Certificate #6613.01

# FCC TEST REPORT

# (PART 27)

| | |
|---|---|
| Applicant: | Power Idea Technology (Shenzhen) Co., Ltd. |
| Address: | 4th Floor, A Section, Languang Science&technology Building, No.7 Xinxi RD, Hi-Tech Industrial Park North, Nanshan District, ShenZhen, P.R.C. |

| | |
|---|---|
| Manufacturer or Supplier: | Power Idea Technology (Shenzhen) Co., Ltd. |
| Address: | 4th Floor, A Section, Languang Science&technology Building, No.7 Xinxi RD, Hi-Tech Industrial Park North, Nanshan District, ShenZhen, P.R.C. |
| Product: | Smart Phone |
| Brand Name: | RugGear |
| Model Name: | PSM05G |
| Marketing name: | RG880i |
| FCC ID | ZLE-PSM05G |
| Date of tests | Aug. 28, 2024 ~ Sep.27, 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 |
|---|---|
| Xu Hanwen | Sun Peibo |
| Date: Sep.27, 2024 | Date: Sep.27, 2024 |

*This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.*

# TABLE OF CONTENTS

RELEASE CONTROL RECORD ..... 4
1 SUMMARY OF TEST RESULTS ..... 5
1.1 MEASREMENT UNCERTAINTY ..... 6
1.2 TEST SITE AND INSTRUMENTS ..... 7
2 GENERAL INFORMATION ..... 9
2.1 GENERAL DESCRIPTION OF EUT ..... 9
2.2 CONFIGURATION OF SYSTEM UNDER TEST ..... 13
2.3 DESCRIPTION OF SUPPORT UNITS ..... 14
2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS ..... 20
3 TEST TYPES AND RESULTS ..... 21
3.1 OUTPUT POWER MEASUREMENT ..... 21
3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT ..... 21
3.1.2 TEST PROCEDURES ..... 21
3.1.3 TEST SETUP ..... 22
3.1.4 TEST RESULTS ..... 23
3.2 FREQUENCY STABILITY MEASUREMENT ..... 63
3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT ..... 63
3.2.2 TEST PROCEDURE ..... 63
3.2.3 TEST SETUP ..... 63
3.2.4 TEST RESULTS ..... 64
3.3 OCCUPIED BANDWIDTH MEASUREMENT ..... 65
3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT ..... 65
3.3.2 TEST SETUP ..... 65
3.3.3 TEST PROCEDURES ..... 65
3.3.4 TEST RESULTS ..... 66
3.4 BAND EDGE MEASUREMENT ..... 67
3.4.1 LIMITS OF BAND EDGE MEASUREMENT ..... 67
3.4.2 TEST SETUP ..... 67
3.4.3 TEST PROCEDURES ..... 68
3.4.4 TEST RESULTS ..... 69
3.5 CONDUCTED SPURIOUS EMISSIONS ..... 70
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT ..... 70
3.5.2 TEST PROCEDURE ..... 70
3.5.3 TEST SETUP ..... 70
3.5.4 TEST RESULTS ..... 71
3.6 RADIATED EMISSION MEASUREMENT ..... 72
3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT ..... 72
3.6.2 TEST PROCEDURES ..... 72
3.6.3 DEVIATION FROM TEST STANDARD ..... 72
3.6.4 TEST SETUP ..... 73
3.6.5 TEST RESULTS ..... 75
3.7 PEAK TO AVERAGE RATIO ..... 105
3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT ..... 105
3.7.2 TEST SETUP ..... 105
3.7.3 TEST PROCEDURES ..... 105
3.7.4 TEST RESULTS ..... 106
4 INFORMATION ON THE TESTING LABORATORIES ..... 107
5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB ..... 108
6 APPENDIX ..... 109

LTE BAND41 (INDCLUDING LTE BAND38) ..... 109
PEAK-TO-AVERAGE RATIO(CCDF) ..... 109
TEST RESULT ..... 109
TEST GRAPHS ..... 111
26DB BANDWIDTH AND OCCUPIED BANDWIDTH ..... 120
TEST RESULT ..... 120
TEST GRAPHS ..... 121
BAND EDGE ..... 131
TEST RESULT ..... 131
TEST GRAPHS ..... 133
CONDUCTED SPURIOUS EMISSION ..... 139
TEST RESULT ..... 139
TEST GRAPHS ..... 140
FREQUENCY STABILITY ..... 146
TEST RESULT ..... 146
LTE BAND66 (INDCLUDING LTE BAND4) ..... 148
PEAK-TO-AVERAGE RATIO(CCDF) ..... 148
TEST RESULT ..... 148
TEST GRAPHS ..... 151
26DB BANDWIDTH AND OCCUPIED BANDWIDTH ..... 165
TEST RESULT ..... 165
TEST GRAPHS ..... 167
BAND EDGE ..... 181
TEST RESULT ..... 181
TEST GRAPHS ..... 183
CONDUCTED SPURIOUS EMISSION ..... 192
TEST RESULT ..... 192
TEST GRAPHS ..... 194
FREQUENCY STABILITY ..... 203
TEST RESULT ..... 203

# RELEASE CONTROL RECORD

| ISSUE NO. | REASON FOR CHANGE | DATE ISSUED |
|---|---|---|
| PSU-NQN2406210109RF04 | Original release | Sep.27, 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)<br>§27.50(h)(2) | Equivalent Isotropically Radiated Power<br>(Band 4) (Band 38) (Band 41) (Band 66) | Compliance | A |
| §2.1055<br>§27.54 | Frequency Stability | Compliance | A |
| §2.1049 | Occupied Bandwidth | Compliance | A |
| §2.1051<br>§27.53(h)<br>§27.53(m)(4)(6) | Conducted Band Edge Measurements<br>(Band 4) (Band 38) (Band 41) (Band 66) | Compliance | A |
| §2.1051<br>§27.53(h)<br>§27.53(m)(4)(6) | Conducted Spurious Emissions<br>(Band 4) (Band 38) (Band 41) (Band 66) | Compliance | A |
| §2.1053<br>§27.53(h)<br>§27.53(m)(4)(6) | Radiated Spurious Emissions<br>(Band 4) (Band 38) (Band 41) (Band 42) (Band 66) | Compliance | A |
| §27.50(d)(5) | Peak to average ratio | Compliance | A |

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

***Test Lab Information Reference**

**Lab A:**

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

**Lab Address:**

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

**Accredited Test Lab Cert 6613.01**

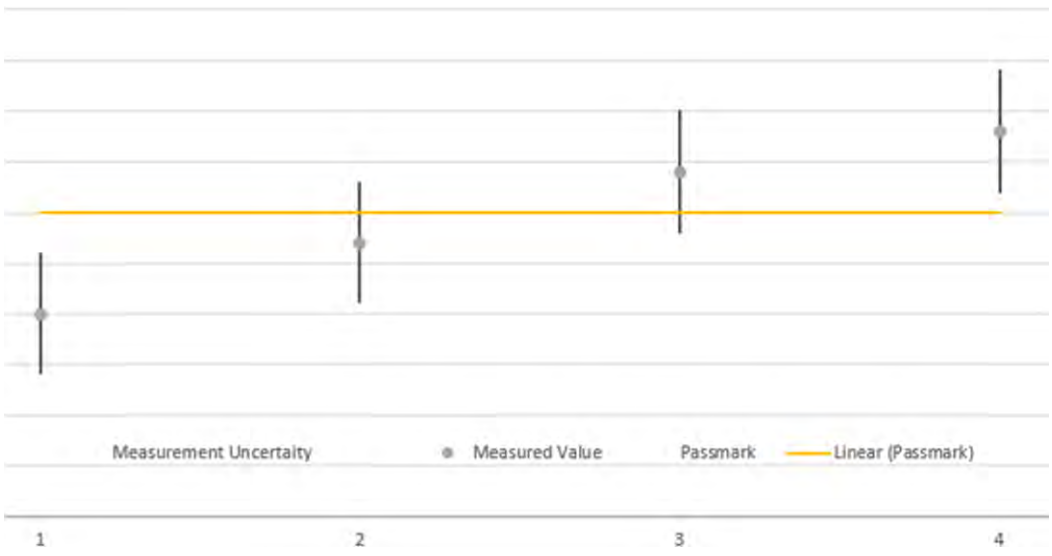
**The FCC Site Registration No. is 434559; The Designation No. is CN1325.**

## 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 | SCU18F1 | 100815 | Aug.29,24 | Aug.28,26 |
| Pre-Amplifier | R&S | SCU08F1 | 101028 | Sep.16,22 | Sep.15,24 |
| Pre-Amplifier | R&S | SCU08F1 | 101028 | Sep.15,24 | Sep.14,26 |
| Vector Signal Generator | R&S | SMBV100B | 102176 | Mar.29,24 | Mar.28,26 |
| Signal Generator | R&S | SMB100A | 182185 | Mar.29,24 | Mar.28,26 |
| 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 | Mar.28,24 | Mar.27,26 |
| EMI TEST Receiver | R&S | ESW44 | 101973 | Mar.28,24 | Mar.27,26 |
| Bilog Antenna | SCHWARZBECK | VULB 9163 | 1264 | Dec.26,23 | Dec.25,25 |
| Horn Antenna | ETS-LINDGREN | 3117 | 227836 | Aug.21,24 | Aug.20,26 |
| Horn Antenna (18GHz-40GHz) | Steatite Q-par Antennas | QMS 00880 | 23486 | Jul.15,24 | Jul.14,26 |
| Horn Antenna | Steatite Q-par Antennas | QMS 00208 | 23485 | Aug.21,24 | Aug.20,26 |
| Loop Antenna | SCHWARZ | HFH2-Z2/Z2E | 100976 | Feb.22,24 | Feb.21,26 |
| WIDEBANDRADIO COMMUNICATION TESTER | R&S | CMW500 | 169399 | Jun.19,24 | Jun.18,26 |
| 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 |
| DC Source | HYELEC | HY3010B | 551016 | Aug.30,24 | Aug.29,26 |
| Hygrothermograph | DELI | 20210528 | SZ014 | Sep.06,22 | Sep.05,24 |
| Hygrothermograph | DELI | 20210528 | SZ014 | Sep.05,24 | Sep.04,26 |
| 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.27,24 | Apr.26,25 |
| CABLE | R&S | W12.14 | N/A | Apr.27,24 | Apr.26,25 |
| CABLE | R&S | J12J103539-00-1 | SEP-03-20-069 | Apr.27,24 | Apr.26,25 |
| CABLE | R&S | J12J103539-00-1 | SEP-03-20-070 | Apr.27,24 | Apr.26,25 |

| | | | | | |
|---|---|---|---|---|---|
| Temperature Chamber | votsch | VT4002 | 5856607810 0050 | May.30,24 | May.29,26 |

**NOTE:** 1. The calibration interval of the above test instruments is 12/ 24 / 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*** | Smart Phone | |
| **BRAND NAME*** | RugGear | |
| **MODEL NAME*** | PSM05G | |
| **MARKETING NAME*** | RG880i | |
| **NOMINAL VOLTAGE*** | 5.0Vdc/ 9.0Vdc/ 12.0Vdc(Adapter)<br>3.85Vdc (Battery) | |
| **MODULATION TECHNOLOGY** | **LTE** | QPSK, 16QAM, 64QAM |
| **FREQUENCY RANGE** | **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 38<br>Channel Bandwidth: 5MHz** | 2572.5MHz ~ 2617.5MHz |
| | **LTE Band 38<br>Channel Bandwidth: 10MHz** | 2575MHz ~ 2615MHz |
| | **LTE Band 38<br>Channel Bandwidth: 15MHz** | 2577.5MHz ~ 2612.5MHz |
| | **LTE Band 38<br>Channel Bandwidth: 20MHz** | 2580MHz ~ 2610MHz |
| | **LTE Band 41<br>Channel Bandwidth: 5MHz** | 2498.5MHz ~ 2687.5MHz |
| | **LTE Band 41<br>Channel Bandwidth: 10MHz** | 2501MHz ~ 2685MHz |
| | **LTE Band 41<br>Channel Bandwidth: 15MHz** | 2503.5MHz ~ 2682.5MHz |
| | **LTE Band 41<br>Channel Bandwidth: 20MHz** | 2506MHz ~ 2680MHz |
| | **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 Channel Bandwidth: 10MHz** | 1715MHz ~ 1775MHz |
| | **LTE Band 66 Channel Bandwidth: 15MHz** | 1717.5MHz ~ 1772.5MHz |
| | **LTE Band 66 Channel Bandwidth: 20MHz** | 1720MHz ~ 1770MHz |
| **MAX. EIRP POWER** | **LTE Band 4 Channel Bandwidth: 1.4MHz** | 156.31mW |
| | **LTE Band 4 Channel Bandwidth: 3MHz** | 154.53mW |
| | **LTE Band 4 Channel Bandwidth: 5MHz** | 157.04mW |
| | **LTE Band 4 Channel Bandwidth: 10MHz** | 156.31mW |
| | **LTE Band 4 Channel Bandwidth: 15MHz** | 156.31mW |
| | **LTE Band 4 Channel Bandwidth: 20MHz** | 158.12mW |
| | **LTE Band 38 Channel Bandwidth: 5MHz** | 152.76mW |
| | **LTE Band 38 Channel Bandwidth: 10MHz** | 149.28mW |
| | **LTE Band 38 Channel Bandwidth: 15MHz** | 150.31mW |
| | **LTE Band 38 Channel Bandwidth: 20MHz** | 153.11mW |
| | **LTE Band 41 Channel Bandwidth: 5MHz** | 150.31mW |
| | **LTE Band 41 Channel Bandwidth: 10MHz** | 149.97mW |
| | **LTE Band 41 Channel Bandwidth: 15MHz** | 147.23mW |
| | **LTE Band 41 Channel Bandwidth: 20MHz** | 151.71mW |
| | **LTE Band 66 Channel Bandwidth: 1.4MHz** | 169.82mW |
| | **LTE Band 66 Channel Bandwidth: 3MHz** | 166.34mW |
| | **LTE Band 66 Channel Bandwidth: 5MHz** | 168.27mW |
| | **LTE Band 66 Channel Bandwidth: 10MHz** | 168.66mW |
| | **LTE Band 66 Channel Bandwidth: 15MHz** | 169.04mW |
| | **LTE Band 66 Channel Bandwidth: 20MHz** | 170.61mW |
| **EMISSION DESIGNATOR** | **LTE Band 41 Channel Bandwidth: 5MHz** | QPSK: 4M49G7D |
| | | 16QAM: 4M47W7D |
| | | 64QAM: 4M49W7D |

| | | |
|---|---|---|
| | **LTE Band 41 Channel Bandwidth: 10MHz** | QPSK: 8M95G7D |
| | | 16QAM: 8M96W7D |
| | | 64QAM: 8M95W7D |
| | **LTE Band 41 Channel Bandwidth: 15MHz** | QPSK: 13M4G7D |
| | | 16QAM: 13M5W7D |
| | | 64QAM: 13M4W7D |
| | **LTE Band 41 Channel Bandwidth: 20MHz** | QPSK: 17M9G7D |
| | | 16QAM: 17M9W7D |
| | | 64QAM: 17M9W7D |
| **EMISSION DESIGNATOR** | **LTE Band 66 Channel Bandwidth: 1.4MHz** | QPSK: 1M10G7D |
| | | 16QAM: 1M09W7D |
| | | 64QAM: 1M09W7D |
| | **LTE Band 66 Channel Bandwidth: 3MHz** | QPSK: 2M69G7D |
| | | 16QAM: 2M69W7D |
| | | 64QAM: 2M69W7D |
| | **LTE Band 66 Channel Bandwidth: 5MHz** | QPSK: 4M49G7D |
| | | 16QAM: 4M49W7D |
| | | 64QAM: 4M48W7D |
| | **LTE Band 66 Channel Bandwidth: 10MHz** | QPSK: 8M95G7D |
| | | 16QAM: 8M95W7D |
| | | 64QAM: 8M94W7D |
| | **LTE Band 66 Channel Bandwidth: 15MHz** | QPSK: 13M5G7D |
| | | 16QAM: 13M4W7D |
| | | 64QAM: 13M5W7D |
| | **LTE Band 66 Channel Bandwidth: 20MHz** | QPSK: 17M9G7D |
| | | 16QAM: 17M9W7D |
| | | 64QAM: 17M9W7D |
| **ANTENNA TYPE*** | PIFA Antenna with -0.8dBi gain for LTE 4/LTE 66<br>PIFA Antenna with -1.2dBi gain for LTE 38/ LTE 41 | |
| **HW VERSION*** | V02 | |
| **SW VERSION*** | RG880i_EAA_00.00_1 | |
| **I/O PORTS*** | Refer to user's manual | |
| **CABLE SUPPLIED*** | USB cable: non-shielded cable, with w/o ferrite core, 1.0 meter | |
| **EXTREME TEMPERATURE*** | -10℃-55℃ | |
| **EXTREME VOLTAGE*** | 3.6V – 4.4V | |

