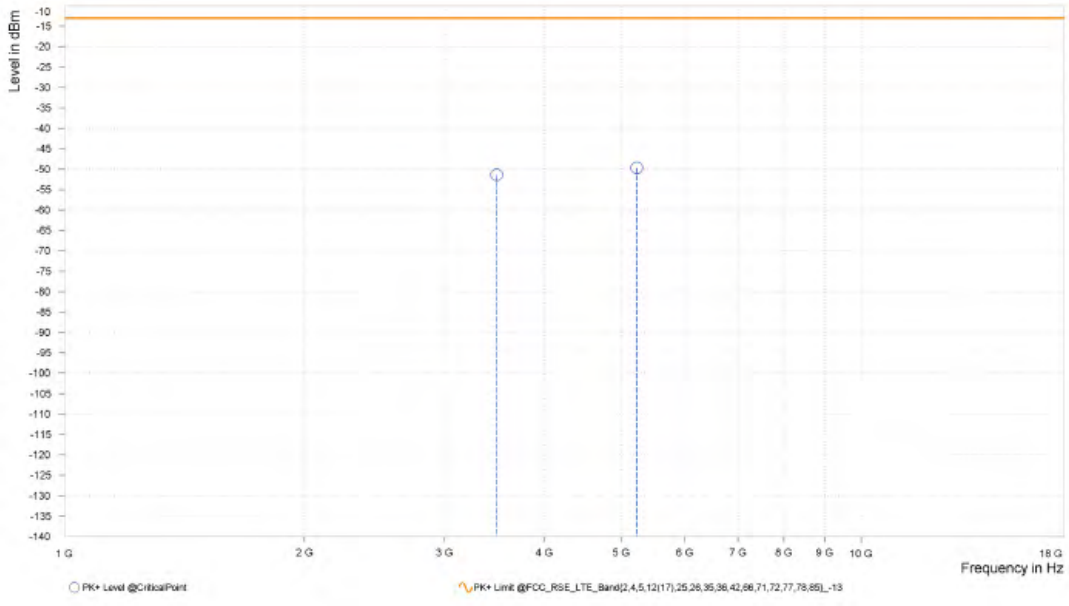
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,487.300 | -50.25 | -13.00 | 37.25 | 21.29 | V | 23.2 | 2.00 |
| 4 | 5,230.950 | -48.87 | -13.00 | 35.87 | 24.09 | V | 334.6 | 1.00 |



**CHANNEL BANDWIDTH: 5MHz / QPSK**

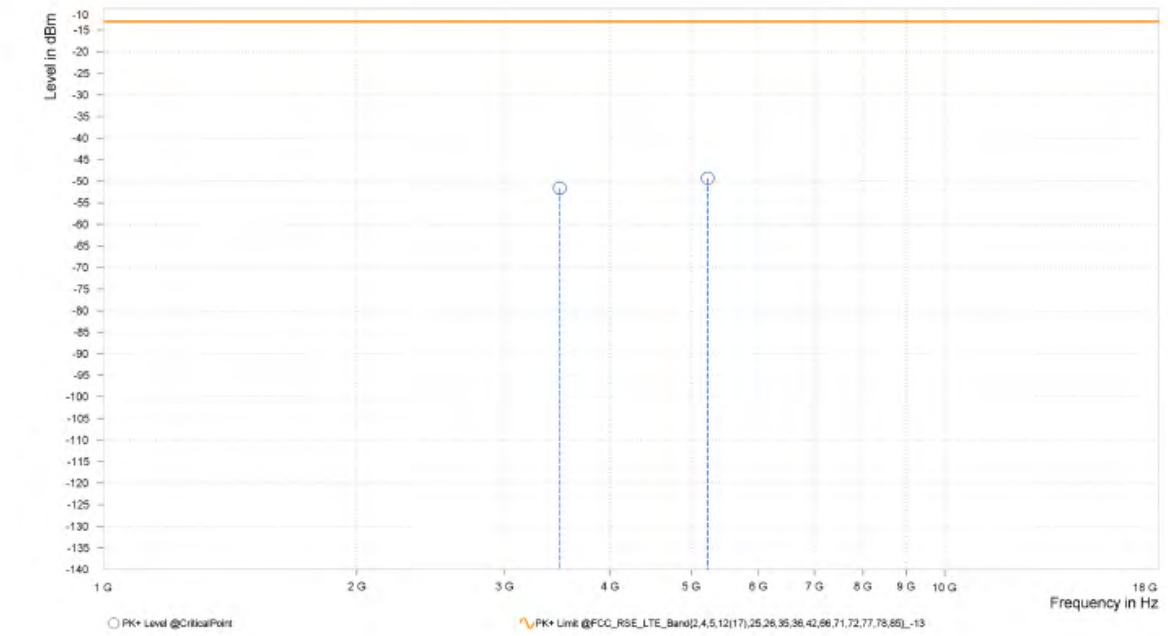
| | | | |
|---|---|---|---|
| **MODE** | TX channel 132322 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60HZ |
| **TESTED BY** | Hanwen Xu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,485.500 | -51.42 | -13.00 | 38.42 | 20.49 | H | 149.9 | 1.00 |
| 4 | 5,228.250 | -49.67 | -13.00 | 36.67 | 23.55 | H | 211.3 | 2.00 |



| MODE | TX channel 132322 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Hanwen Xu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,485.500 | -51.66 | -13.00 | 38.66 | 21.27 | V | 148.6 | 1.00 |
| 4 | 5,228.250 | -49.32 | -13.00 | 36.32 | 24.09 | V | 1 | 1.00 |