**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 two receivers.

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

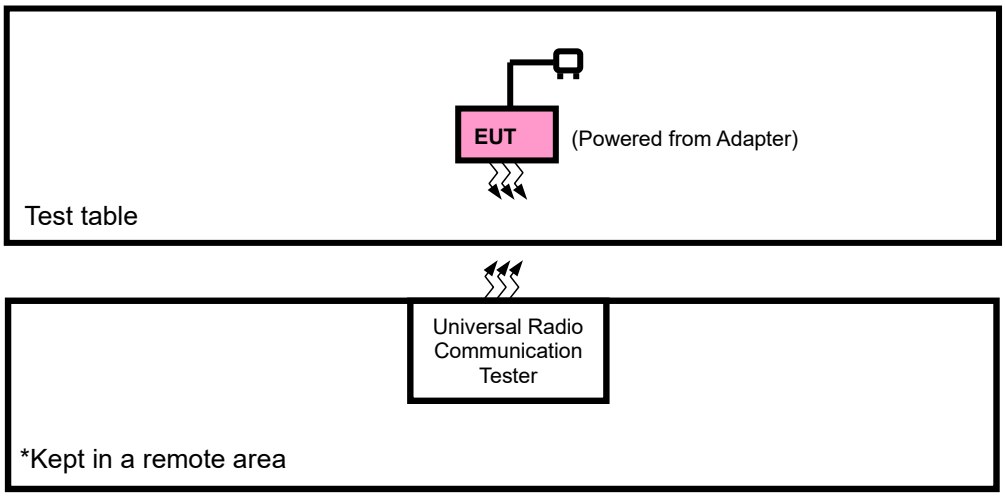
4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

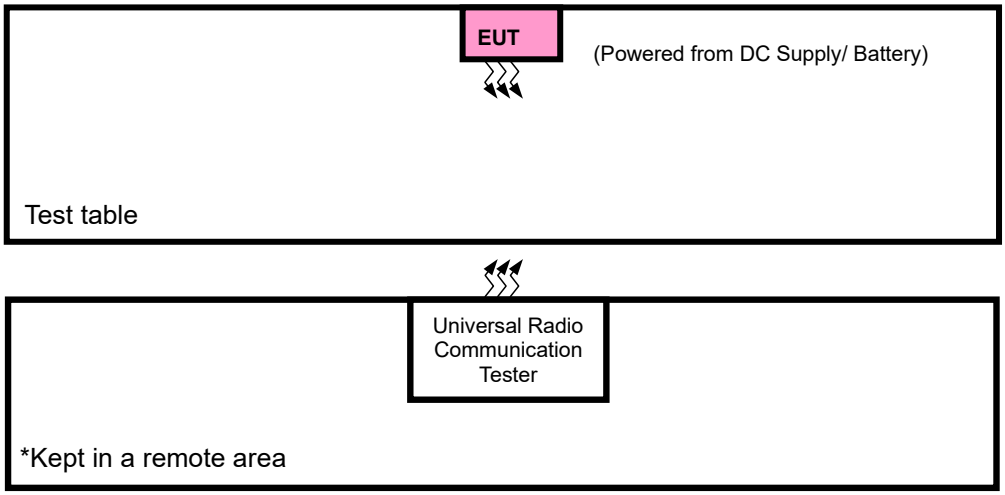
5. **List of Accessory:**

| ACCESSORIES | BRAND | MANUFACTURER | MODEL | SPECIFICATION |
|---|---|---|---|---|
| CPU | QUALCOMM | N/A | SM6225 | N/A |
| eMMC 1 (=ROM 1) | SAMSUNG | N/A | KM2L9001CM-B518 | N/A |
| eMMC 2 (=ROM 2) | Hynix | N/A | H9QT0GECN6X145R | N/A |
| RAM 1 | N/A | N/A | N/A | N/A |
| RAM 2 | N/A | N/A | N/A | N/A |
| BT/WLAN Module | N/A | N/A | N/A | N/A |
| NFC chipset | NXP | N/A | N/A | N/A |
| Battery | N/A | N/A | BL450AGP | Power Rating: 4.4V 4500mAh |
| Adapter | N/A | Huizhou Juwei Electronics Co.,Ltd | FG18AQC3.0UU | I/P: 100-240Vac, 50/60Hz, 0.5A, O/P:5.0V 3.0A or 9.0V 2.0A or 12.0V 1.5A |
| USB Cable | N/A | N/A | N/A | N/A |

## 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 | N/A | N/A | N/A | N/A | N/A |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS |
|---|---|
| 1 | USB Line: Shielded, 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 LTE link |
| B | EUT + Battery / DC Supply with LTE link |

**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 38 MODE**

| EUT CONFIGURE MODE | TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE |
|---|---|---|---|---|---|---|
| A | EIRP | 37775 to 38225 | 37775, 38000, 38225 | 5MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | 37800 to 38200 | 37800, 38000, 38200 | 10MHz | QPSK, 16QAM, 64QAM | 1 RB / 0RB Offset |
| | | 37825 to 38175 | 37825, 38000, 38175 | 15MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | 37850 to38150 | 37850, 38000, 38150 | 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 38 are covered by LTE Band 41, Because it is a subset of LTE Band 41 with the same output power and supported bandwidths, So the conducted test data and RSE test data please refer to LTE Band 41

**LTE BAND 41 MODE**

| EUT CONFIGURE MODE | TEST ITEM | AVAILABLE CHANNEL | TESTED CHANNEL | CHANNEL BANDWIDTH | MODULATION | MODE |
|---|---|---|---|---|---|---|
| A | EIRP | 39675 to 41565 | 39675, 40620, 41565 | 5MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | 39700 to 41540 | 39700, 40620,41540 | 10MHz | QPSK, 16QAM, 64QAM | 1 RB / 0RB Offset |
| | | 39725 to 41515 | 39725, 40620, 41515 | 15MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | 39750 to 41490 | 39750, 40620, 41490 | 20MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| B | FREQUENCY STABILITY | 39750 to 41490 | 39750, 40620, 41490 | 20MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| A | OCCUPIED BANDWIDTH | 39675 to 41565 | 39675, 40620, 41565 | 5MHz | QPSK, 16QAM, 64QAM | 25 RB / 0 RB Offset |
| | | 39700 to 41540 | 39700, 40620,41540 | 10MHz | QPSK, 16QAM, 64QAM | 50 RB / 0 RB Offset |
| | | 39725 to 41515 | 39725, 40620, 41515 | 15MHz | QPSK, 16QAM, 64QAM | 75 RB / 0 RB Offset |
| | | 39750 to 41490 | 39750, 40620, 41490 | 20MHz | QPSK, 16QAM, 64QAM | 100 RB / 0 RB Offset |
| A | PEAK TO AVERAGE RATIO | 39675 to 41565 | 39675, 40620, 41565 | 5MHz | 39675 to 41565 | 1 RB / 0 RB Offset<br>25 RB / 0 RB Offset |
| | | 39700 to 41540 | 39700, 40620,41540 | 10MHz | 39700 to 41540 | 1 RB / 0 RB Offset<br>50 RB / 0 RB Offset |
| | | 39725 to 41515 | 39725, 40620, 41515 | 15MHz | 39725 to 41515 | 1 RB / 0 RB Offset<br>75 RB / 0 RB Offset |
| | | 39750 to 41490 | 39750, 40620, 41490 | 20MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset<br>100 RB / 0 RB Offset |

| | | | | | | |
|---|---|---|---|---|---|---|
| A | BAND EDGE | 39675 to 41565 | 39675 | 5MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | | | | | 25 RB / 0 RB Offset |
| | | | 41565 | 5MHz | QPSK, 16QAM, 64QAM | 1 RB / 24 RB Offset |
| | | | | | | 25 RB / 0 RB Offset |
| | | 39700 to 41540 | 39700 | 10MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | | | | | 50 RB / 0 RB Offset |
| | | | 41540 | 10MHz | QPSK, 16QAM, 64QAM | 1 RB / 49 RB Offset |
| | | | | | | 50 RB / 0 RB Offset |
| | | 39725 to 41515 | 39725 | 15MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | | | | | 75 RB / 0 RB Offset |
| | | | 41515 | 15MHz | QPSK, 16QAM, 64QAM | 1 RB / 74 RB Offset |
| | | | | | | 75 RB / 0 RB Offset |
| | | 39750 to 41490 | 39750 | 20MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | | | | | 100 RB / 0 RB Offset |
| | | | 41490 | 20MHz | QPSK, 16QAM, 64QAM | 1 RB / 99 RB Offset |
| | | | | | | 100 RB / 0 RB Offset |
| **A** | CONDCUDETED EMISSION | 39675 to 41565 | 39675, 40620, 41565 | 5MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | 39700 to 41540 | 39700, 40620,41540 | 10MHz | QPSK, 16QAM, 64QAM | 1 RB / 0RB Offset |
| | | 39725 to 41515 | 39725, 40620, 41515 | 15MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | 39750 to 41490 | 39750, 40620, 41490 | 20MHz | QPSK, 16QAM, 64QAM | 1 RB / 0 RB Offset |
| **A** | RADIATED EMISSION | 39675 to 41565 | 40620 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | 39700 to 41540 | 39700, 40620,41540 | 10MHz | QPSK | 1 RB / 0RB Offset |
| | | 39725 to 41515 | 40620 | 15MHz | QPSK | 1 RB / 0 RB Offset |
| | | 39750 to 41490 | 40620 | 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.

## 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 | 132072 to 132572 | 132072,132322,132572 | 20MHz | QPSK,16QAM,64QAM | 100 RB / 0 RB Offset |
| A | OCCUPIED BANDWIDTH | 131979 to 132665 | 131979,132322,132665 | 1.4MHz | QPSK,16QAM,64QAM | 6 RB / 0 RB Offset |
| | | 131987 to 132657 | 131987,132322,132657 | 3MHz | QPSK,16QAM,64QAM | 15 RB / 0 RB Offset |
| | | 131997 to 132647 | 131997,132322,132647 | 5MHz | QPSK,16QAM,64QAM | 25 RB / 0 RB Offset |
| | | 132022 to 132622 | 132022,132322,132622 | 10MHz | QPSK,16QAM,64QAM | 50 RB / 0 RB Offset |
| | | 132047 to 132597 | 132047,132322,132597 | 15MHz | QPSK,16QAM,64QAM | 75 RB / 0 RB Offset |
| | | 132072 to 132572 | 132072,132322,132572 | 20MHz | QPSK,16QAM,64QAM | 100 RB / 0 RB Offset |
| A | BAND EDGE | 131979 to 132322 | 131979 | 1.4MHz | QPSK,16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | | 132322 | 1.4MHz | QPSK,16QAM, 64QAM | 1 RB / 5 RB Offset |
| | | | | | | 6 RB / 0 RB Offset |
| | | 131987 to 132657 | 131987 | 3MHz | QPSK,16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | | | | | 15 RB / 0 RB Offset |
| | | | 132657 | 3MHz | QPSK,16QAM, 64QAM | 1 RB / 14 RB Offset |
| | | | | | | 15 RB / 0 RB Offset |
| | | 131997 to 132647 | 131997 | 5MHz | QPSK,16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | | | | | 25 RB / 0 RB Offset |
| | | | 132647 | 5MHz | QPSK,16QAM, 64QAM | 1 RB / 24 RB Offset |
| | | | | | | 25 RB / 0 RB Offset |
| | | 132022 to 132622 | 132022 | 10MHz | QPSK,16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | | | | | 50 RB / 0 RB Offset |
| | | | 132622 | 10MHz | QPSK,16QAM, 64QAM | 1 RB / 49 RB Offset |
| | | | | | | 50 RB / 0 RB Offset |
| | | 132047 to 132597 | 132047 | 15MHz | QPSK,16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | | | | | 75 RB / 0 RB Offset |
| | | | 132597 | 15MHz | QPSK,16QAM, 64QAM | 1 RB / 74 RB Offset |
| | | | | | | 75 RB / 0 RB Offset |
| | | 132072 to 132572 | 132072 | 20MHz | QPSK,16QAM, 64QAM | 1 RB / 0 RB Offset |
| | | | | | | 100 RB / 0 RB Offset |
| | | | 132572 | 20MHz | QPSK,16QAM, 64QAM | 1 RB / 99 RB Offset |
| | | | | | | 100 RB / 0 RB Offset |
| A | CONDCUDETED EMISSION | 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 |
| A | PEAK TO AVERAGE RATIO | 131979 to 132665 | 131979,132322,132665 | 1.4MHz | QPSK,16QAM, 64QAM | 1 RB / 0 RB Offset<br>6 RB / 0 RB Offset |
| | | 131987 to 132657 | 131987,132322,132657 | 3MHz | QPSK,16QAM, 64QAM | 1 RB / 0 RB Offset<br>15 RB / 0 RB Offset |
| | | 131997 to 132647 | 131997,132322,132647 | 5MHz | QPSK,16QAM, 64QAM | 1 RB / 0 RB Offset<br>25 RB / 0 RB Offset |
| | | 132022 to 132622 | 132022,132322,132622 | 10MHz | QPSK,16QAM, 64QAM | 1 RB / 0 RB Offset<br>50 RB / 0 RB Offset |
| | | 132047 to 132597 | 132047,132322,132597 | 15MHz | QPSK,16QAM, 64QAM | 1 RB / 0 RB Offset<br>75 RB / 0 RB Offset |
| | | 132072 to 132572 | 132072,132322,132572 | 20MHz | QPSK,16QAM, 64QAM | 1 RB / 0 RB Offset<br>100 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 | 131997,132322,132647 | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | 132022 to 132622 | 132322 | 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 |
|---|---|---|---|
| EIRP | 23deg. C, 70%RH | DC 5.0V/ 9.0V/ 12.0V By Adapter | Hanwen Xu |
| FREQUENCY STABILITY | 23deg. C, 70%RH | DC 3.6V/ 3.85V/ 4.4V By Battery | Hanwen Xu |
| OCCUPIED BANDWIDTH | 23deg. C, 70%RH | DC 5.0V/ 9.0V/ 12.0V By Adapter | Hanwen Xu |
| BAND EDGE | 23deg. C, 70%RH | DC 5.0V/ 9.0V/ 12.0V By Adapter | Hanwen Xu |
| CONDCUDETED EMISSION | 23deg. C, 70%RH | DC 5.0V/ 9.0V/ 12.0V By Adapter | Hanwen Xu |
| RADIATED EMISSION | 23deg. C, 70%RH | DC 5.0V/ 9.0V/ 12.0V By Adapter | Hanwen Xu |
| PEAK TO AVERAGE RATIO | 23deg. C, 70%RH | DC 5.0V/ 9.0V/ 12.0V 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.

### 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);

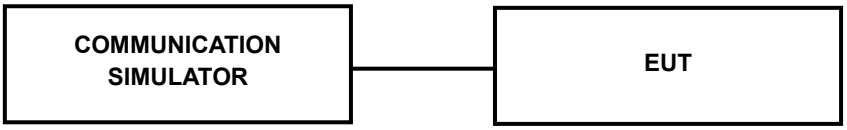
$L_C$ = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

**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

**CONDUCTED OUTPUT POWER (dBm)**

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 | 22.25 | 22.21 | 22.14 |
| | | 1 | 2 | 22.65 | 22.65 | 22.74 |
| | | 1 | 5 | 22.36 | 22.45 | 22.47 |
| | | 3 | 0 | 22.62 | 22.53 | 22.60 |
| | | 3 | 1 | 22.63 | 22.69 | 22.56 |
| | | 3 | 3 | 22.52 | 22.53 | 22.53 |
| | | 6 | 0 | 21.56 | 21.65 | 21.55 |
| | 16QAM | 1 | 0 | 21.59 | 21.53 | 21.44 |
| | | 1 | 2 | 22.08 | 22.02 | 21.84 |
| | | 1 | 5 | 21.72 | 21.62 | 21.66 |
| | | 3 | 0 | 21.45 | 21.57 | 21.58 |
| | | 3 | 1 | 21.58 | 21.54 | 21.70 |
| | | 3 | 3 | 21.49 | 21.57 | 21.68 |
| | | 6 | 0 | 20.54 | 20.52 | 20.45 |
| | 64QAM | 1 | 0 | 20.29 | 20.16 | 20.30 |
| | | 1 | 2 | 20.51 | 20.64 | 20.56 |
| | | 1 | 5 | 20.28 | 20.34 | 20.44 |
| | | 3 | 0 | 20.36 | 20.29 | 20.39 |
| | | 3 | 1 | 20.44 | 20.50 | 20.43 |
| | | 3 | 3 | 20.43 | 20.30 | 20.28 |
| | | 6 | 0 | 19.32 | 19.37 | 19.32 |

| 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 | 22.26 | 22.24 | 22.21 |
| | | 1 | 7 | 22.65 | 22.69 | 22.66 |
| | | 1 | 14 | 22.39 | 22.39 | 22.37 |
| | | 8 | 0 | 21.63 | 21.51 | 21.59 |
| | | 8 | 3 | 21.72 | 21.74 | 21.64 |
| | | 8 | 7 | 21.52 | 21.51 | 21.61 |
| | | 15 | 0 | 21.49 | 21.56 | 21.60 |
| | 16QAM | 1 | 0 | 21.67 | 21.55 | 21.49 |
| | | 1 | 7 | 21.99 | 21.96 | 21.97 |
| | | 1 | 14 | 21.72 | 21.66 | 21.69 |
| | | 8 | 0 | 20.45 | 20.44 | 20.64 |
| | | 8 | 3 | 20.56 | 20.58 | 20.65 |
| | | 8 | 7 | 20.58 | 20.57 | 20.66 |
| | | 15 | 0 | 20.47 | 20.60 | 20.51 |
| | 64QAM | 1 | 0 | 20.22 | 20.17 | 20.19 |
| | | 1 | 7 | 20.60 | 20.55 | 20.63 |
| | | 1 | 14 | 20.39 | 20.36 | 20.44 |
| | | 8 | 0 | 19.34 | 19.36 | 19.41 |
| | | 8 | 3 | 19.53 | 19.38 | 19.43 |
| | | 8 | 7 | 19.44 | 19.28 | 19.41 |
| | | 15 | 0 | 19.35 | 19.46 | 19.29 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 19975 | Mid CH 20175 | High CH 20375 |
|---|---|---|---|---|---|---|
| | | | | Frequency 1712.5 MHz | Frequency 1732.5 MHz | Frequency 1752.5 MHz |
| 4/ 5 | QPSK | 1 | 0 | 22.21 | 22.27 | 22.16 |
| | | 1 | 12 | 22.64 | 22.76 | 22.73 |
| | | 1 | 24 | 22.30 | 22.38 | 22.34 |
| | | 12 | 0 | 21.59 | 21.46 | 21.51 |
| | | 12 | 6 | 21.71 | 21.74 | 21.57 |
| | | 12 | 13 | 21.61 | 21.58 | 21.53 |
| | | 25 | 0 | 21.61 | 21.54 | 21.51 |
| | 16QAM | 1 | 0 | 21.60 | 21.42 | 21.57 |
| | | 1 | 12 | 22.06 | 21.98 | 21.89 |
| | | 1 | 24 | 21.80 | 21.70 | 21.66 |
| | | 12 | 0 | 20.44 | 20.51 | 20.56 |
| | | 12 | 6 | 20.65 | 20.54 | 20.71 |
| | | 12 | 13 | 20.57 | 20.59 | 20.58 |
| | | 25 | 0 | 20.58 | 20.60 | 20.49 |
| | 64QAM | 1 | 0 | 20.19 | 20.22 | 20.27 |
| | | 1 | 12 | 20.59 | 20.58 | 20.59 |
| | | 1 | 24 | 20.28 | 20.28 | 20.43 |
| | | 12 | 0 | 19.28 | 19.40 | 19.41 |
| | | 12 | 6 | 19.50 | 19.47 | 19.40 |
| | | 12 | 13 | 19.39 | 19.31 | 19.36 |
| | | 25 | 0 | 19.38 | 19.36 | 19.36 |

| 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 | 22.28 | 22.27 | 22.18 |
| | | 1 | 24 | 22.74 | 22.65 | 22.63 |
| | | 1 | 49 | 22.31 | 22.42 | 22.35 |
| | | 25 | 0 | 21.65 | 21.55 | 21.57 |
| | | 25 | 12 | 21.69 | 21.75 | 21.62 |
| | | 25 | 25 | 21.49 | 21.53 | 21.59 |
| | | 50 | 0 | 21.54 | 21.56 | 21.51 |
| | 16QAM | 1 | 0 | 21.69 | 21.47 | 21.48 |
| | | 1 | 24 | 22.13 | 21.91 | 21.90 |
| | | 1 | 49 | 21.78 | 21.58 | 21.71 |
| | | 25 | 0 | 20.45 | 20.48 | 20.56 |
| | | 25 | 12 | 20.59 | 20.64 | 20.65 |
| | | 25 | 25 | 20.50 | 20.56 | 20.64 |
| | | 50 | 0 | 20.54 | 20.48 | 20.54 |
| | 64QAM | 1 | 0 | 20.20 | 20.14 | 20.29 |
| | | 1 | 24 | 20.56 | 20.56 | 20.66 |
| | | 1 | 49 | 20.37 | 20.28 | 20.30 |
| | | 25 | 0 | 19.37 | 19.31 | 19.31 |
| | | 25 | 12 | 19.52 | 19.42 | 19.48 |
| | | 25 | 25 | 19.32 | 19.34 | 19.41 |
| | | 50 | 0 | 19.36 | 19.43 | 19.26 |

| 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 | 22.26 | 22.19 | 22.17 |
| | | 1 | 37 | 22.74 | 22.72 | 22.74 |
| | | 1 | 74 | 22.36 | 22.39 | 22.40 |
| | | 36 | 0 | 21.66 | 21.42 | 21.49 |
| | | 36 | 19 | 21.64 | 21.76 | 21.54 |
| | | 36 | 39 | 21.58 | 21.59 | 21.53 |
| | | 75 | 0 | 21.54 | 21.54 | 21.55 |
| | 16QAM | 1 | 0 | 21.62 | 21.53 | 21.56 |
| | | 1 | 37 | 22.10 | 21.98 | 21.92 |
| | | 1 | 74 | 21.74 | 21.63 | 21.60 |
| | | 36 | 0 | 20.41 | 20.50 | 20.59 |
| | | 36 | 19 | 20.65 | 20.65 | 20.64 |
| | | 36 | 39 | 20.57 | 20.45 | 20.68 |
| | | 75 | 0 | 20.57 | 20.59 | 20.40 |
| | 64QAM | 1 | 0 | 20.21 | 20.20 | 20.32 |
| | | 1 | 37 | 20.62 | 20.61 | 20.58 |
| | | 1 | 74 | 20.41 | 20.28 | 20.32 |
| | | 36 | 0 | 19.32 | 19.38 | 19.35 |
| | | 36 | 19 | 19.51 | 19.38 | 19.48 |
| | | 36 | 39 | 19.31 | 19.30 | 19.41 |
| | | 75 | 0 | 19.37 | 19.39 | 19.34 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 20050 | Mid CH 20175 | High CH 20300 |
|---|---|---|---|---|---|---|
| | | | | Frequency 1720 MHz | Frequency 1732.5 MHz | Frequency 1745 MHz |
| 4/ 20 | QPSK | 1 | 0 | 22.29 | 22.33 | 22.25 |
| | | 1 | 50 | 22.78 | **22.79** | 22.75 |
| | | 1 | 99 | 22.42 | 22.52 | 22.49 |
| | | 50 | 0 | 21.69 | 21.57 | 21.62 |
| | | 50 | 25 | 21.77 | 21.80 | 21.69 |
| | | 50 | 50 | 21.64 | 21.64 | 21.65 |
| | | 100 | 0 | 21.63 | 21.66 | 21.61 |
| | 16QAM | 1 | 0 | 21.71 | 21.57 | 21.58 |
| | | 1 | 50 | 22.14 | 22.05 | 21.99 |
| | | 1 | 99 | 21.86 | 21.73 | 21.72 |
| | | 50 | 0 | 20.46 | 20.59 | 20.66 |
| | | 50 | 25 | 20.70 | 20.69 | 20.74 |
| | | 50 | 50 | 20.63 | 20.60 | 20.72 |
| | | 100 | 0 | 20.62 | 20.62 | 20.55 |
| | 64QAM | 1 | 0 | 20.30 | 20.26 | 20.33 |
| | | 1 | 50 | 20.63 | 20.68 | 20.67 |
| | | 1 | 99 | 20.42 | 20.40 | 20.45 |
| | | 50 | 0 | 19.43 | 19.42 | 19.44 |
| | | 50 | 25 | 19.54 | 19.53 | 19.55 |
| | | 50 | 50 | 19.45 | 19.40 | 19.43 |
| | | 100 | 0 | 19.42 | 19.48 | 19.41 |

LTE Band 38

| Band/BW | Modulation | RB Size | RB Offset | Low CH (37775) | Low Mid CH (38000) | Mid CH (38225) |
|---|---|---|---|---|---|---|
| | | | | Frequency (2572.5)MHz | Frequency (2595)MHz | Frequency (2617.5)MHz |
| 38/ 5 | QPSK | 1 | 0 | 22.73 | 22.73 | 22.76 |
| | | 1 | 12 | 22.99 | 22.89 | 23.04 |
| | | 1 | 24 | 22.72 | 22.73 | 22.62 |
| | | 12 | 0 | 21.86 | 21.83 | 21.87 |
| | | 12 | 6 | 22.04 | 21.88 | 21.84 |
| | | 12 | 13 | 21.96 | 21.78 | 21.75 |
| | | 25 | 0 | 22.00 | 21.85 | 21.83 |
| | 16QAM | 1 | 0 | 21.83 | 21.93 | 21.86 |
| | | 1 | 12 | 21.99 | 22.05 | 21.97 |
| | | 1 | 24 | 21.75 | 21.76 | 21.78 |
| | | 12 | 0 | 20.81 | 20.96 | 20.88 |
| | | 12 | 6 | 20.88 | 20.96 | 20.94 |
| | | 12 | 13 | 20.91 | 20.82 | 20.84 |
| | | 25 | 0 | 20.87 | 20.82 | 20.82 |
| | 64QAM | 1 | 0 | 20.32 | 20.60 | 20.32 |
| | | 1 | 12 | 20.60 | 20.69 | 20.52 |
| | | 1 | 24 | 20.37 | 20.56 | 20.22 |
| | | 12 | 0 | 19.80 | 19.83 | 19.86 |
| | | 12 | 6 | 19.90 | 19.96 | 19.79 |
| | | 12 | 13 | 19.80 | 19.93 | 19.70 |
| | | 25 | 0 | 19.80 | 19.88 | 19.81 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH (37800) | Low Mid CH (38000) | Mid CH (38200) |
|---|---|---|---|---|---|---|
| | | | | Frequency (2575)MHz | Frequency (2595)MHz | Frequency (2615)MHz |
| 38/ 10 | QPSK | 1 | 0 | 22.76 | 22.82 | 22.78 |
| | | 1 | 24 | 22.94 | 22.88 | 22.90 |
| | | 1 | 49 | 22.74 | 22.72 | 22.62 |
| | | 25 | 0 | 21.95 | 21.87 | 21.89 |
| | | 25 | 12 | 21.97 | 21.94 | 21.96 |
| | | 25 | 25 | 21.82 | 21.85 | 21.80 |
| | | 50 | 0 | 22.02 | 21.81 | 21.95 |
| | 16QAM | 1 | 0 | 21.80 | 21.89 | 21.83 |
| | | 1 | 24 | 22.09 | 22.07 | 21.91 |
| | | 1 | 49 | 21.80 | 21.76 | 21.70 |
| | | 25 | 0 | 20.87 | 20.87 | 20.88 |
| | | 25 | 12 | 21.01 | 20.97 | 20.91 |
| | | 25 | 25 | 20.94 | 20.78 | 20.80 |
| | | 50 | 0 | 20.80 | 20.89 | 20.77 |
| | 64QAM | 1 | 0 | 20.41 | 20.54 | 20.43 |
| | | 1 | 24 | 20.60 | 20.76 | 20.64 |
| | | 1 | 49 | 20.37 | 20.49 | 20.22 |
| | | 25 | 0 | 19.83 | 19.78 | 19.88 |
| | | 25 | 12 | 19.93 | 19.87 | 19.79 |
| | | 25 | 25 | 19.81 | 19.85 | 19.71 |
| | | 50 | 0 | 19.80 | 19.82 | 19.89 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH (37825) | Low Mid CH (38000) | Mid CH (38175) |
|---|---|---|---|---|---|---|
| | | | | Frequency (2577.5)MHz | Frequency (2595)MHz | Frequency (2612.5)MHz |
| 38/ 15 | QPSK | 1 | 0 | 22.71 | 22.78 | 22.80 |
| | | 1 | 37 | 22.97 | 22.91 | 22.95 |
| | | 1 | 74 | 22.76 | 22.71 | 22.75 |
| | | 36 | 0 | 21.88 | 21.88 | 21.91 |
| | | 36 | 19 | 22.03 | 21.89 | 21.91 |
| | | 36 | 39 | 21.87 | 21.89 | 21.80 |
| | | 75 | 0 | 22.00 | 21.92 | 21.85 |
| | 16QAM | 1 | 0 | 21.84 | 21.79 | 21.83 |
| | | 1 | 37 | 22.08 | 22.13 | 21.98 |
| | | 1 | 74 | 21.74 | 21.70 | 21.73 |
| | | 36 | 0 | 20.81 | 20.99 | 20.87 |
| | | 36 | 19 | 21.00 | 21.04 | 20.94 |
| | | 36 | 39 | 20.94 | 20.79 | 20.75 |
| | | 75 | 0 | 20.79 | 20.91 | 20.81 |
| | 64QAM | 1 | 0 | 20.33 | 20.60 | 20.36 |
| | | 1 | 37 | 20.63 | 20.69 | 20.57 |
| | | 1 | 74 | 20.32 | 20.60 | 20.23 |
| | | 36 | 0 | 19.86 | 19.90 | 19.94 |
| | | 36 | 19 | 19.90 | 19.98 | 19.87 |
| | | 36 | 39 | 19.83 | 19.83 | 19.68 |
| | | 75 | 0 | 19.79 | 19.86 | 19.86 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH (37850) | Low Mid CH (38000) | Mid CH (38150) |
|---|---|---|---|---|---|---|
| | | | | Frequency (2580)MHz | Frequency (2595)MHz | Frequency (2610)MHz |
| 38/ 20 | QPSK | 1 | 0 | 22.80 | 22.87 | 22.85 |
| | | 1 | 50 | 23.01 | 23.00 | **23.05** |
| | | 1 | 99 | 22.86 | 22.81 | 22.76 |
| | | 50 | 0 | 22.01 | 21.96 | 21.97 |
| | | 50 | 25 | 21.99 | 21.97 | 22.07 |
| | | 50 | 50 | 21.97 | 21.91 | 21.89 |
| | | 100 | 0 | 21.97 | 21.95 | 22.03 |
| | 16QAM | 1 | 0 | 21.95 | 21.94 | 21.88 |
| | | 1 | 50 | 22.14 | 22.16 | 22.02 |
| | | 1 | 99 | 21.88 | 21.85 | 21.83 |
| | | 50 | 0 | 20.91 | 21.00 | 20.97 |
| | | 50 | 25 | 21.03 | 21.07 | 20.96 |
| | | 50 | 50 | 20.96 | 20.92 | 20.87 |
| | | 100 | 0 | 20.93 | 20.94 | 20.90 |
| | 64QAM | 1 | 0 | 20.46 | 20.61 | 20.44 |
| | | 1 | 50 | 20.74 | 20.82 | 20.67 |
| | | 1 | 99 | 20.45 | 20.61 | 20.37 |
| | | 50 | 0 | 19.88 | 19.93 | 19.95 |
| | | 50 | 25 | 19.99 | 20.01 | 19.90 |
| | | 50 | 50 | 19.91 | 19.94 | 19.80 |
| | | 100 | 0 | 19.90 | 19.89 | 19.93 |