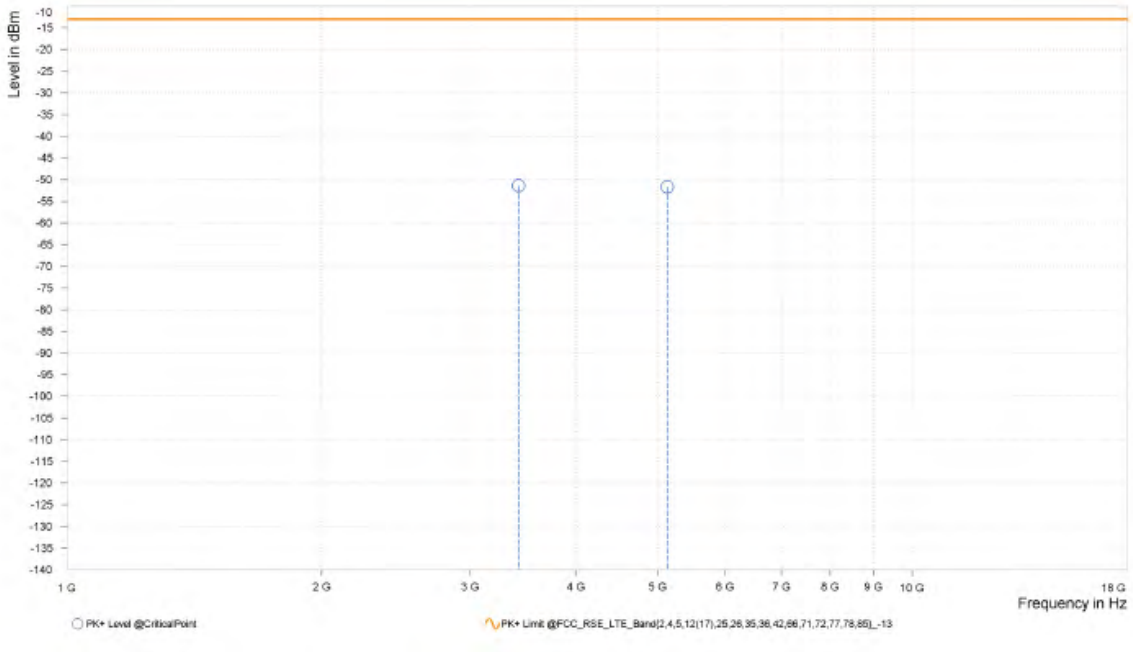


**CHANNEL BANDWIDTH: 10MHz / QPSK**

**CH132022**

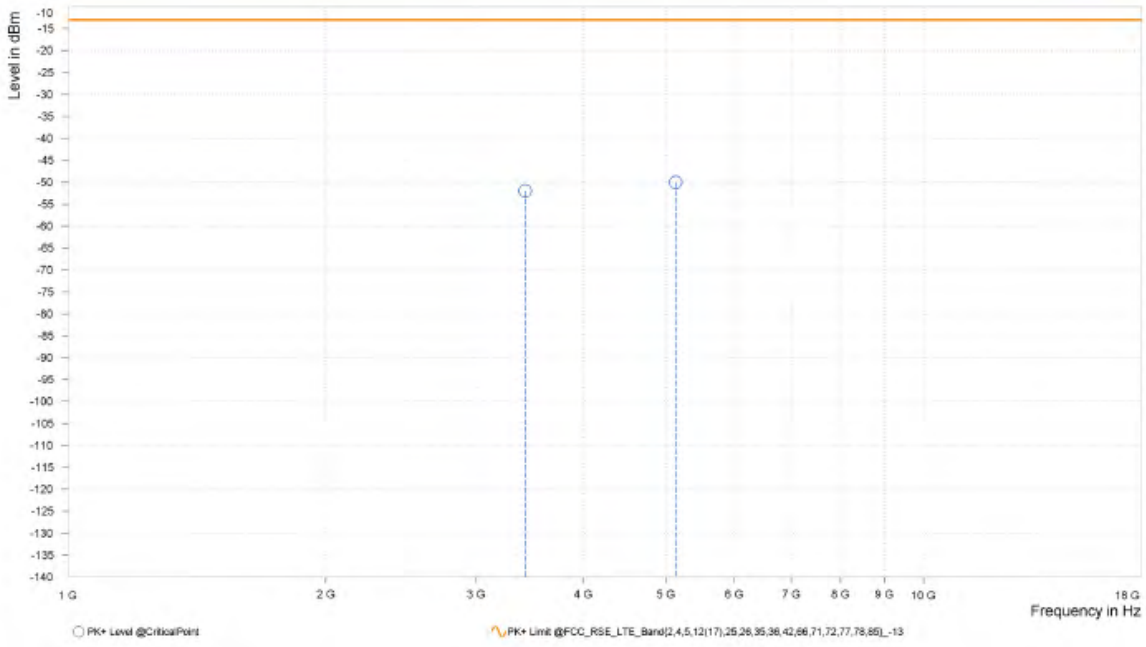
| | | | |
|---|---|---|---|
| **MODE** | TX channel 132022 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60HZ |
| **TESTED BY** | Hanwen Xu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,421.000 | -51.41 | -13.00 | 38.41 | 20.66 | H | 0.9 | 2.00 |
| 4 | 5,131.500 | -51.72 | -13.00 | 38.72 | 23.08 | H | 149.9 | 1.00 |



| MODE | TX channel 132022 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Hanwen Xu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

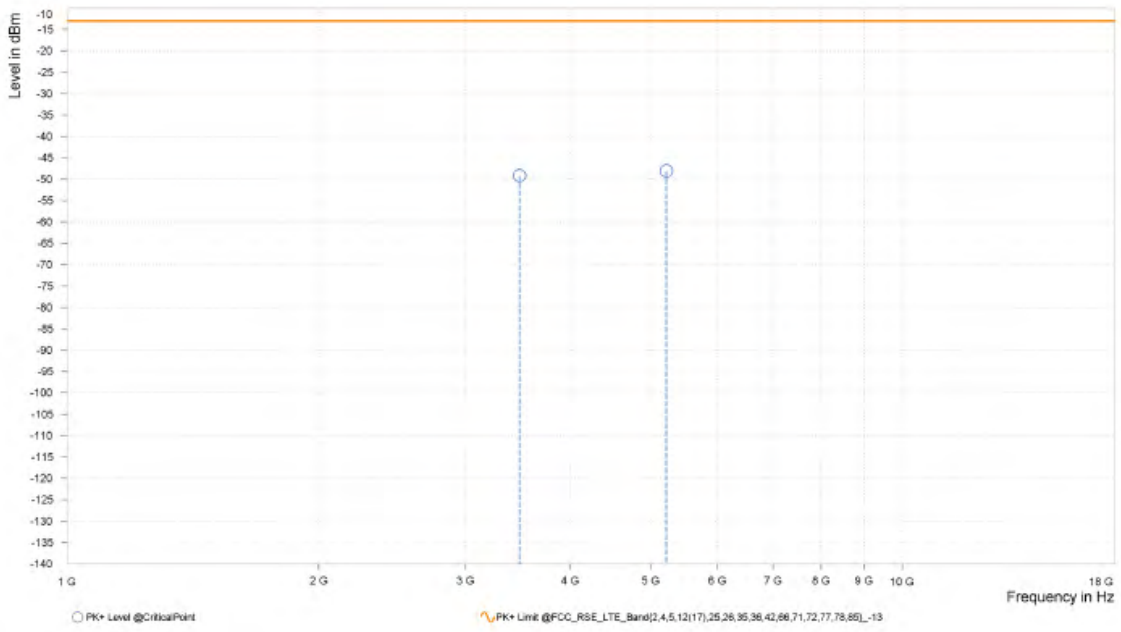
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,421.000 | -51.98 | -13.00 | 38.98 | 21.00 | V | 359.1 | 1.00 |
| 4 | 5,131.500 | -50.04 | -13.00 | 37.04 | 23.40 | V | 211.3 | 2.00 |



**CH132322**

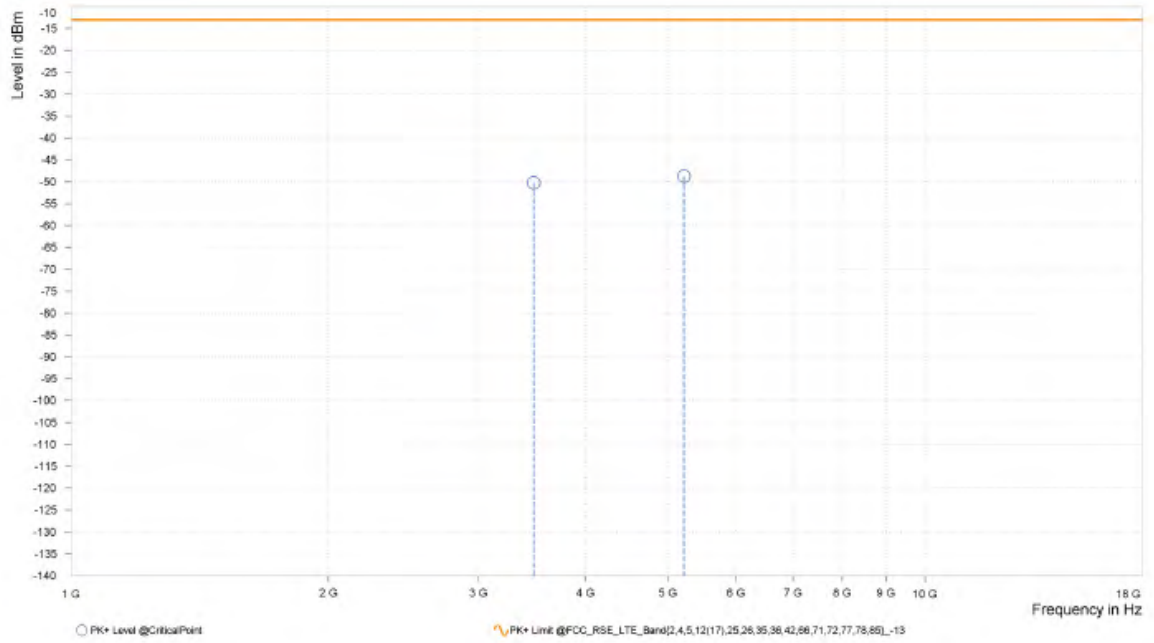
| | | | |
|---|---|---|---|
| **MODE** | TX channel 132322 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60HZ |
| **TESTED BY** | Hanwen Xu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,481.000 | -49.19 | -13.00 | 36.19 | 20.47 | H | 1 | 1.00 |
| 4 | 5,221.500 | -48.09 | -13.00 | 35.09 | 23.52 | H | 157 | 1.00 |



| MODE | TX channel 132322 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Hanwen Xu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

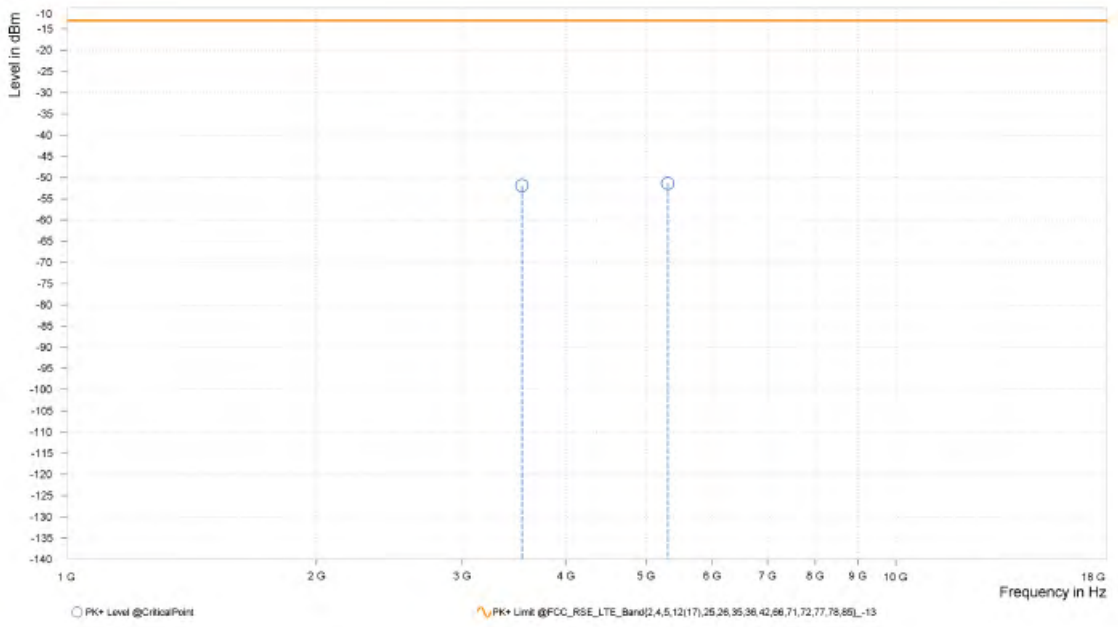
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,481.000 | -50.23 | -13.00 | 37.23 | 21.23 | V | 13.4 | 2.00 |
| 4 | 5,221.500 | -48.75 | -13.00 | 35.75 | 24.08 | V | 359.1 | 1.00 |



**CH132622**

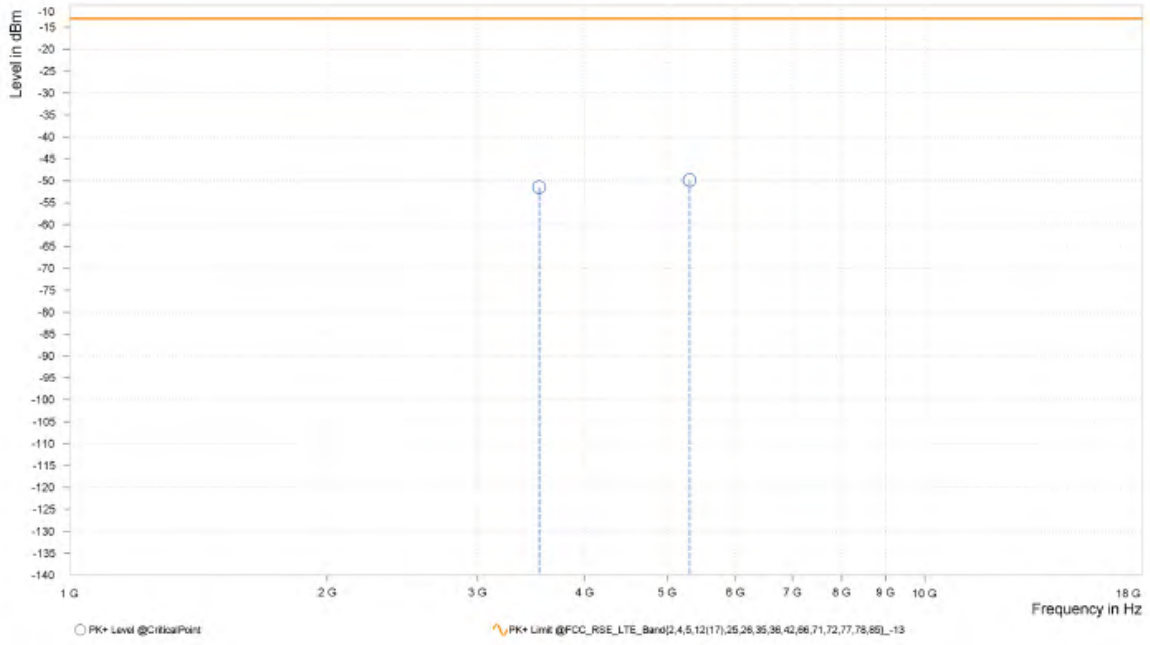
| | | | |
|---|---|---|---|
| **MODE** | TX channel 132622 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60HZ |
| **TESTED BY** | Hanwen Xu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,541.000 | -51.90 | -13.00 | 38.90 | 20.63 | H | 359 | 2.00 |
| 4 | 5,311.500 | -51.40 | -13.00 | 38.40 | 23.62 | H | 359.1 | 1.00 |



| MODE | TX channel 132622 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Hanwen Xu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

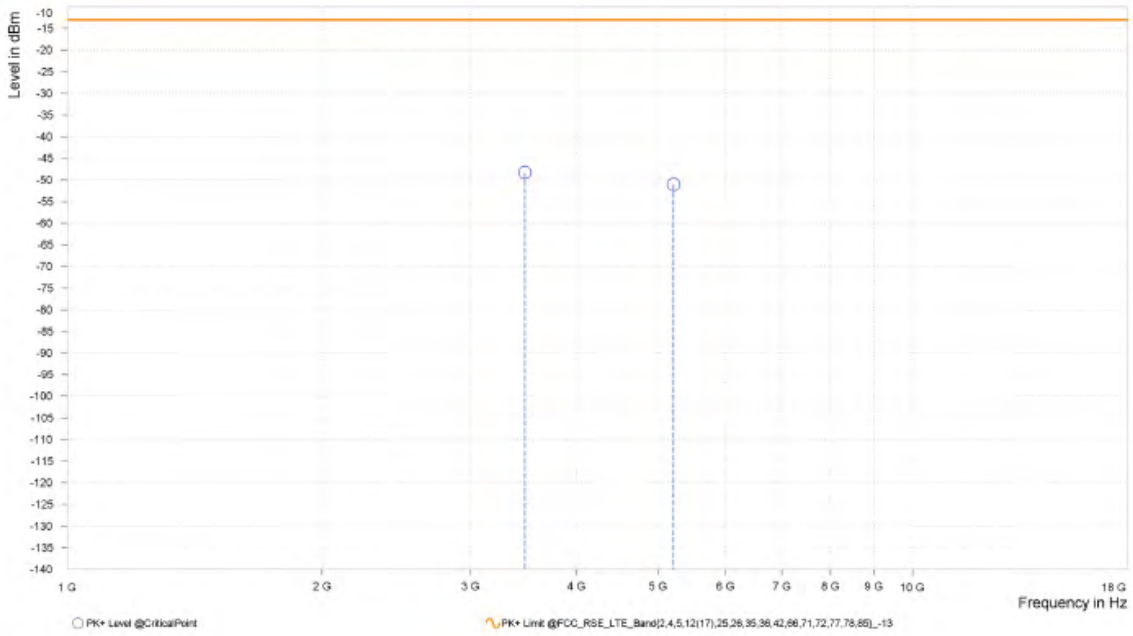
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,541.000 | -51.49 | -13.00 | 38.49 | 21.15 | V | 0.9 | 2.00 |
| 4 | 5,311.500 | -49.91 | -13.00 | 36.91 | 24.14 | V | 0.9 | 2.00 |