LTE Band 41

| Band/BW | Modulation | RB Size | RB Offset | Low CH (39675) | Mid CH (40620) | High CH (41565) |
|---|---|---|---|---|---|---|
| | | | | Frequency (2498.5)MHz | Frequency (2593)MHz | Frequency (2687.5)MHz |
| 41/ 5 | QPSK | 1 | 0 | 22.49 | 22.57 | 22.68 |
| | | 1 | 12 | 22.66 | 22.97 | 22.94 |
| | | 1 | 24 | 22.50 | 22.60 | 22.58 |
| | | 12 | 0 | 21.61 | 21.69 | 21.63 |
| | | 12 | 6 | 21.73 | 21.75 | 21.85 |
| | | 12 | 13 | 21.50 | 21.58 | 21.56 |
| | | 25 | 0 | 21.57 | 21.57 | 21.69 |
| | 16QAM | 1 | 0 | 21.51 | 21.75 | 21.47 |
| | | 1 | 12 | 21.76 | 21.93 | 22.00 |
| | | 1 | 24 | 21.53 | 21.54 | 21.61 |
| | | 12 | 0 | 20.62 | 20.88 | 20.70 |
| | | 12 | 6 | 20.72 | 20.97 | 20.85 |
| | | 12 | 13 | 20.47 | 20.67 | 20.70 |
| | | 25 | 0 | 20.59 | 20.66 | 20.67 |
| | 64QAM | 1 | 0 | 20.09 | 20.39 | 20.21 |
| | | 1 | 12 | 20.35 | 20.52 | 20.53 |
| | | 1 | 24 | 20.39 | 20.42 | 20.36 |
| | | 12 | 0 | 19.55 | 19.80 | 19.63 |
| | | 12 | 6 | 19.66 | 19.73 | 19.79 |
| | | 12 | 13 | 19.46 | 19.64 | 19.62 |
| | | 25 | 0 | 19.49 | 19.71 | 19.58 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH (39700) | Mid CH (40620) | High CH (41540) |
|---|---|---|---|---|---|---|
| | | | | Frequency (2501)MHz | Frequency (2593)MHz | Frequency (2685)MHz |
| 41/ 10 | QPSK | 1 | 0 | 22.57 | 22.52 | 22.59 |
| | | 1 | 24 | 22.70 | 22.83 | 22.96 |
| | | 1 | 49 | 22.55 | 22.59 | 22.48 |
| | | 25 | 0 | 21.58 | 21.73 | 21.62 |
| | | 25 | 12 | 21.75 | 21.84 | 21.86 |
| | | 25 | 25 | 21.58 | 21.68 | 21.65 |
| | | 50 | 0 | 21.47 | 21.63 | 21.74 |
| | 16QAM | 1 | 0 | 21.63 | 21.81 | 21.39 |
| | | 1 | 24 | 21.82 | 21.98 | 21.98 |
| | | 1 | 49 | 21.46 | 21.60 | 21.56 |
| | | 25 | 0 | 20.60 | 20.82 | 20.70 |
| | | 25 | 12 | 20.73 | 20.86 | 20.94 |
| | | 25 | 25 | 20.52 | 20.72 | 20.63 |
| | | 50 | 0 | 20.50 | 20.76 | 20.67 |
| | 64QAM | 1 | 0 | 20.04 | 20.38 | 20.18 |
| | | 1 | 24 | 20.44 | 20.49 | 20.52 |
| | | 1 | 49 | 20.31 | 20.39 | 20.46 |
| | | 25 | 0 | 19.54 | 19.78 | 19.68 |
| | | 25 | 12 | 19.66 | 19.75 | 19.82 |
| | | 25 | 25 | 19.41 | 19.74 | 19.55 |
| | | 50 | 0 | 19.49 | 19.73 | 19.66 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH (39725) | Mid CH (40620) | High CH (41515) |
|---|---|---|---|---|---|---|
| | | | | Frequency (2503.5)MHz | Frequency (2593)MHz | Frequency (2682.5)MHz |
| 41/ 15 | QPSK | 1 | 0 | 22.55 | 22.61 | 22.60 |
| | | 1 | 37 | 22.76 | 22.83 | 22.88 |
| | | 1 | 74 | 22.48 | 22.58 | 22.50 |
| | | 36 | 0 | 21.50 | 21.72 | 21.69 |
| | | 36 | 19 | 21.77 | 21.84 | 21.94 |
| | | 36 | 39 | 21.57 | 21.69 | 21.60 |
| | | 75 | 0 | 21.57 | 21.60 | 21.65 |
| | 16QAM | 1 | 0 | 21.65 | 21.81 | 21.41 |
| | | 1 | 37 | 21.78 | 21.98 | 21.92 |
| | | 1 | 74 | 21.52 | 21.52 | 21.63 |
| | | 36 | 0 | 20.64 | 20.85 | 20.67 |
| | | 36 | 19 | 20.75 | 20.96 | 20.93 |
| | | 36 | 39 | 20.43 | 20.69 | 20.60 |
| | | 75 | 0 | 20.53 | 20.76 | 20.72 |
| | 64QAM | 1 | 0 | 20.17 | 20.36 | 20.19 |
| | | 1 | 37 | 20.41 | 20.48 | 20.60 |
| | | 1 | 74 | 20.37 | 20.47 | 20.38 |
| | | 36 | 0 | 19.57 | 19.78 | 19.71 |
| | | 36 | 19 | 19.76 | 19.79 | 19.90 |
| | | 36 | 39 | 19.44 | 19.66 | 19.66 |
| | | 75 | 0 | 19.51 | 19.62 | 19.61 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH ( 39750) | Mid CH (40620) | High CH (41490) |
|---|---|---|---|---|---|---|
| | | | | Frequency (2506)MHz | Frequency (2593)MHz | Frequency (2680)MHz |
| 41/ 20 | QPSK | 1 | 0 | 22.58 | 22.66 | 22.69 |
| | | 1 | 50 | 22.80 | 22.98 | **23.01** |
| | | 1 | 99 | 22.59 | 22.61 | 22.59 |
| | | 50 | 0 | 21.65 | 21.83 | 21.73 |
| | | 50 | 25 | 21.79 | 21.89 | 21.95 |
| | | 50 | 50 | 21.60 | 21.70 | 21.70 |
| | | 100 | 0 | 21.62 | 21.71 | 21.79 |
| | 16QAM | 1 | 0 | 21.66 | 21.87 | 21.54 |
| | | 1 | 50 | 21.86 | 22.02 | 22.06 |
| | | 1 | 99 | 21.56 | 21.63 | 21.69 |
| | | 50 | 0 | 20.70 | 20.90 | 20.74 |
| | | 50 | 25 | 20.78 | 20.98 | 20.97 |
| | | 50 | 50 | 20.55 | 20.78 | 20.74 |
| | | 100 | 0 | 20.60 | 20.80 | 20.81 |
| | 64QAM | 1 | 0 | 20.19 | 20.40 | 20.29 |
| | | 1 | 50 | 20.47 | 20.59 | 20.61 |
| | | 1 | 99 | 20.46 | 20.51 | 20.48 |
| | | 50 | 0 | 19.66 | 19.84 | 19.72 |
| | | 50 | 25 | 19.79 | 19.87 | 19.91 |
| | | 50 | 50 | 19.55 | 19.76 | 19.70 |
| | | 100 | 0 | 19.62 | 19.77 | 19.73 |

LTE Band 66

| Band/BW | Modulation | RB Size | RB Offset | Low CH 131979 | Mid CH 132322 | High CH 132665 |
|---|---|---|---|---|---|---|
| | | | | Frequency 1710.7MHz | Frequency 1745MHz | Frequency 1779.3MHz |
| 66/ 1.4 | QPSK | 1 | 0 | 22.16 | 22.27 | 22.31 |
| | | 1 | 2 | 22.59 | 22.62 | 22.75 |
| | | 1 | 5 | 23.04 | 23.10 | 22.87 |
| | | 3 | 0 | 22.28 | 22.35 | 22.30 |
| | | 3 | 1 | 22.47 | 22.49 | 22.44 |
| | | 3 | 3 | 22.43 | 22.55 | 22.45 |
| | | 6 | 0 | 21.58 | 21.57 | 21.57 |
| | 16QAM | 1 | 0 | 21.56 | 21.58 | 21.73 |
| | | 1 | 2 | 21.96 | 21.97 | 21.99 |
| | | 1 | 5 | 22.03 | 21.98 | 21.98 |
| | | 3 | 0 | 21.26 | 21.33 | 21.31 |
| | | 3 | 1 | 21.27 | 21.41 | 21.40 |
| | | 3 | 3 | 21.39 | 21.58 | 21.45 |
| | | 6 | 0 | 20.56 | 20.47 | 20.64 |
| | 64QAM | 1 | 0 | 20.40 | 20.41 | 20.39 |
| | | 1 | 2 | 20.81 | 20.84 | 20.88 |
| | | 1 | 5 | 20.95 | 20.96 | 20.04 |
| | | 3 | 0 | 20.24 | 20.31 | 20.27 |
| | | 3 | 1 | 20.38 | 20.51 | 20.52 |
| | | 3 | 3 | 20.43 | 20.41 | 20.48 |
| | | 6 | 0 | 19.57 | 19.52 | 19.63 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 131987 | Mid CH 132322 | High CH 132657 |
|---|---|---|---|---|---|---|
| | | | | Frequency 1711.5MHz | Frequency 1745MHz | Frequency 1778.5MHz |
| 66/ 3 | QPSK | 1 | 0 | 22.17 | 22.33 | 22.34 |
| | | 1 | 7 | 22.65 | 22.73 | 22.68 |
| | | 1 | 14 | 22.99 | 23.01 | 22.99 |
| | | 8 | 0 | 21.54 | 21.49 | 21.50 |
| | | 8 | 3 | 21.73 | 21.70 | 21.71 |
| | | 8 | 7 | 21.60 | 21.70 | 21.62 |
| | | 15 | 0 | 21.57 | 21.62 | 21.55 |
| | 16QAM | 1 | 0 | 21.53 | 21.50 | 21.71 |
| | | 1 | 7 | 21.92 | 22.05 | 22.00 |
| | | 1 | 14 | 21.99 | 21.98 | 22.00 |
| | | 8 | 0 | 20.46 | 20.44 | 20.49 |
| | | 8 | 3 | 20.53 | 20.58 | 20.62 |
| | | 8 | 7 | 20.58 | 20.68 | 20.74 |
| | | 15 | 0 | 20.58 | 20.48 | 20.66 |
| | 64QAM | 1 | 0 | 20.33 | 20.43 | 20.37 |
| | | 1 | 7 | 20.81 | 20.78 | 20.82 |
| | | 1 | 14 | 20.98 | 20.92 | 19.94 |
| | | 8 | 0 | 19.43 | 19.55 | 19.47 |
| | | 8 | 3 | 19.55 | 19.67 | 19.74 |
| | | 8 | 7 | 19.54 | 19.69 | 19.74 |
| | | 15 | 0 | 19.46 | 19.53 | 19.62 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 131997 | Mid CH 132322 | High CH 132647 |
|---|---|---|---|---|---|---|
| | | | | Frequency 1712.5MHz | Frequency 1745MHz | Frequency 1777.5MHz |
| 66/ 5 | QPSK | 1 | 0 | 22.16 | 22.21 | 22.42 |
| | | 1 | 12 | 22.57 | 22.65 | 22.75 |
| | | 1 | 24 | 23.06 | 22.97 | 23.00 |
| | | 12 | 0 | 21.48 | 21.55 | 21.45 |
| | | 12 | 6 | 21.69 | 21.79 | 21.76 |
| | | 12 | 13 | 21.69 | 21.76 | 21.62 |
| | | 25 | 0 | 21.52 | 21.58 | 21.57 |
| | 16QAM | 1 | 0 | 21.56 | 21.56 | 21.68 |
| | | 1 | 12 | 22.01 | 21.95 | 22.00 |
| | | 1 | 24 | 21.95 | 22.02 | 21.93 |
| | | 12 | 0 | 20.43 | 20.53 | 20.50 |
| | | 12 | 6 | 20.57 | 20.53 | 20.61 |
| | | 12 | 13 | 20.57 | 20.68 | 20.66 |
| | | 25 | 0 | 20.64 | 20.47 | 20.60 |
| | 64QAM | 1 | 0 | 20.37 | 20.41 | 20.37 |
| | | 1 | 12 | 20.76 | 20.86 | 20.83 |
| | | 1 | 24 | 20.98 | 20.99 | 19.90 |
| | | 12 | 0 | 19.45 | 19.56 | 19.54 |
| | | 12 | 6 | 19.56 | 19.63 | 19.77 |
| | | 12 | 13 | 19.52 | 19.70 | 19.64 |
| | | 25 | 0 | 19.55 | 19.51 | 19.70 |