**CHANNEL BANDWIDTH: 15MHz / QPSK**

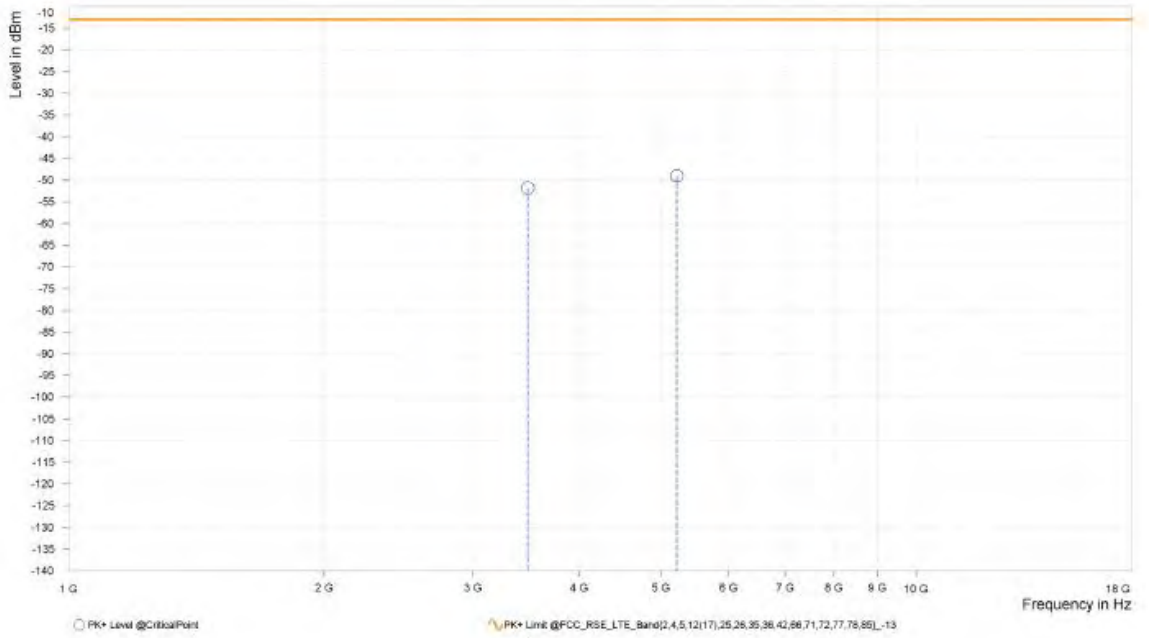
| | | | |
|---|---|---|---|
| **MODE** | TX channel 132322 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60HZ |
| **TESTED BY** | Hanwen Xu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,476.500 | -48.32 | -13.00 | 35.32 | 20.45 | H | 152.3 | 1.00 |
| 4 | 5,214.750 | -51.05 | -13.00 | 38.05 | 23.50 | H | 0.9 | 2.00 |



| MODE | TX channel 132322 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Hanwen Xu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

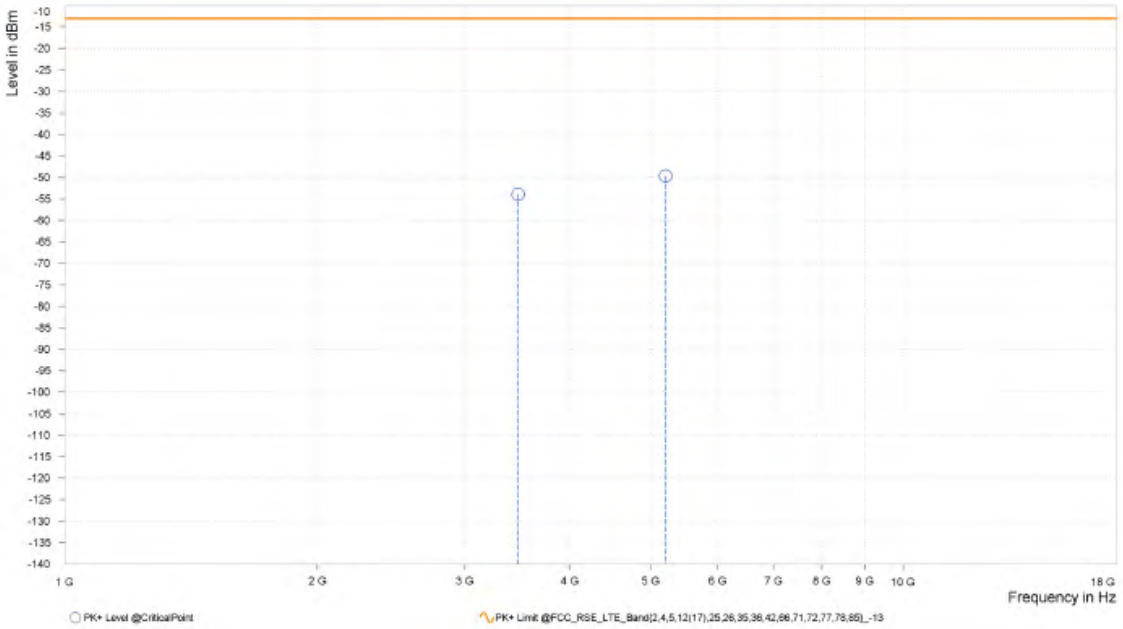
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,481.000 | -51.83 | -13.00 | 38.83 | 21.23 | V | 322 | 1.00 |
| 4 | 5,221.500 | -49.05 | -13.00 | 36.05 | 24.08 | V | 359.1 | 1.00 |



**CHANNEL BANDWIDTH: 20MHz / QPSK**

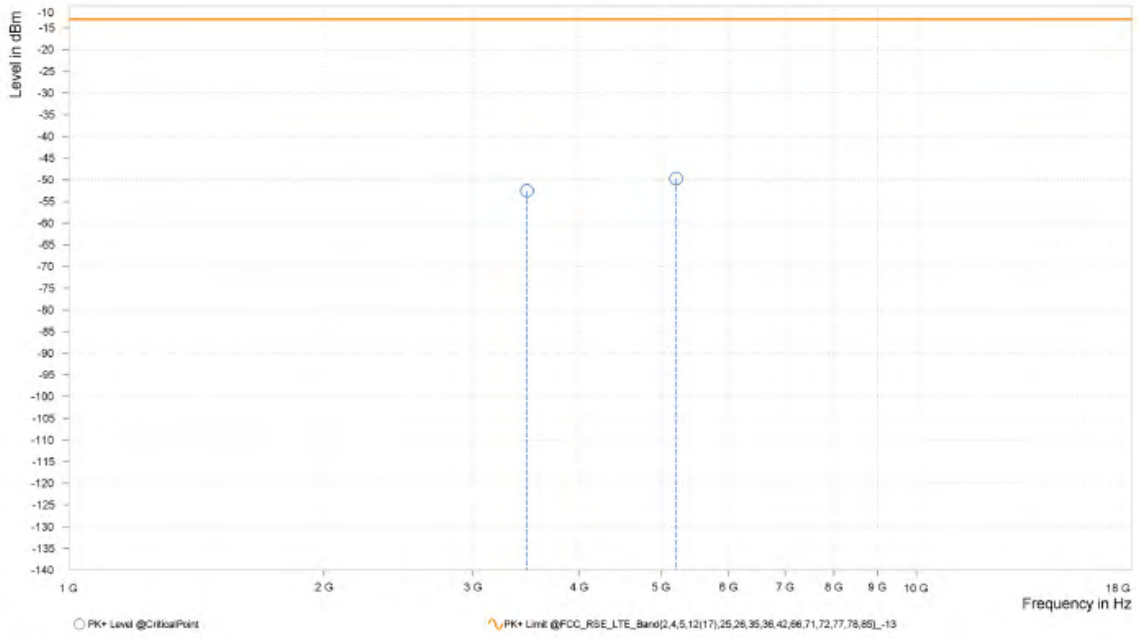
| | | | |
|---|---|---|---|
| **MODE** | TX channel 132322 | **FREQUENCY RANGE** | Above 1000MHz |
| **ENVIRONMENTAL CONDITIONS** | 23deg. C, 70%RH | **INPUT POWER** | AC 120V/60HZ |
| **TESTED BY** | Hanwen Xu | | |
| **ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M** | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,472.000 | -53.90 | -13.00 | 40.90 | 20.43 | H | 320.9 | 1.00 |
| 4 | 5,208.000 | -49.70 | -13.00 | 36.70 | 23.47 | H | 359 | 1.00 |



| MODE | TX channel 132322 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60HZ |
| TESTED BY | Hanwen Xu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,472.000 | -52.58 | -13.00 | 39.58 | 21.15 | V | 1 | 1.00 |
| 4 | 5,208.000 | -49.72 | -13.00 | 36.72 | 24.07 | V | 210.2 | 2.00 |