| 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 | 22.11 | 22.20 | 22.40 |
| | | 1 | 24 | 22.56 | 22.62 | 22.76 |
| | | 1 | 49 | 23.07 | 23.06 | 22.91 |
| | | 25 | 0 | 21.46 | 21.48 | 21.50 |
| | | 25 | 12 | 21.66 | 21.78 | 21.76 |
| | | 25 | 25 | 21.71 | 21.72 | 21.56 |
| | | 50 | 0 | 21.53 | 21.58 | 21.60 |
| | 16QAM | 1 | 0 | 21.56 | 21.48 | 21.71 |
| | | 1 | 24 | 21.87 | 21.94 | 21.95 |
| | | 1 | 49 | 21.99 | 21.98 | 21.94 |
| | | 25 | 0 | 20.43 | 20.49 | 20.49 |
| | | 25 | 12 | 20.47 | 20.49 | 20.61 |
| | | 25 | 25 | 20.66 | 20.78 | 20.63 |
| | | 50 | 0 | 20.55 | 20.60 | 20.65 |
| | 64QAM | 1 | 0 | 20.36 | 20.42 | 20.28 |
| | | 1 | 24 | 20.69 | 20.84 | 20.82 |
| | | 1 | 49 | 20.93 | 20.87 | 20.04 |
| | | 25 | 0 | 19.41 | 19.54 | 19.50 |
| | | 25 | 12 | 19.64 | 19.71 | 19.73 |
| | | 25 | 25 | 19.51 | 19.66 | 19.73 |
| | | 50 | 0 | 19.55 | 19.45 | 19.73 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 132047 | Mid CH 132322 | High CH 132597 |
|---|---|---|---|---|---|---|
| | | | | Frequency 1717.5 MHz | Frequency 1745MHz | Frequency 1772.5 MHz |
| 66/ 15 | QPSK | 1 | 0 | 22.21 | 22.22 | 22.36 |
| | | 1 | 37 | 22.66 | 22.70 | 22.72 |
| | | 1 | 74 | 22.95 | 23.08 | 22.93 |
| | | 36 | 0 | 21.44 | 21.62 | 21.50 |
| | | 36 | 19 | 21.64 | 21.67 | 21.62 |
| | | 36 | 39 | 21.67 | 21.63 | 21.56 |
| | | 75 | 0 | 21.47 | 21.66 | 21.58 |
| | 16QAM | 1 | 0 | 21.56 | 21.47 | 21.69 |
| | | 1 | 37 | 21.95 | 22.03 | 21.99 |
| | | 1 | 74 | 22.00 | 22.06 | 22.01 |
| | | 36 | 0 | 20.38 | 20.48 | 20.51 |
| | | 36 | 19 | 20.57 | 20.50 | 20.64 |
| | | 36 | 39 | 20.59 | 20.74 | 20.75 |
| | | 75 | 0 | 20.59 | 20.55 | 20.62 |
| | 64QAM | 1 | 0 | 20.42 | 20.32 | 20.42 |
| | | 1 | 37 | 20.73 | 20.81 | 20.78 |
| | | 1 | 74 | 20.97 | 20.92 | 20.04 |
| | | 36 | 0 | 19.39 | 19.44 | 19.54 |
| | | 36 | 19 | 19.65 | 19.69 | 19.73 |
| | | 36 | 39 | 19.53 | 19.65 | 19.63 |
| | | 75 | 0 | 19.45 | 19.53 | 19.71 |

| Band/BW | Modulation | RB Size | RB Offset | Low CH 132072 | Mid CH 132322 | High CH 132572 |
|---|---|---|---|---|---|---|
| | | | | Frequency 1720MHz | Frequency 1745MHz | Frequency 1770MHz |
| 66/ 20 | QPSK | 1 | 0 | 22.22 | 22.35 | 22.45 |
| | | 1 | 50 | 22.68 | 22.76 | 22.82 |
| | | 1 | 99 | 23.09 | **23.12** | 23.02 |
| | | 50 | 0 | 21.55 | 21.63 | 21.58 |
| | | 50 | 25 | 21.78 | 21.80 | 21.77 |
| | | 50 | 50 | 21.73 | 21.77 | 21.70 |
| | | 100 | 0 | 21.62 | 21.69 | 21.66 |
| | 16QAM | 1 | 0 | 21.67 | 21.62 | 21.75 |
| | | 1 | 50 | 22.02 | 22.07 | 22.01 |
| | | 1 | 99 | 22.07 | 22.09 | 22.04 |
| | | 50 | 0 | 20.52 | 20.57 | 20.59 |
| | | 50 | 25 | 20.60 | 20.63 | 20.74 |
| | | 50 | 50 | 20.72 | 20.81 | 20.77 |
| | | 100 | 0 | 20.65 | 20.62 | 20.70 |
| | 64QAM | 1 | 0 | 20.44 | 20.44 | 20.43 |
| | | 1 | 50 | 20.84 | 20.87 | 20.92 |
| | | 1 | 99 | 21.00 | 21.01 | 20.05 |
| | | 50 | 0 | 19.52 | 19.59 | 19.56 |
| | | 50 | 25 | 19.69 | 19.75 | 19.79 |
| | | 50 | 50 | 19.66 | 19.71 | 19.76 |
| | | 100 | 0 | 19.59 | 19.57 | 19.74 |

**EIRP**
**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 | 22.65 | -0.8 | 21.85 | 153.11 | 1 |
| 20175 | 1732.5 | 22.69 | -0.8 | 21.89 | 154.53 | 1 |
| 20393 | 1754.3 | 22.74 | -0.8 | 21.94 | 156.31 | 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 | 22.08 | -0.8 | 21.28 | 134.28 | 1 |
| 20175 | 1732.5 | 22.02 | -0.8 | 21.22 | 132.43 | 1 |
| 20393 | 1754.3 | 21.84 | -0.8 | 21.04 | 127.06 | 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 | 20.51 | -0.8 | 19.71 | 93.54 | 1 |
| 20175 | 1732.5 | 20.64 | -0.8 | 19.84 | 96.38 | 1 |
| 20393 | 1754.3 | 20.56 | -0.8 | 19.76 | 94.62 | 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 | 22.65 | -0.8 | 21.85 | 153.11 | 1 |
| 20175 | 1732.5 | 22.69 | -0.8 | 21.89 | 154.53 | 1 |
| 20385 | 1753.5 | 22.66 | -0.8 | 21.86 | 153.46 | 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 | 21.99 | -0.8 | 21.19 | 131.52 | 1 |
| 20175 | 1732.5 | 21.99 | -0.8 | 21.19 | 131.52 | 1 |
| 20385 | 1753.5 | 21.72 | -0.8 | 20.92 | 123.59 | 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 | 20.6 | -0.8 | 19.8 | 95.5 | 1 |
| 20175 | 1732.5 | 20.55 | -0.8 | 19.75 | 94.41 | 1 |
| 20385 | 1753.5 | 20.63 | -0.8 | 19.83 | 96.16 | 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 | 22.64 | -0.8 | 21.84 | 152.76 | 1 |
| 20175 | 1732.5 | 22.76 | -0.8 | 21.96 | 157.04 | 1 |
| 20375 | 1752.5 | 22.73 | -0.8 | 21.93 | 155.96 | 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 | 22.06 | -0.8 | 21.26 | 133.66 | 1 |
| 20175 | 1732.5 | 21.98 | -0.8 | 21.18 | 131.22 | 1 |
| 20375 | 1752.5 | 21.89 | -0.8 | 21.09 | 128.53 | 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 | 20.59 | -0.8 | 19.79 | 95.28 | 1 |
| 20175 | 1732.5 | 20.58 | -0.8 | 19.78 | 95.06 | 1 |
| 20375 | 1752.5 | 20.59 | -0.8 | 19.79 | 95.28 | 1 |

**CHANNEL BANDWIDTH: 10MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20000 | 1715 | 22.74 | -0.8 | 21.94 | 156.31 | 1 |
| 20175 | 1732.5 | 22.65 | -0.8 | 21.85 | 153.11 | 1 |
| 20350 | 1750 | 22.63 | -0.8 | 21.83 | 152.41 | 1 |

**CHANNEL BANDWIDTH: 10MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20000 | 1715 | 22.13 | -0.8 | 21.33 | 135.83 | 1 |
| 20175 | 1732.5 | 21.91 | -0.8 | 21.11 | 129.12 | 1 |
| 20350 | 1750 | 21.9 | -0.8 | 21.1 | 128.82 | 1 |

**CHANNEL BANDWIDTH: 10MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20000 | 1715 | 20.56 | -0.8 | 19.76 | 94.62 | 1 |
| 20175 | 1732.5 | 20.56 | -0.8 | 19.76 | 94.62 | 1 |
| 20350 | 1750 | 20.66 | -0.8 | 19.86 | 96.83 | 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 | 22.74 | -0.8 | 21.94 | 156.31 | 1 |
| 20175 | 1732.5 | 22.72 | -0.8 | 21.92 | 155.6 | 1 |
| 20325 | 1747.5 | 22.74 | -0.8 | 21.94 | 156.31 | 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 | 22.1 | -0.8 | 21.3 | 134.9 | 1 |
| 20175 | 1732.5 | 21.98 | -0.8 | 21.18 | 131.22 | 1 |
| 20325 | 1747.5 | 21.92 | -0.8 | 21.12 | 129.42 | 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 | 20.62 | -0.8 | 19.82 | 95.94 | 1 |
| 20175 | 1732.5 | 20.61 | -0.8 | 19.81 | 95.72 | 1 |
| 20325 | 1747.5 | 20.58 | -0.8 | 19.78 | 95.06 | 1 |

**CHANNEL BANDWIDTH: 20MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20050 | 1720 | 22.78 | -0.8 | 21.98 | 157.76 | 1 |
| 20175 | 1732.5 | 22.79 | -0.8 | 21.99 | 158.12 | 1 |
| 20300 | 1745 | 22.75 | -0.8 | 21.95 | 156.68 | 1 |

**CHANNEL BANDWIDTH: 20MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20050 | 1720 | 22.14 | -0.8 | 21.34 | 136.14 | 1 |
| 20175 | 1732.5 | 22.05 | -0.8 | 21.25 | 133.35 | 1 |
| 20300 | 1745 | 21.99 | -0.8 | 21.19 | 131.52 | 1 |

**CHANNEL BANDWIDTH: 20MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 20050 | 1720 | 20.63 | -0.8 | 19.83 | 96.16 | 1 |
| 20175 | 1732.5 | 20.68 | -0.8 | 19.88 | 97.27 | 1 |
| 20300 | 1745 | 20.67 | -0.8 | 19.87 | 97.05 | 1 |

**LTE BAND 38**

**CHANNEL BANDWIDTH: 5MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 37775 | 2572.5 | 22.99 | -1.2 | 21.79 | 151.01 | 2 |
| 38000 | 2595.0 | 22.89 | -1.2 | 21.69 | 147.57 | 2 |
| 38225 | 2617.5 | 23.04 | -1.2 | 21.84 | 152.76 | 2 |

**CHANNEL BANDWIDTH: 5MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 37775 | 2572.5 | 21.99 | -1.2 | 20.79 | 119.95 | 2 |
| 38000 | 2595.0 | 22.05 | -1.2 | 20.85 | 121.62 | 2 |
| 38225 | 2617.5 | 21.97 | -1.2 | 20.77 | 119.4 | 2 |

**CHANNEL BANDWIDTH: 5MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 37775 | 2572.5 | 20.6 | -1.2 | 19.4 | 87.1 | 2 |
| 38000 | 2595 | 20.69 | -1.2 | 19.49 | 88.92 | 2 |
| 38225 | 2617.5 | 20.52 | -1.2 | 19.32 | 85.51 | 2 |

**CHANNEL BANDWIDTH: 10MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 37800 | 2575.0 | 22.94 | -1.2 | 21.74 | 149.28 | 2 |
| 38000 | 2595.0 | 22.88 | -1.2 | 21.68 | 147.23 | 2 |
| 38200 | 2615.0 | 22.9 | -1.2 | 21.7 | 147.91 | 2 |

**CHANNEL BANDWIDTH: 10MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 37800 | 2575.0 | 22.09 | -1.2 | 20.89 | 122.74 | 2 |
| 38000 | 2595.0 | 22.07 | -1.2 | 20.87 | 122.18 | 2 |
| 38200 | 2615.0 | 21.91 | -1.2 | 20.71 | 117.76 | 2 |

**CHANNEL BANDWIDTH: 10MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 37800 | 2575 | 20.6 | -1.2 | 19.4 | 87.1 | 2 |
| 38000 | 2595 | 20.76 | -1.2 | 19.56 | 90.36 | 2 |
| 38200 | 2615 | 20.64 | -1.2 | 19.44 | 87.9 | 2 |

**CHANNEL BANDWIDTH: 15MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 37825 | 2577.5 | 22.97 | -1.2 | 21.77 | 150.31 | 2 |
| 38000 | 2595.0 | 22.91 | -1.2 | 21.71 | 148.25 | 2 |
| 38175 | 2612.5 | 22.95 | -1.2 | 21.75 | 149.62 | 2 |

**CHANNEL BANDWIDTH: 15MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 37825 | 2577.5 | 22.08 | -1.2 | 20.88 | 122.46 | 2 |
| 38000 | 2595.0 | 22.13 | -1.2 | 20.93 | 123.88 | 2 |
| 38175 | 2612.5 | 21.98 | -1.2 | 20.78 | 119.67 | 2 |

**CHANNEL BANDWIDTH: 15MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 37825 | 2577.5 | 20.63 | -1.2 | 19.43 | 87.7 | 2 |
| 38000 | 2595 | 20.69 | -1.2 | 19.49 | 88.92 | 2 |
| 38175 | 2612.5 | 20.57 | -1.2 | 19.37 | 86.5 | 2 |

**CHANNEL BANDWIDTH: 20MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 37850 | 2580.0 | 23.01 | -1.2 | 21.81 | 151.71 | 2 |
| 38000 | 2595.0 | 23 | -1.2 | 21.8 | 151.36 | 2 |
| 38150 | 2610.0 | 23.05 | -1.2 | 21.85 | 153.11 | 2 |

**CHANNEL BANDWIDTH: 20MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 37850 | 2580.0 | 22.14 | -1.2 | 20.94 | 124.17 | 2 |
| 38000 | 2595.0 | 22.16 | -1.2 | 20.96 | 124.74 | 2 |
| 38150 | 2610.0 | 22.02 | -1.2 | 20.82 | 120.78 | 2 |

**CHANNEL BANDWIDTH: 20MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 37850 | 2580 | 20.74 | -1.2 | 19.54 | 89.95 | 2 |
| 38000 | 2595 | 20.82 | -1.2 | 19.62 | 91.62 | 2 |
| 38150 | 2610 | 20.67 | -1.2 | 19.47 | 88.51 | 2 |

**LTE BAND 41**

**CHANNEL BANDWIDTH: 5MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 39675 | 2498.5 | 22.66 | -1.2 | 21.46 | 139.96 | 2 |
| 40620 | 2593 | 22.97 | -1.2 | 21.77 | 150.31 | 2 |
| 41565 | 2687.5 | 22.94 | -1.2 | 21.74 | 149.28 | 2 |

**CHANNEL BANDWIDTH: 5MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 39675 | 2498.5 | 21.76 | -1.2 | 20.56 | 113.76 | 2 |
| 40620 | 2593 | 21.93 | -1.2 | 20.73 | 118.3 | 2 |
| 41565 | 2687.5 | 22 | -1.2 | 20.8 | 120.23 | 2 |

**CHANNEL BANDWIDTH: 5MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 39675 | 2498.5 | 20.39 | -1.2 | 19.19 | 82.99 | 2 |
| 40620 | 2593 | 20.52 | -1.2 | 19.32 | 85.51 | 2 |
| 41565 | 2687.5 | 20.53 | -1.2 | 19.33 | 85.7 | 2 |

**CHANNEL BANDWIDTH: 10MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 39700 | 2501 | 22.7 | -1.2 | 21.5 | 141.25 | 2 |
| 40620 | 2593 | 22.83 | -1.2 | 21.63 | 145.55 | 2 |
| 41540 | 2685 | 22.96 | -1.2 | 21.76 | 149.97 | 2 |

**CHANNEL BANDWIDTH: 10MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 39700 | 2501 | 21.82 | -1.2 | 20.62 | 115.35 | 2 |
| 40620 | 2593 | 21.98 | -1.2 | 20.78 | 119.67 | 2 |
| 41540 | 2685 | 21.98 | -1.2 | 20.78 | 119.67 | 2 |

**CHANNEL BANDWIDTH: 10MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 39700 | 2501 | 20.44 | -1.2 | 19.24 | 83.95 | 2 |
| 40620 | 2593 | 20.49 | -1.2 | 19.29 | 84.92 | 2 |
| 41540 | 2685 | 20.52 | -1.2 | 19.32 | 85.51 | 2 |

**CHANNEL BANDWIDTH: 15MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 39725 | 2503.5 | 22.76 | -1.2 | 21.56 | 143.22 | 2 |
| 40620 | 2593 | 22.83 | -1.2 | 21.63 | 145.55 | 2 |
| 41515 | 2682.5 | 22.88 | -1.2 | 21.68 | 147.23 | 2 |

**CHANNEL BANDWIDTH: 15MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 39725 | 2503.5 | 21.78 | -1.2 | 20.58 | 114.29 | 2 |
| 40620 | 2593 | 21.98 | -1.2 | 20.78 | 119.67 | 2 |
| 41515 | 2682.5 | 21.92 | -1.2 | 20.72 | 118.03 | 2 |

**CHANNEL BANDWIDTH: 15MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 39725 | 2503.5 | 20.41 | -1.2 | 19.21 | 83.37 | 2 |
| 40620 | 2593 | 20.48 | -1.2 | 19.28 | 84.72 | 2 |
| 41515 | 2682.5 | 20.6 | -1.2 | 19.4 | 87.1 | 2 |

**CHANNEL BANDWIDTH: 20MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 39750 | 2506 | 22.8 | -1.2 | 21.6 | 144.54 | 2 |
| 40620 | 2593 | 22.98 | -1.2 | 21.78 | 150.66 | 2 |
| 41490 | 2680 | 23.01 | -1.2 | 21.81 | 151.71 | 2 |

**CHANNEL BANDWIDTH: 20MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 39750 | 2506 | 21.86 | -1.2 | 20.66 | 116.41 | 2 |
| 40620 | 2593 | 22.02 | -1.2 | 20.82 | 120.78 | 2 |
| 41490 | 2680 | 22.06 | -1.2 | 20.86 | 121.9 | 2 |

**CHANNEL BANDWIDTH: 20 MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 39750 | 2506 | 20.47 | -1.2 | 19.27 | 84.53 | 2 |
| 40620 | 2593 | 20.59 | -1.2 | 19.39 | 86.9 | 2 |
| 41490 | 2680 | 20.61 | -1.2 | 19.41 | 87.3 | 2 |

**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 | 23.04 | -0.8 | 22.24 | 167.49 | 1 |
| 132322 | 1745 | 23.1 | -0.8 | 22.3 | 169.82 | 1 |
| 132665 | 1779.3 | 22.87 | -0.8 | 22.07 | 161.06 | 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 | 22.03 | -0.8 | 21.23 | 132.74 | 1 |
| 132322 | 1745 | 21.98 | -0.8 | 21.18 | 131.22 | 1 |
| 132665 | 1779.3 | 21.99 | -0.8 | 21.19 | 131.52 | 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 | 20.95 | -0.8 | 20.15 | 103.51 | 1 |
| 132322 | 1745 | 20.96 | -0.8 | 20.16 | 103.75 | 1 |
| 132665 | 1779.3 | 20.88 | -0.8 | 20.08 | 101.86 | 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 | 22.99 | -0.8 | 22.19 | 165.58 | 1 |
| 132322 | 1745 | 23.01 | -0.8 | 22.21 | 166.34 | 1 |
| 132657 | 1778.5 | 22.99 | -0.8 | 22.19 | 165.58 | 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 | 21.99 | -0.8 | 21.19 | 131.52 | 1 |
| 132322 | 1745 | 22.05 | -0.8 | 21.25 | 133.35 | 1 |
| 132657 | 1778.5 | 22 | -0.8 | 21.2 | 131.83 | 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 | 20.98 | -0.8 | 20.18 | 104.23 | 1 |
| 132322 | 1745 | 20.92 | -0.8 | 20.12 | 102.8 | 1 |
| 132657 | 1778.5 | 20.82 | -0.8 | 20.02 | 100.46 | 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 | 23.06 | -0.8 | 22.26 | 168.27 | 1 |
| 132322 | 1745 | 22.97 | -0.8 | 22.17 | 164.82 | 1 |
| 132647 | 1777.5 | 23 | -0.8 | 22.2 | 165.96 | 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 | 22.01 | -0.8 | 21.21 | 132.13 | 1 |
| 132322 | 1745 | 22.02 | -0.8 | 21.22 | 132.43 | 1 |
| 132647 | 1777.5 | 22 | -0.8 | 21.2 | 131.83 | 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 | 20.98 | -0.8 | 20.18 | 104.23 | 1 |
| 132322 | 1745 | 20.99 | -0.8 | 20.19 | 104.47 | 1 |
| 132647 | 1777.5 | 20.83 | -0.8 | 20.03 | 100.69 | 1 |

**CHANNEL BANDWIDTH: 10MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132022 | 1715 | 23.07 | -0.8 | 22.27 | 168.66 | 1 |
| 132322 | 1745 | 23.06 | -0.8 | 22.26 | 168.27 | 1 |
| 132622 | 1775 | 22.91 | -0.8 | 22.11 | 162.55 | 1 |

**CHANNEL BANDWIDTH: 10MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132022 | 1715 | 21.99 | -0.8 | 21.19 | 131.52 | 1 |
| 132322 | 1745 | 21.98 | -0.8 | 21.18 | 131.22 | 1 |
| 132622 | 1775 | 21.95 | -0.8 | 21.15 | 130.32 | 1 |

**CHANNEL BANDWIDTH: 10MHz 64QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132022 | 1715 | 20.93 | -0.8 | 20.13 | 103.04 | 1 |
| 132322 | 1745 | 20.87 | -0.8 | 20.07 | 101.62 | 1 |
| 132622 | 1775 | 20.82 | -0.8 | 20.02 | 100.46 | 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 | 22.95 | -0.8 | 22.15 | 164.06 | 1 |
| 132322 | 1745 | 23.08 | -0.8 | 22.28 | 169.04 | 1 |
| 132597 | 1772.5 | 22.93 | -0.8 | 22.13 | 163.31 | 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 | -0.8 | 21.2 | 131.83 | 1 |
| 132322 | 1745 | 22.06 | -0.8 | 21.26 | 133.66 | 1 |
| 132597 | 1772.5 | 22.01 | -0.8 | 21.21 | 132.13 | 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 | 20.97 | -0.8 | 20.17 | 103.99 | 1 |
| 132322 | 1745 | 20.92 | -0.8 | 20.12 | 102.8 | 1 |
| 132597 | 1772.5 | 20.78 | -0.8 | 19.98 | 99.54 | 1 |

**CHANNEL BANDWIDTH: 20MHz QPSK**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132072 | 1720 | 23.09 | -0.8 | 22.29 | 169.43 | 1 |
| 132322 | 1745 | 23.12 | -0.8 | 22.32 | 170.61 | 1 |
| 132572 | 1770 | 23.02 | -0.8 | 22.22 | 166.72 | 1 |

**CHANNEL BANDWIDTH: 20MHz 16QAM**

| Channel | Frequency (MHz) | Conducted Power (dBm) | $G_T$-$L_C$ (dB) | EIRP (dBm) | EIRP (mW) | Limit (W) |
|---|---|---|---|---|---|---|
| 132072 | 1720 | 22.07 | -0.8 | 21.27 | 133.97 | 1 |
| 132322 | 1745 | 22.09 | -0.8 | 21.29 | 134.59 | 1 |
| 132572 | 1770 | 22.04 | -0.8 | 21.24 | 133.05 | 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 | -0.8 | 20.2 | 104.71 | 1 |
| 132322 | 1745 | 21.01 | -0.8 | 20.21 | 104.95 | 1 |
| 132572 | 1770 | 20.92 | -0.8 | 20.12 | 102.8 | 1 |

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

## 3.2 FREQUENCY STABILITY MEASUREMENT

### 3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

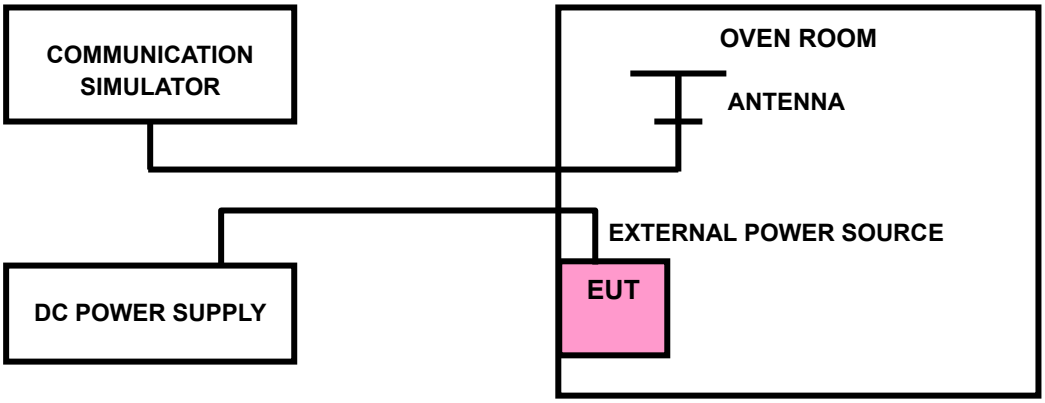
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

### 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.

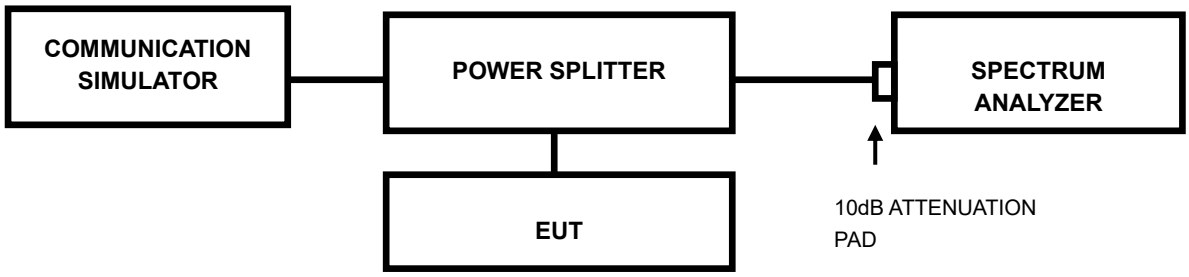
Note: VL = Low voltage(3.6V); VN/NV = Normal voltage(3.85V); VH = High voltage(4.4V);
NT = Normal temperature (25℃)

## 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

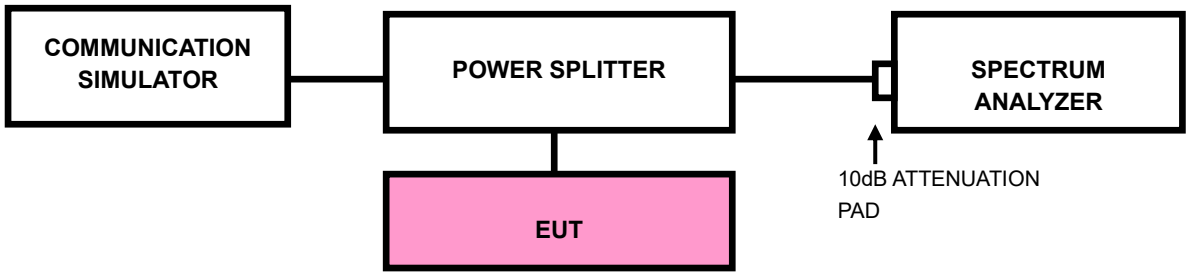
### 3.4.1 LIMITS OF BAND EDGE MEASUREMENT

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.

47 CFR 27.50(d)(4)

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. Fixed stations operating in the 1710–1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

### 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

For LTE Band4/66
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit is equal to –13dBm.

For LTE Band38/41

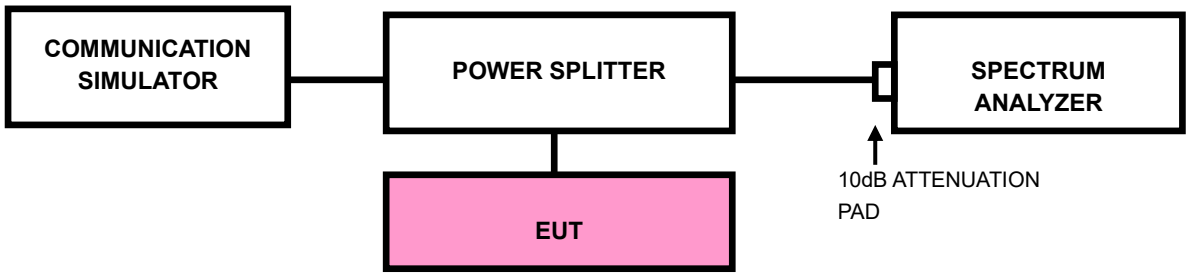
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 55 +10 log10(P) dB. The limit of emission is equal to -25dBm.

### 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

For LTE Band4/66
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit is equal to –13dBm.

For LTE Band38/41

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 55 +10 log10(P) dB. The limit of emission is equal to -25dBm.

### 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.

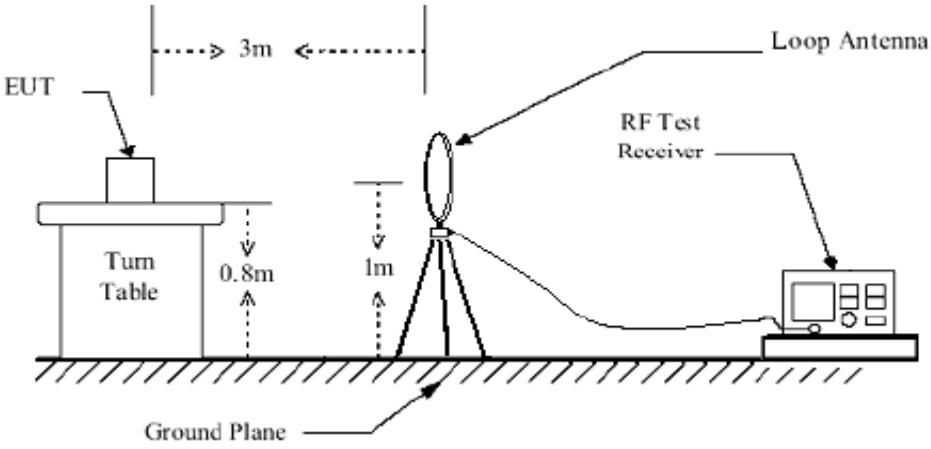
**NOTE:** The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