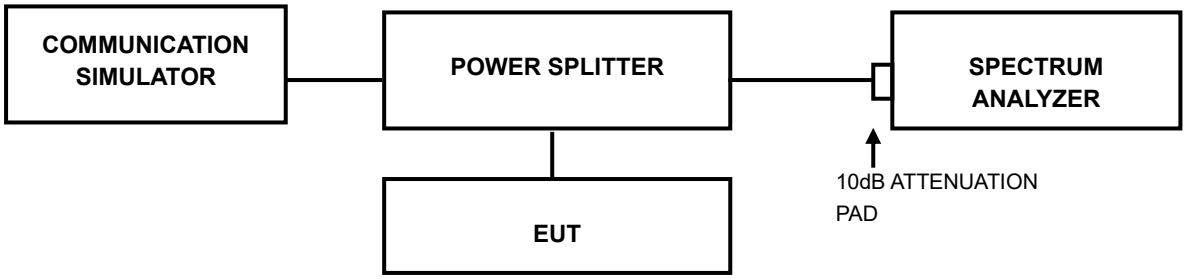


## 3.7 PEAK TO AVERAGE RATIO

### 3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

### 3.7.2 TEST SETUP




### 3.7.3 TEST PROCEDURES

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

### 3.7.4 TEST RESULTS

Please Refer to Appendix Of this test report.

# 4 INFORMATION ON THE TESTING LABORATORIES

We, Huarui 7layers High Technology (Suzhou) Co., Ltd. , were founded in 2020 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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

**Suzhou EMC/RF Lab**:
Tel: +86 (0557) 368 1008

# 5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

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

# 6 APPENDIX

## WCDMA BAND4.

## PEAK-TO-AVERAGE RATIO

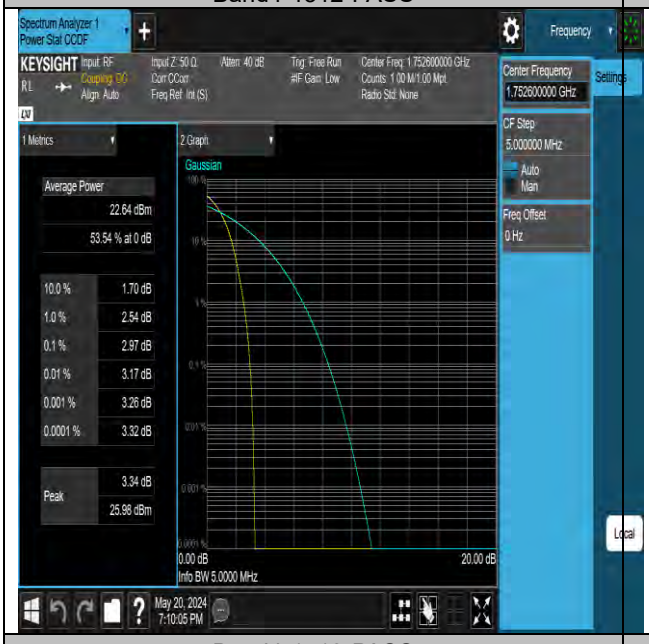
### Test Result

| Band | Channel | Peak-to-Average Ratio(dB) | Limit(dBm) | Verdict |
|---|---|---|---|---|
| Band4 | 1312 | 3.11 | 13 | PASS |
| Band4 | 1413 | 3.21 | 13 | PASS |
| Band4 | 1513 | 2.97 | 13 | PASS |

## Test Graphs


Band4-1312-PASS


Band4-1413-PASS



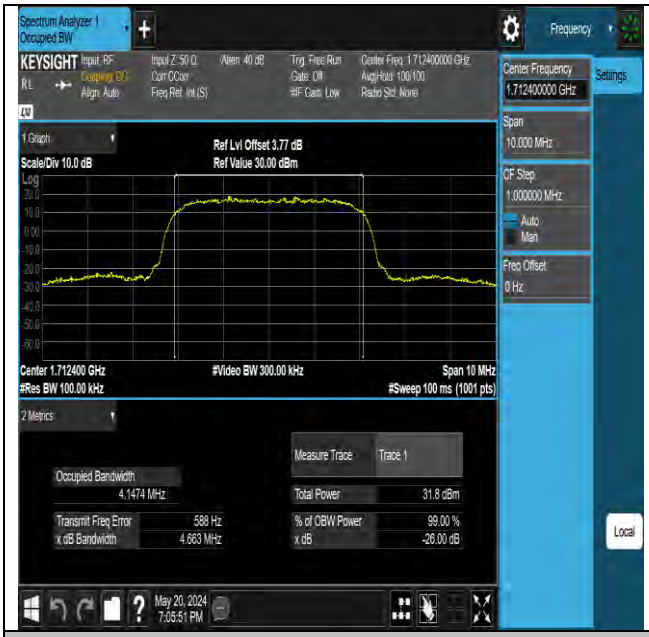

Band4-1513-PASS

## 26DB BANDWIDTH AND OCCUPIED BANDWIDTH

### Test Result

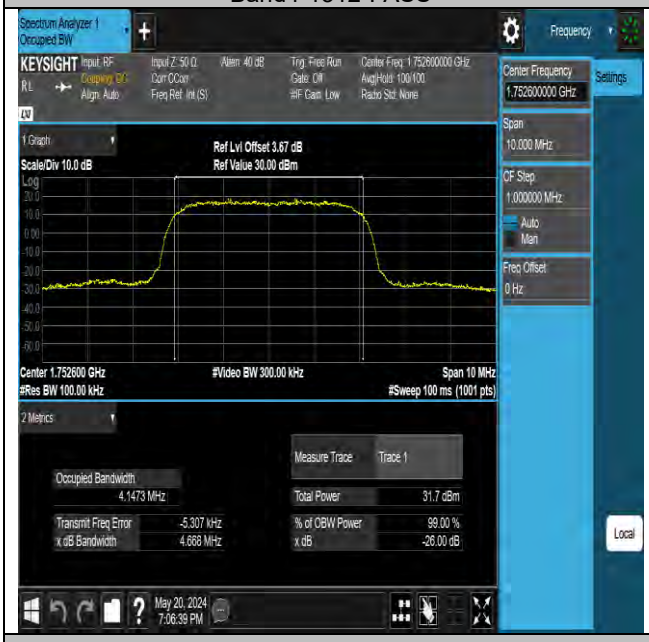
| Band | Channel | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Limit(MHz) | Verdict |
|---|---|---|---|---|---|
| Band4 | 1312 | 4.1474 | 4.663 | --- | PASS |
| Band4 | 1413 | 4.1456 | 4.665 | --- | PASS |
| Band4 | 1513 | 4.1473 | 4.668 | --- | PASS |

## Test Graphs




Band4-1312-PASS


Band4-1413-PASS




Band4-1513-PASS

## BAND EDGE

### Test Result

| Band | Channel | Frequency (MHz) | Result (dBm) | Limit(dBm) | Verdict |
|---|---|---|---|---|---|
| Band4 | 1312 | 1709.95 | -29.496 | -13 | PASS |
| Band4 | 1513 | 1755.06 | -31.591 | -13 | PASS |

## Test Graphs


Band4-1312-PASS

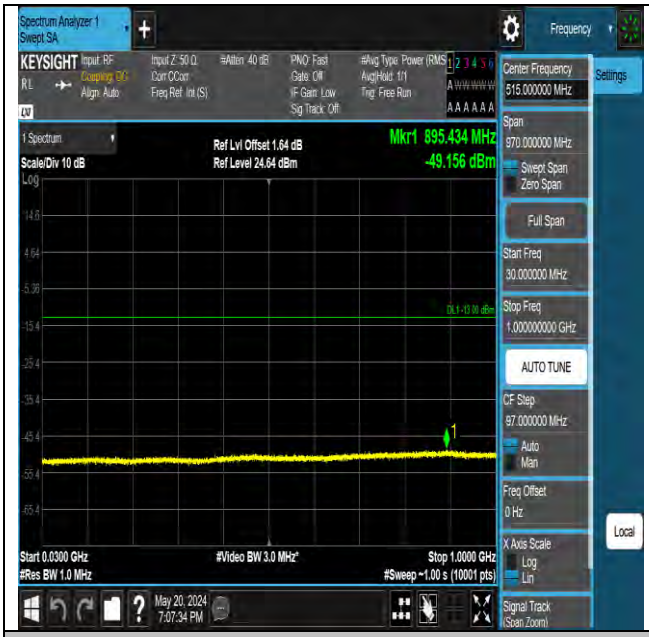

Band4-1513-PASS

## CONDUCTED SPURIOUS EMISSION

### Test Result

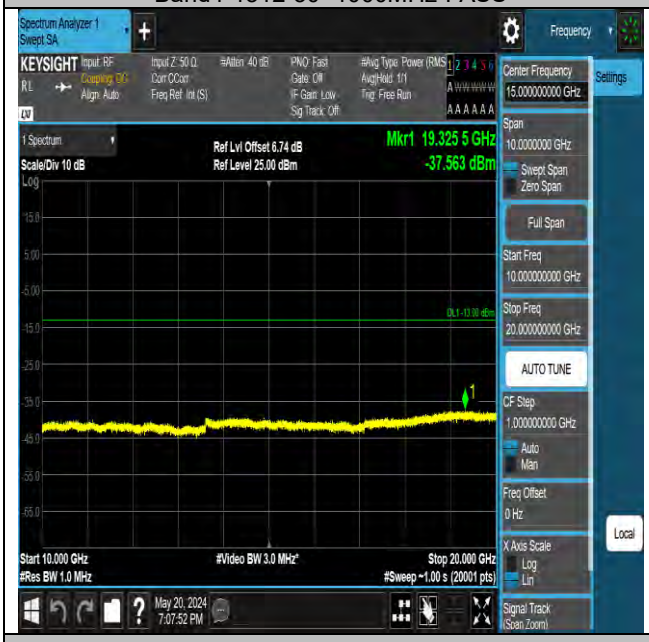
| Band | Channel | Frequency Range (Mhz) | Frequency (dBm) | Result (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|---|---|
| Band4 | 1312 | 30~1000MHz | 895.43 | -49.16 | -13 | PASS |
| Band4 | 1312 | 1000~10000MHz | 3809.35 | -41.05 | -13 | PASS |
| Band4 | 1312 | 10000~20000MHz | 19325.5 | -37.56 | -13 | PASS |
| Band4 | 1413 | 30~1000MHz | 898.93 | -49.35 | -13 | PASS |
| Band4 | 1413 | 1000~10000MHz | 3871.45 | -40.85 | -13 | PASS |
| Band4 | 1413 | 10000~20000MHz | 19184 | -37.53 | -13 | PASS |
| Band4 | 1513 | 30~1000MHz | 880.5 | -49.36 | -13 | PASS |
| Band4 | 1513 | 1000~10000MHz | 3841.3 | -40.91 | -13 | PASS |
| Band4 | 1513 | 10000~20000MHz | 19317.5 | -37.41 | -13 | PASS |

## Test Graphs



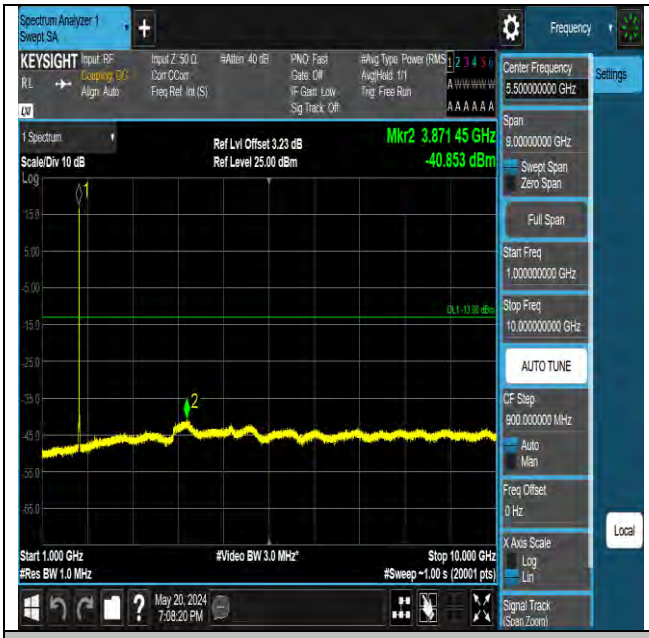

Band4-1312-30~1000MHz-PASS


Band4-1312-1000~10000MHz-PASS

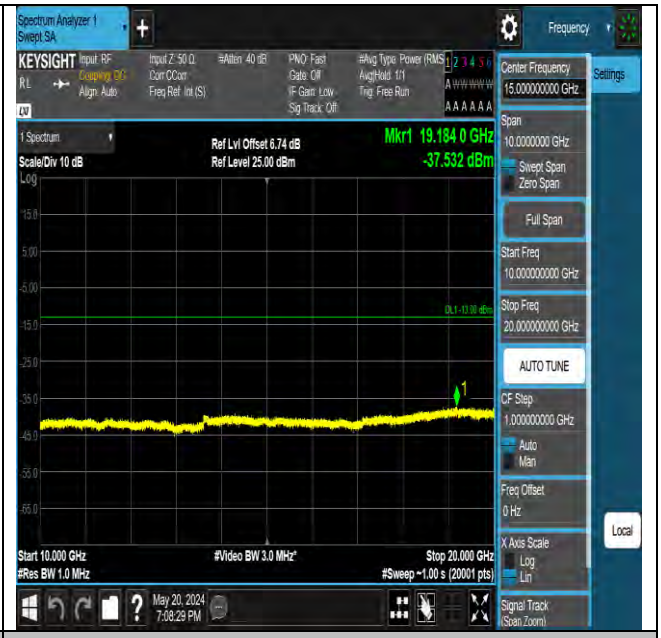



Band4-1312-10000~20000MHz-PASS


Band4-1413-30~1000MHz-PASS



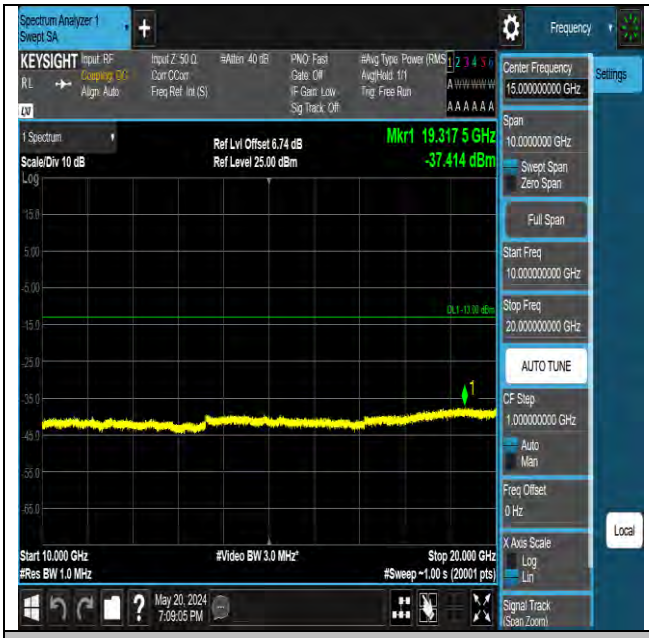

Band4-1413-1000~10000MHz-PASS




Band4-1413-10000~20000MHz-PASS


Band4-1513-30~1000MHz-PASS


Band4-1513-1000~10000MHz-PASS

| | |
|---|---|
|  | |
| Band4-1513-10000~20000MHz-PASS | |

# FREQUENCY STABILITY

## Test Result

| Voltage | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Band | Channel | Voltage (Vdc) | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | FL (MHz) | FH (MHz) | Limit (MHz) | Verdict |
| Band4 | 1312 | VN | NT | -1942.23 | -1.1342 | 1710.32814 | --- | 1710-1755 | PASS |
| Band4 | 1312 | VL | NT | -2263.88 | -1.3221 | 1710.32791 | --- | 1710-1755 | PASS |
| Band4 | 1312 | VH | NT | -2071.61 | -1.2098 | 1710.32704 | --- | 1710-1755 | PASS |
| Band4 | 1513 | VN | NT | -1875.32 | -1.07 | --- | 1754.67022 | 1710-1755 | PASS |
| Band4 | 1513 | VL | NT | -1874.87 | -1.0698 | --- | 1754.66813 | 1710-1755 | PASS |
| Band4 | 1513 | VH | NT | -1907.07 | -1.0881 | --- | 1754.66896 | 1710-1755 | PASS |