### 3.6.3 DEVIATION FROM TEST STANDARD

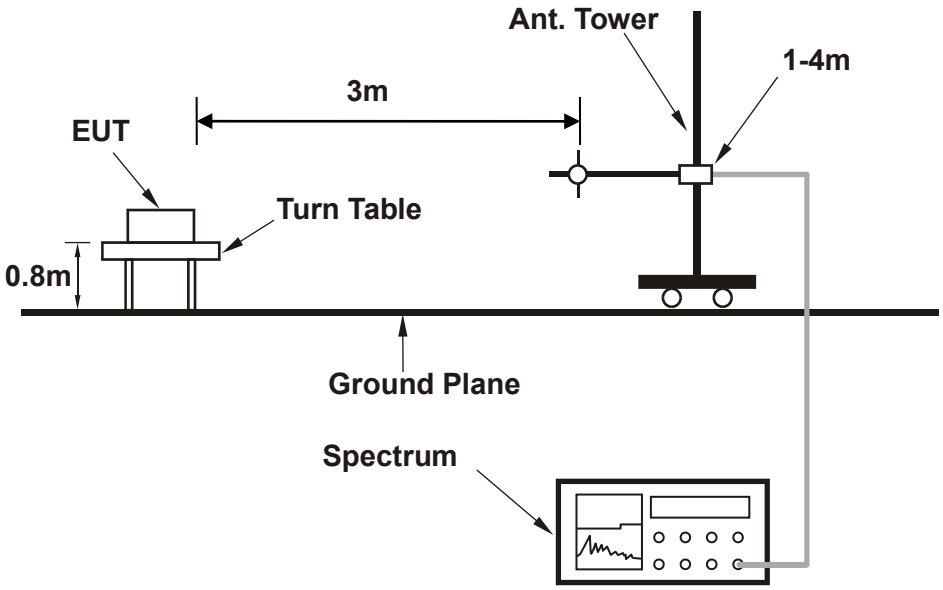
No deviation

## 3.6.4 TEST SETUP

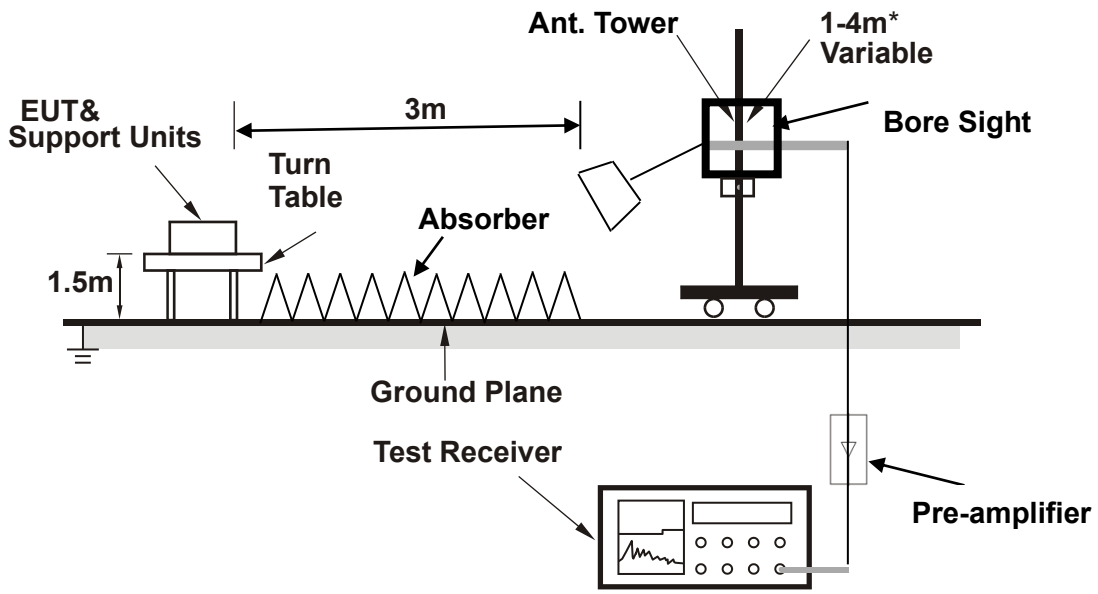
**< Frequency Range below 30MHz >**




**< 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**

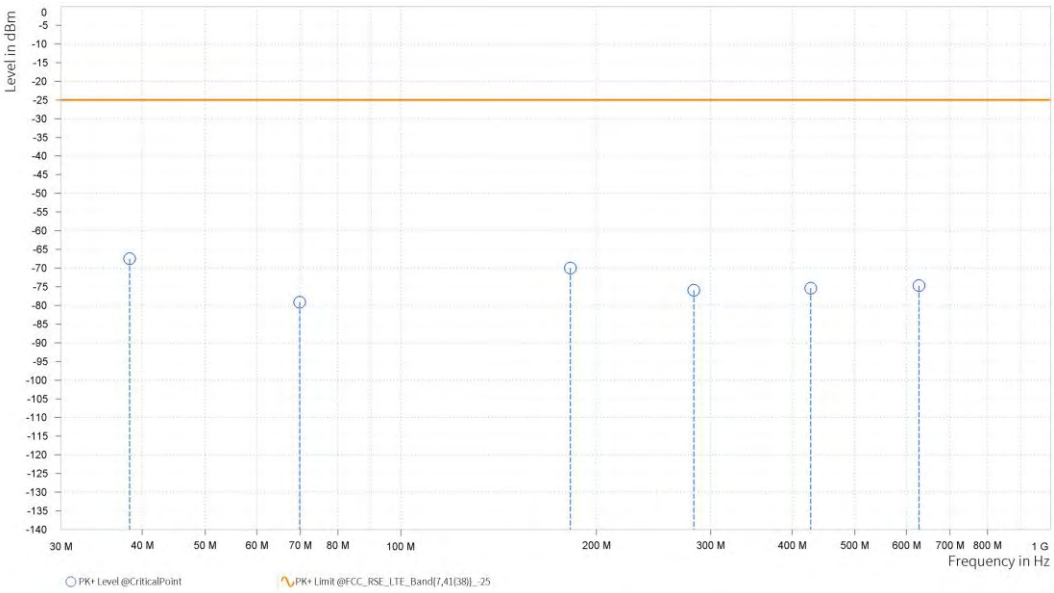
**30 MHz – 1GHz data:**

**LTE Band 41**
**CHANNEL BANDWIDTH: 10MHz / QPSK**

| | | | |
|---|---|---|---|
| **MODE** | TX channel 40620 | **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**

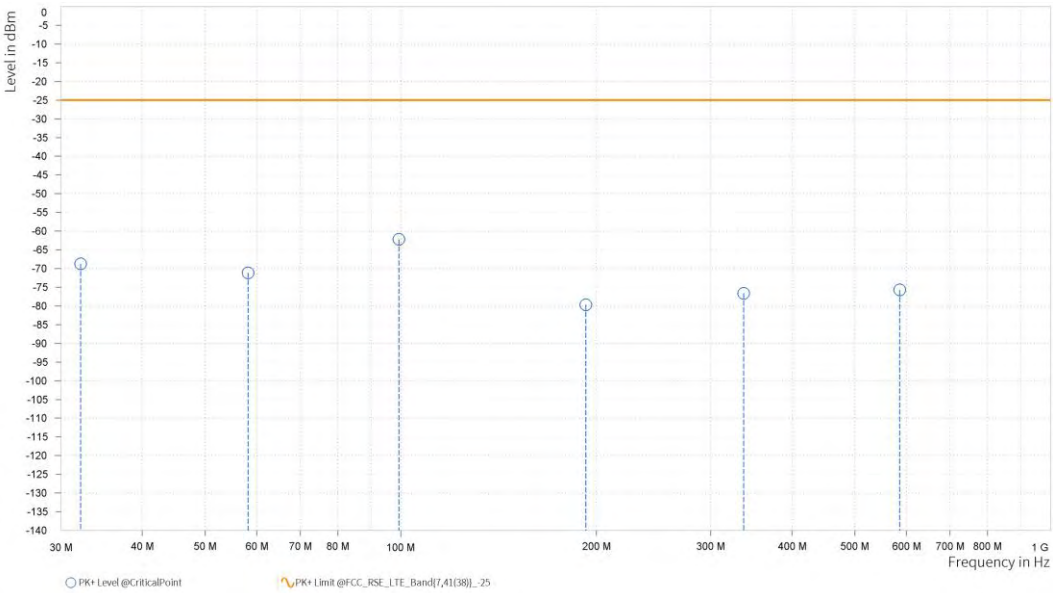
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 1 | 38.25 | -67.52 | -25.0 | 42.52 | 0.28 | H | 359.1 | 1.0 |
| 1 | 69.85 | -79.13 | -25.0 | 54.13 | -10.07 | H | 169.0 | 1.0 |
| 1 | 182.35 | -70.0 | -25.0 | 45.0 | -6.38 | H | 169.0 | 1.0 |
| 1 | 282.5 | -75.91 | -25.0 | 50.91 | -0.87 | H | 240.7 | 1.0 |
| 1 | 427.6 | -75.38 | -25.0 | 50.38 | 3.39 | H | 355.1 | 2.0 |
| 2 | 627.238 | -74.71 | -25.0 | 49.71 | 1.94 | H | 79.8 | 2.0 |



| MODE | TX channel 40620 | 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 | 32.15 | -68.77 | -25.0 | 43.77 | -8.92 | V | 258.6 | 1.0 |
| 1 | 58.2 | -71.16 | -25.0 | 46.16 | -2.89 | V | 102.1 | 1.0 |
| 1 | 99.35 | -62.19 | -25.0 | 37.19 | 5.73 | V | 258.6 | 1.0 |
| 1 | 192.65 | -79.66 | -25.0 | 54.66 | -6.95 | V | 1.0 | 1.0 |
| 1 | 336.9 | -76.64 | -25.0 | 51.64 | 0.74 | V | 119.3 | 2.0 |
| 2 | 585.713 | -75.74 | -25.0 | 50.74 | 1.7 | V | 175.4 | 2.0 |



**ABOVE 1GHz**

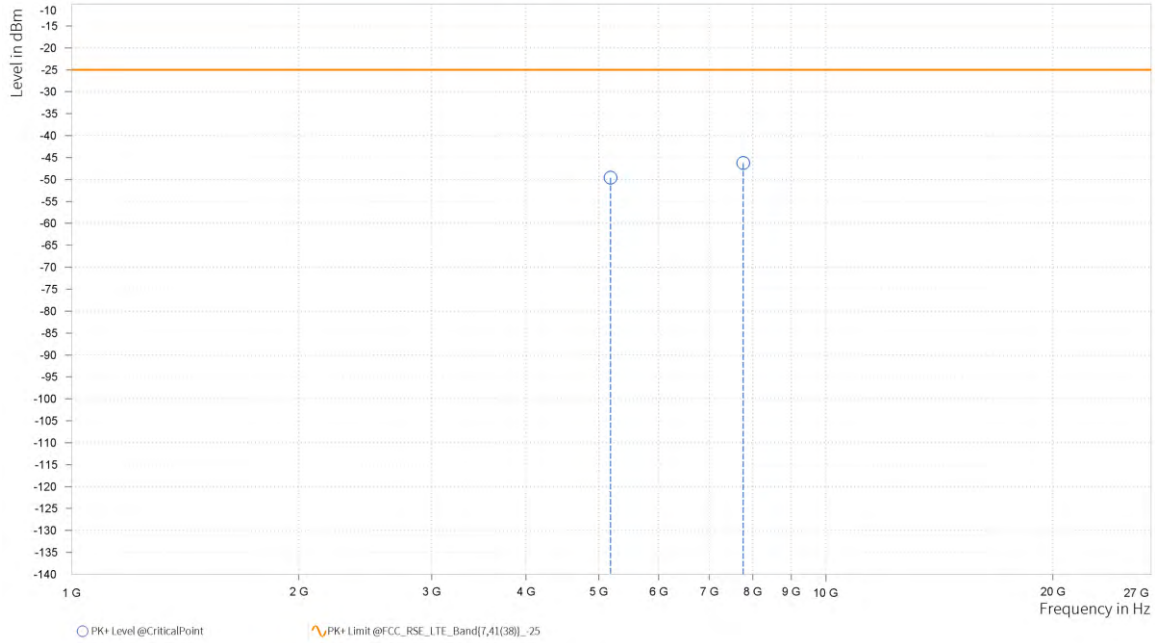
**Note:** For higher frequency, the emission is too low to be detected.

**LTE BAND 41**

**CHANNEL BANDWIDTH: 5MHz / QPSK**

| | | | |
|---|---|---|---|
| **MODE** | TX channel 40620 | **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** | | | |

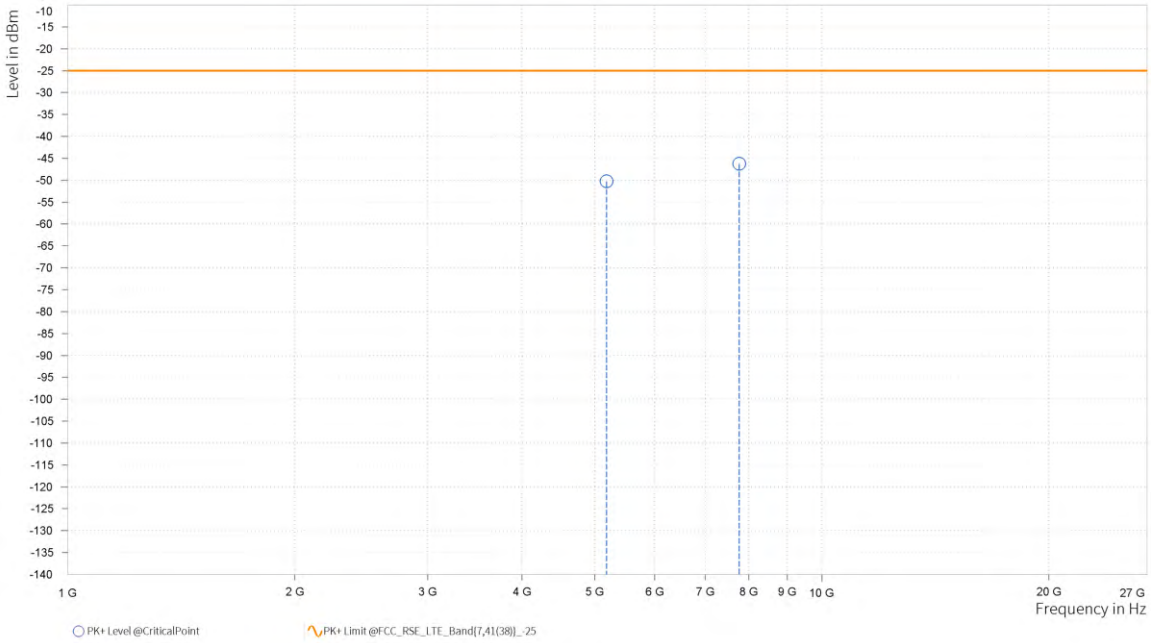
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 5,181.500 | -49.59 | -25.0 | 24.59 | 23.35 | H | 97.5 | 2.0 |
| 5 | 7,772.250 | -46.24 | -25.0 | 21.24 | 27.25 | H | 89.0 | 2.0 |



| MODE | TX channel 40620 | 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 | 5,181.500 | -50.27 | -25.0 | 25.27 | 23.81 | V | 359.0 | 2.0 |
| 5 | 7,772.250 | -46.27 | -25.0 | 21.27 | 27.03 | V | 89.7 | 2.0 |

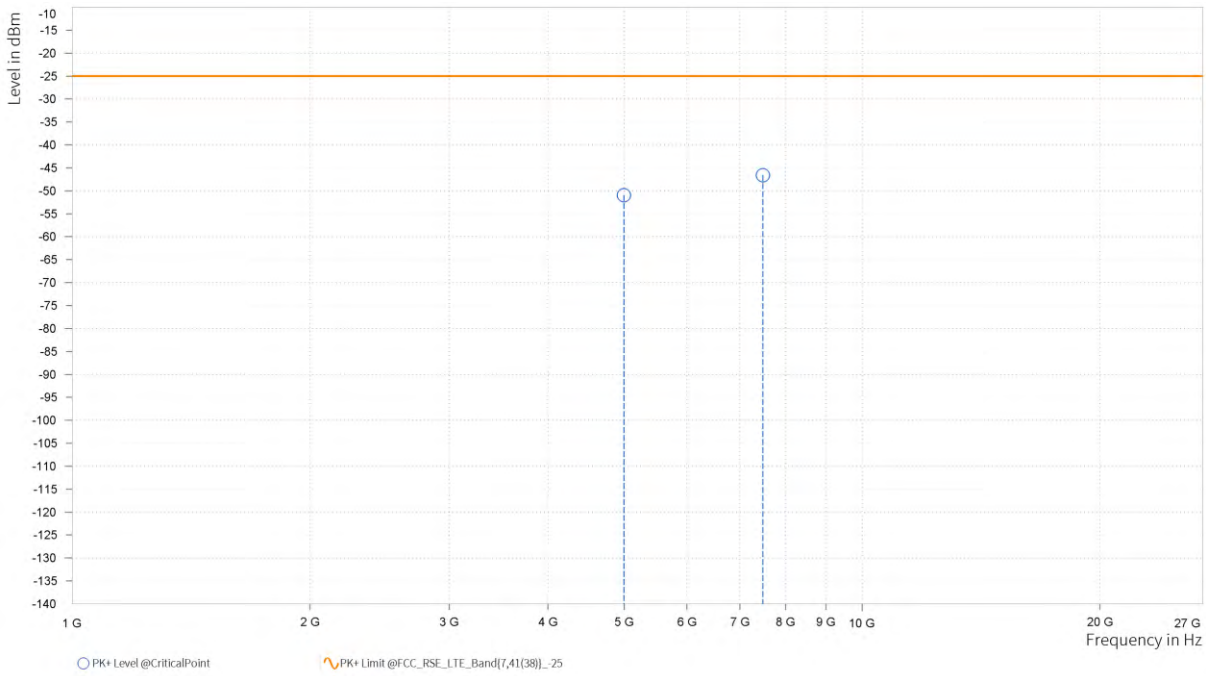


**CHANNEL BANDWIDTH: 10MHz / QPSK**
**CH39700**

| | | | |
|---|---|---|---|
| **MODE** | TX channel 39700 | **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**