| Temperature | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Band | Channel | Voltage (Vdc) | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | FL (MHz) | FH (MHz) | Limit (MHz) | Verdict |
| Band4 | 1312 | NV | -30 | 1966.25 | 1.1482 | 1710.33076 | --- | 1710-1755 | PASS |
| Band4 | 1312 | NV | -20 | 1855.67 | 1.0837 | 1710.32983 | --- | 1710-1755 | PASS |
| Band4 | 1312 | NV | -10 | -2097.81 | -1.2251 | 1710.32967 | --- | 1710-1755 | PASS |
| Band4 | 1312 | NV | 0 | 1930.44 | 1.1273 | 1710.32737 | --- | 1710-1755 | PASS |
| Band4 | 1312 | NV | 10 | 1839.12 | 1.0740 | 1710.32601 | --- | 1710-1755 | PASS |
| Band4 | 1312 | NV | 20 | -2164.51 | -1.2640 | 1710.32547 | --- | 1710-1755 | PASS |
| Band4 | 1312 | NV | 30 | 2101.95 | 1.2275 | 1710.32659 | --- | 1710-1755 | PASS |
| Band4 | 1312 | NV | 40 | 1906.89 | 1.1136 | 1710.3278 | --- | 1710-1755 | PASS |
| Band4 | 1312 | NV | 50 | 2053.78 | 1.1994 | 1710.32546 | --- | 1710-1755 | PASS |
| Band4 | 1513 | NV | -30 | 1707.97 | 0.9745 | --- | 1754.6706 | 1710-1755 | PASS |
| Band4 | 1513 | NV | -20 | 1880.06 | 1.0727 | --- | 1754.67221 | 1710-1755 | PASS |
| Band4 | 1513 | NV | -10 | 1821.04 | 1.0391 | --- | 1754.66616 | 1710-1755 | PASS |
| Band4 | 1513 | NV | 0 | -1875.93 | -1.0704 | --- | 1754.66515 | 1710-1755 | PASS |
| Band4 | 1513 | NV | 10 | 1866.4 | 1.065 | --- | 1754.6 | 1710-1 | PASS |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 4 | | | 7349 | 755 | |
| Band4 | 1513 | NV | 20 | 1888.70 | 1.0777 | --- | 1754.67428 | 1710-1755 | PASS |
| Band4 | 1513 | NV | 30 | -2046.74 | -1.1678 | --- | 1754.66468 | 1710-1755 | PASS |
| Band4 | 1513 | NV | 40 | -1953.32 | -1.1145 | --- | 1754.66443 | 1710-1755 | PASS |
| Band4 | 1513 | NV | 50 | -1967.20 | -1.1224 | --- | 1754.67025 | 1710-1755 | PASS |

## LTE BAND66(INCLUDE LTE B4)

## PEAK-TO-AVERAGE RATIO(CCDF)

### Test Result

| Band | Bandwidth | Modulation | Channel | RB Configuration | Result(dB) | Limit(dB) | Verdict |
|---|---|---|---|---|---|---|---|
| Band66 | 20MHz | QPSK | 132072 | 1RB#0 | 4.39 | 13 | PASS |
| Band66 | 20MHz | QPSK | 132072 | 100RB#0 | 5.71 | 13 | PASS |
| Band66 | 20MHz | QPSK | 132322 | 1RB#0 | 5.24 | 13 | PASS |
| Band66 | 20MHz | QPSK | 132322 | 100RB#0 | 5.39 | 13 | PASS |
| Band66 | 20MHz | QPSK | 132572 | 1RB#0 | 4.30 | 13 | PASS |
| Band66 | 20MHz | QPSK | 132572 | 100RB#0 | 5.70 | 13 | PASS |

## Test Graphs


Band66-20MHz-QPSK-132072-1RB#0-PASS


Band66-20MHz-QPSK-132072-100RB#0-PASS


Band66-20MHz-QPSK-132322-1RB#0-PASS


Band66-20MHz-QPSK-132322-100RB#0-PASS


Band66-20MHz-QPSK-132572-1RB#0-PASS


Band66-20MHz-QPSK-132572-100RB#0-PASS

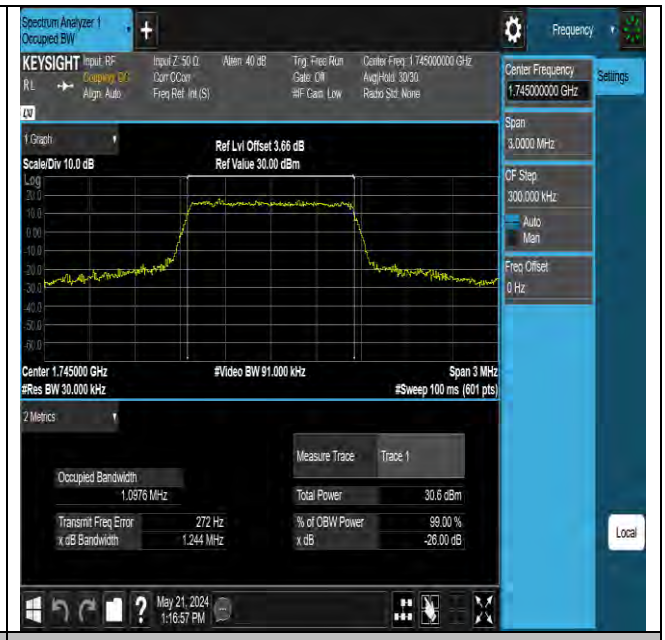
## 26DB BANDWIDTH AND OCCUPIED BANDWIDTH

### Test Result

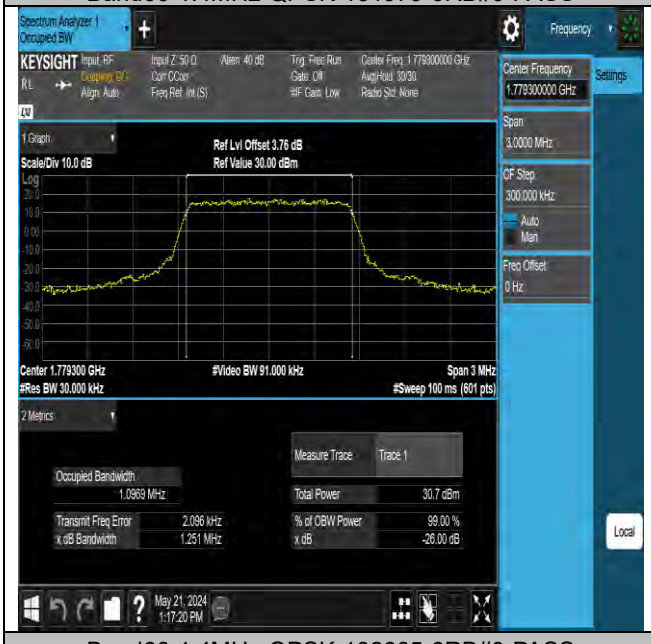
| Band | Bandwidth | Modulation | Channel | RB Configuration | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|---|---|---|---|---|---|---|---|
| Band66 | 1.4MHz | QPSK | 131979 | 6RB#0 | 1.0930 | 1.250 | PASS |
| Band66 | 1.4MHz | QPSK | 132322 | 6RB#0 | 1.0976 | 1.244 | PASS |
| Band66 | 1.4MHz | QPSK | 132665 | 6RB#0 | 1.0969 | 1.251 | PASS |
| Band66 | 1.4MHz | 16QAM | 131979 | 6RB#0 | 1.0982 | 1.244 | PASS |
| Band66 | 1.4MHz | 16QAM | 132322 | 6RB#0 | 1.0981 | 1.250 | PASS |
| Band66 | 1.4MHz | 16QAM | 132665 | 6RB#0 | 1.0908 | 1.253 | PASS |
| Band66 | 3MHz | QPSK | 131987 | 15RB#0 | 2.7051 | 3.022 | PASS |
| Band66 | 3MHz | QPSK | 132322 | 15RB#0 | 2.7072 | 3.049 | PASS |
| Band66 | 3MHz | QPSK | 132657 | 15RB#0 | 2.6939 | 3.012 | PASS |
| Band66 | 3MHz | 16QAM | 131987 | 15RB#0 | 2.7044 | 3.036 | PASS |
| Band66 | 3MHz | 16QAM | 132322 | 15RB#0 | 2.7114 | 3.036 | PASS |
| Band66 | 3MHz | 16QAM | 132657 | 15RB#0 | 2.7089 | 3.018 | PASS |
| Band66 | 5MHz | QPSK | 131997 | 25RB#0 | 4.5291 | 5.012 | PASS |
| Band66 | 5MHz | QPSK | 132322 | 25RB#0 | 4.5072 | 4.998 | PASS |
| Band66 | 5MHz | QPSK | 132647 | 25RB#0 | 4.5180 | 4.995 | PASS |
| Band66 | 5MHz | 16QAM | 131997 | 25RB#0 | 4.4997 | 4.993 | PASS |
| Band66 | 5MHz | 16QAM | 132322 | 25RB#0 | 4.4995 | 4.980 | PASS |
| Band66 | 5MHz | 16QAM | 132647 | 25RB#0 | 4.5003 | 4.999 | PASS |
| Band66 | 10MHz | QPSK | 132022 | 50RB#0 | 9.0258 | 9.944 | PASS |
| Band66 | 10MHz | QPSK | 132322 | 50RB#0 | 8.9946 | 9.843 | PASS |
| Band66 | 10MHz | QPSK | 132622 | 50RB#0 | 8.9876 | 9.921 | PASS |
| Band66 | 10MHz | 16QAM | 132022 | 50RB#0 | 9.0070 | 9.938 | PASS |
| Band66 | 10MHz | 16QAM | 132322 | 50RB#0 | 9.0179 | 9.890 | PASS |
| Band66 | 10MHz | 16QAM | 132622 | 50RB#0 | 9.0074 | 10.01 | PASS |
| Band66 | 15MHz | QPSK | 132047 | 75RB#0 | 13.498 | 14.91 | PASS |
| Band66 | 15MHz | QPSK | 132322 | 75RB#0 | 13.474 | 14.91 | PASS |
| Band66 | 15MHz | QPSK | 132597 | 75RB#0 | 13.520 | 15.04 | PASS |
| Band66 | 15MHz | 16QAM | 132047 | 75RB#0 | 13.506 | 14.89 | PASS |
| Band66 | 15MHz | 16QAM | 132322 | 75RB#0 | 13.476 | 14.94 | PASS |
| Band66 | 15MHz | 16QAM | 132597 | 75RB#0 | 13.516 | 14.98 | PASS |
| Band66 | 20MHz | QPSK | 132072 | 100RB#0 | 18.054 | 19.82 | PASS |
| Band66 | 20MHz | QPSK | 132322 | 100RB#0 | 17.965 | 19.81 | PASS |
| Band66 | 20MHz | QPSK | 132572 | 100RB#0 | 18.038 | 19.75 | PASS |
| Band66 | 20MHz | 16QAM | 132072 | 100RB#0 | 17.995 | 19.68 | PASS |
| Band66 | 20MHz | 16QAM | 132322 | 100RB#0 | 17.978 | 19.73 | PASS |
| Band66 | 20MHz | 16QAM | 132572 | 100RB#0 | 18.024 | 19.78 | PASS |

## Test Graphs


Band66-1.4MHz-QPSK-131979-6RB#0-PASS



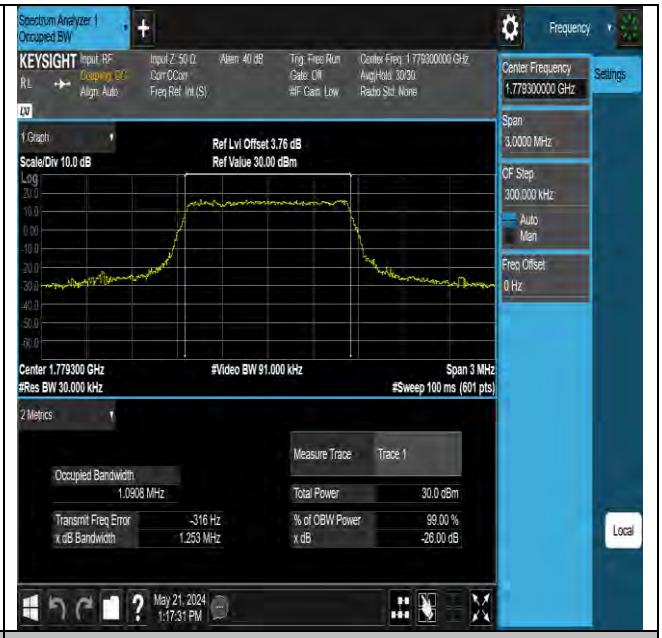

Band66-1.4MHz-QPSK-132322-6RB#0-PASS




Band66-1.4MHz-QPSK-132665-6RB#0-PASS


Band66-1.4MHz-16QAM-131979-6RB#0-PASS


Band66-1.4MHz-16QAM-132322-6RB#0-PASS




Band66-1.4MHz-16QAM-132665-6RB#0-PASS


Band66-3MHz-QPSK-131987-15RB#0-PASS


Band66-3MHz-QPSK-132322-15RB#0-PASS


Band66-3MHz-QPSK-132657-15RB#0-PASS


Band66-3MHz-16QAM-131987-15RB#0-PASS


Band66-3MHz-16QAM-132322-15RB#0-PASS


Band66-3MHz-16QAM-132657-15RB#0-PASS


Band66-5MHz-QPSK-131997-25RB#0-PASS


Band66-5MHz-QPSK-132322-25RB#0-PASS


Band66-5MHz-QPSK-132647-25RB#0-PASS


Band66-5MHz-16QAM-131997-25RB#0-PASS


Band66-5MHz-16QAM-132322-25RB#0-PASS


Band66-5MHz-16QAM-132647-25RB#0-PASS


Band66-10MHz-QPSK-132022-50RB#0-PASS


Band66-10MHz-QPSK-132322-50RB#0-PASS


Band66-10MHz-QPSK-132622-50RB#0-PASS


Band66-10MHz-16QAM-132022-50RB#0-PASS


Band66-10MHz-16QAM-132322-50RB#0-PASS


Band66-10MHz-16QAM-132622-50RB#0-PASS


Band66-15MHz-QPSK-132047-75RB#0-PASS


Band66-15MHz-QPSK-132322-75RB#0-PASS


Band66-15MHz-QPSK-132597-75RB#0-PASS


Band66-15MHz-16QAM-132047-75RB#0-PASS


Band66-15MHz-16QAM-132322-75RB#0-PASS


Band66-15MHz-16QAM-132597-75RB#0-PASS


Band66-20MHz-QPSK-132072-100RB#0-PASS


Band66-20MHz-QPSK-132322-100RB#0-PASS


Band66-20MHz-QPSK-132572-100RB#0-PASS


Band66-20MHz-16QAM-132072-100RB#0-PASS


Band66-20MHz-16QAM-132322-100RB#0-PASS


Band66-20MHz-16QAM-132572-100RB#0-PASS