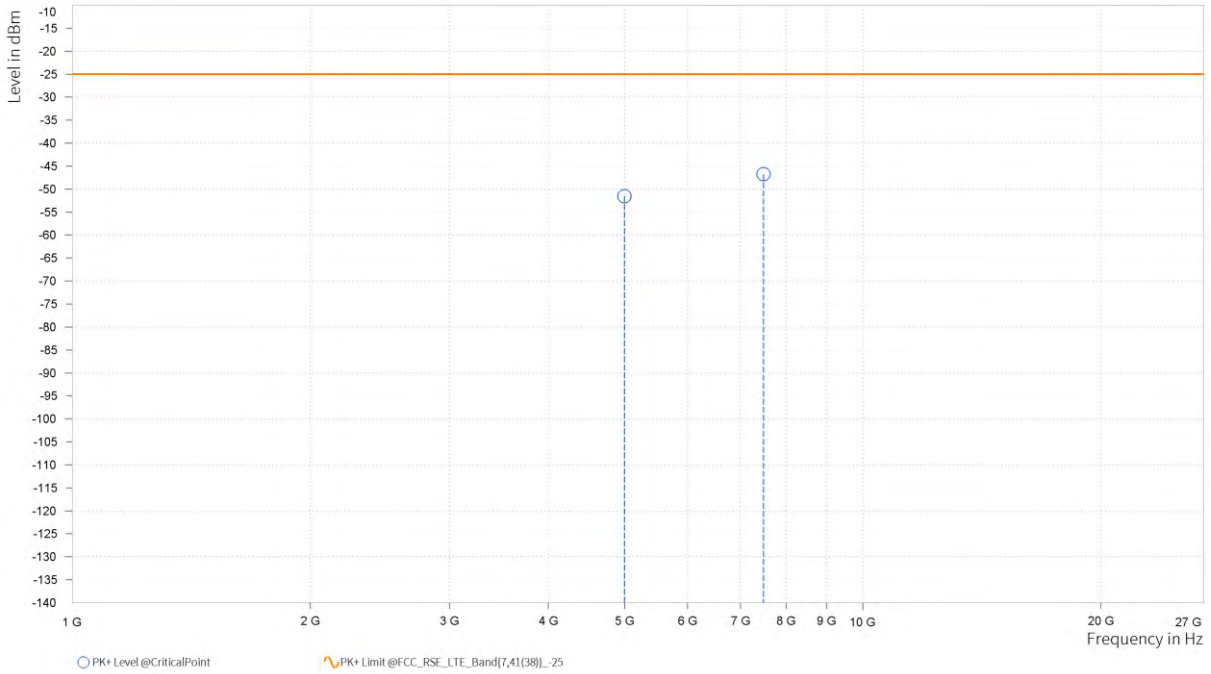
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 4,993.000 | -50.93 | -25.0 | 25.93 | 23.35 | H | 275.1 | 1.0 |
| 5 | 7,489.500 | -46.57 | -25.0 | 21.57 | 27.02 | H | 359.1 | 1.0 |



| MODE | TX channel 39700 | 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**

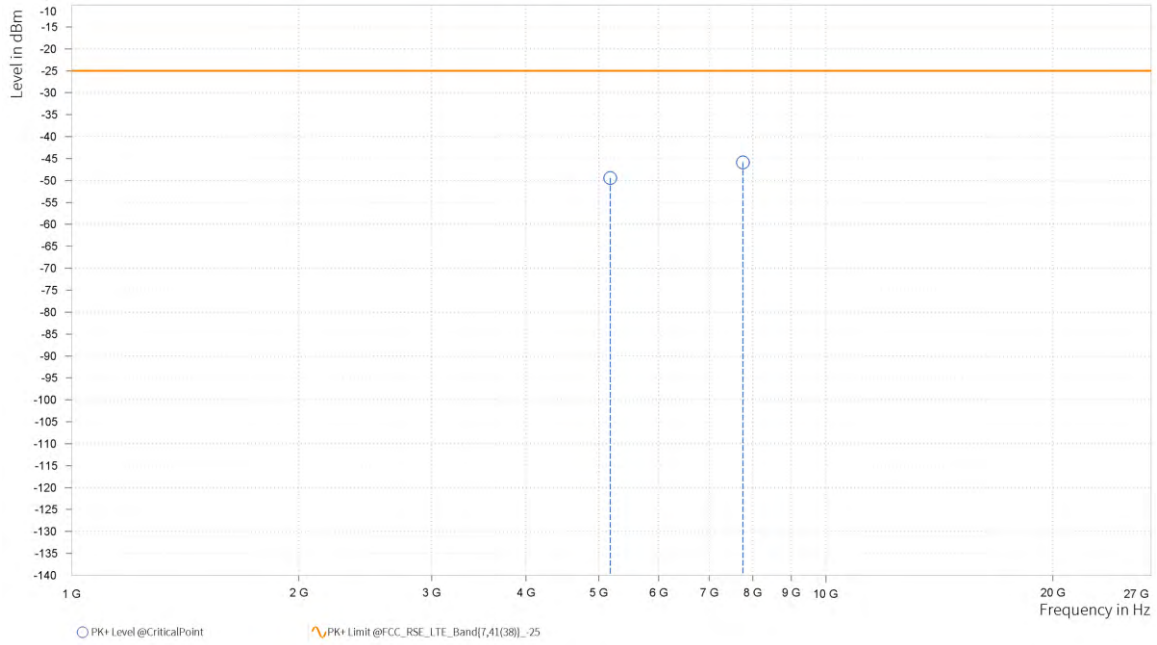
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 4,993.000 | -51.52 | -25.0 | 26.52 | 23.59 | V | 94.6 | 2.0 |
| 5 | 7,489.500 | -46.76 | -25.0 | 21.76 | 27.0 | V | 1.0 | 2.0 |



**CH40620**

| | | | |
|---|---|---|---|
| **MODE** | TX channel 40620 | **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** | | | |

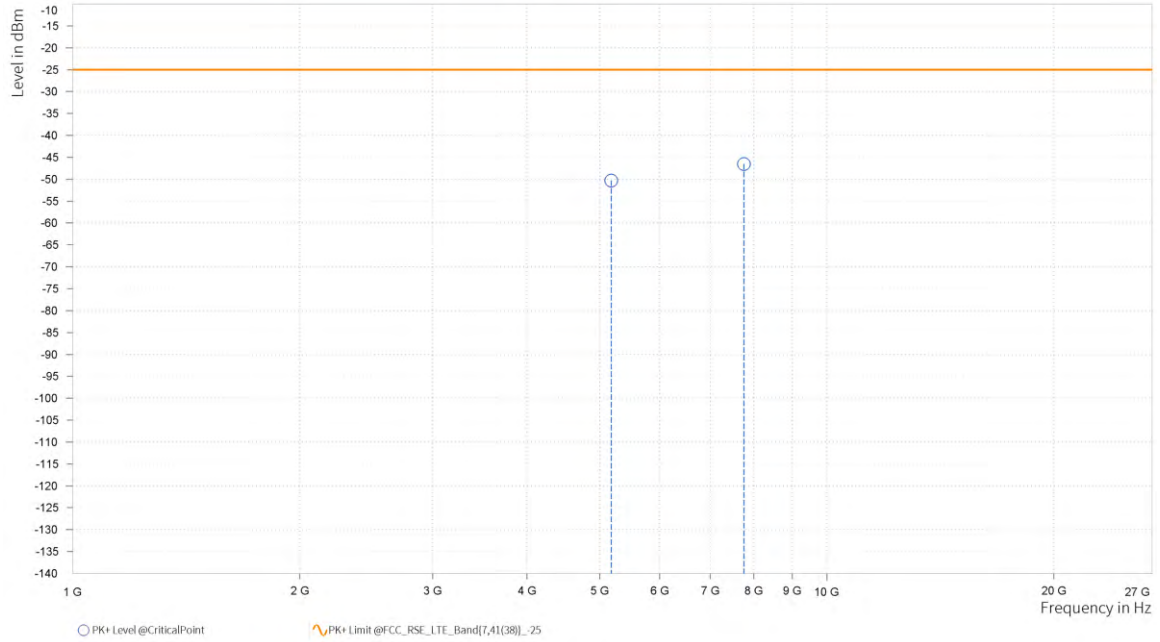
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 5,177.000 | -49.41 | -25.0 | 24.41 | 23.32 | H | 322.6 | 1.0 |
| 5 | 7,765.500 | -45.86 | -25.0 | 20.86 | 27.26 | H | 138.5 | 2.0 |



| MODE | TX channel 40620 | 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 | 5,177.000 | -50.28 | -25.0 | 25.28 | 23.75 | V | 38.0 | 2.0 |
| 5 | 7,765.500 | -46.53 | -25.0 | 21.53 | 27.02 | V | 208.6 | 1.0 |

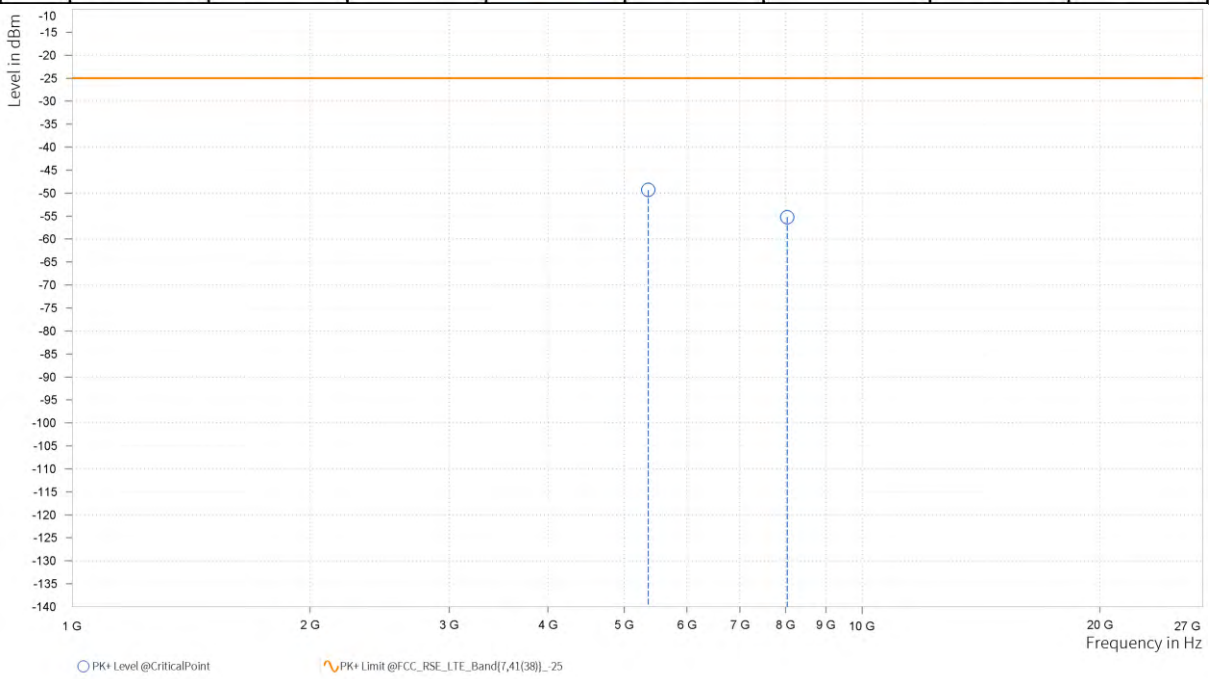


**CH41540**

| MODE | TX channel 41540 | 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**

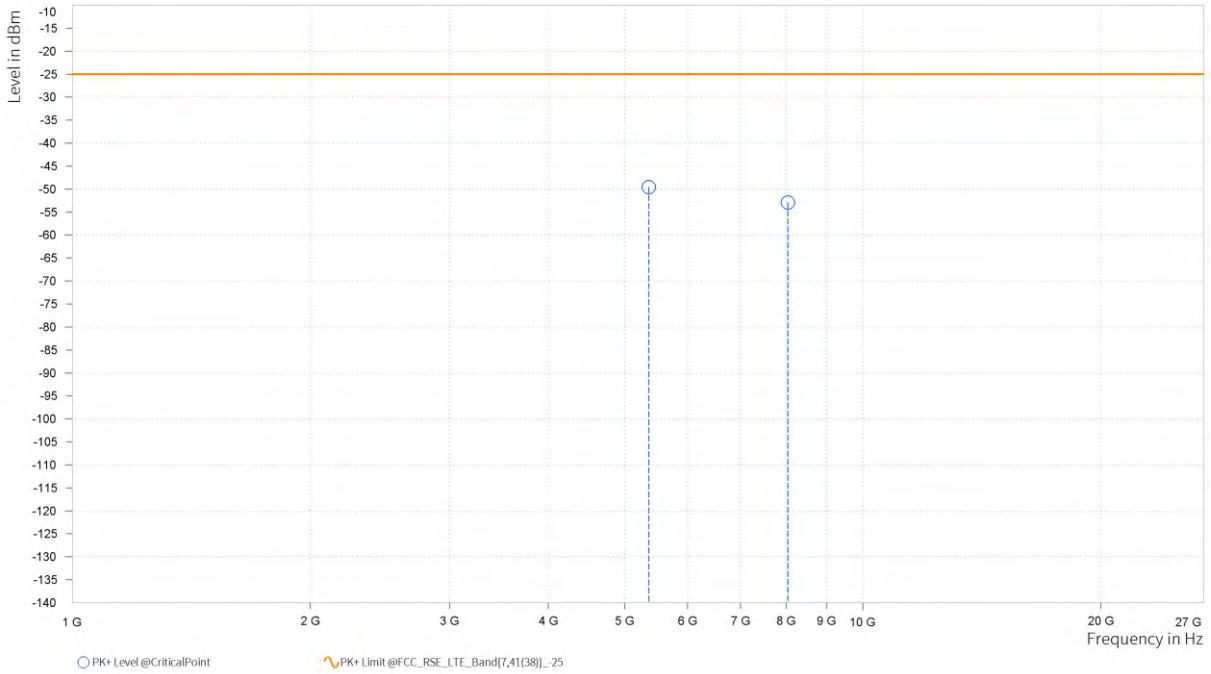
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 5,361.000 | -49.31 | -25.0 | 24.31 | 23.8 | H | 334.6 | 1.0 |
| 6 | 8,041.500 | -55.22 | -25.0 | 30.22 | 15.47 | H | 63.6 | 2.0 |



| MODE | TX channel 41540 | 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**

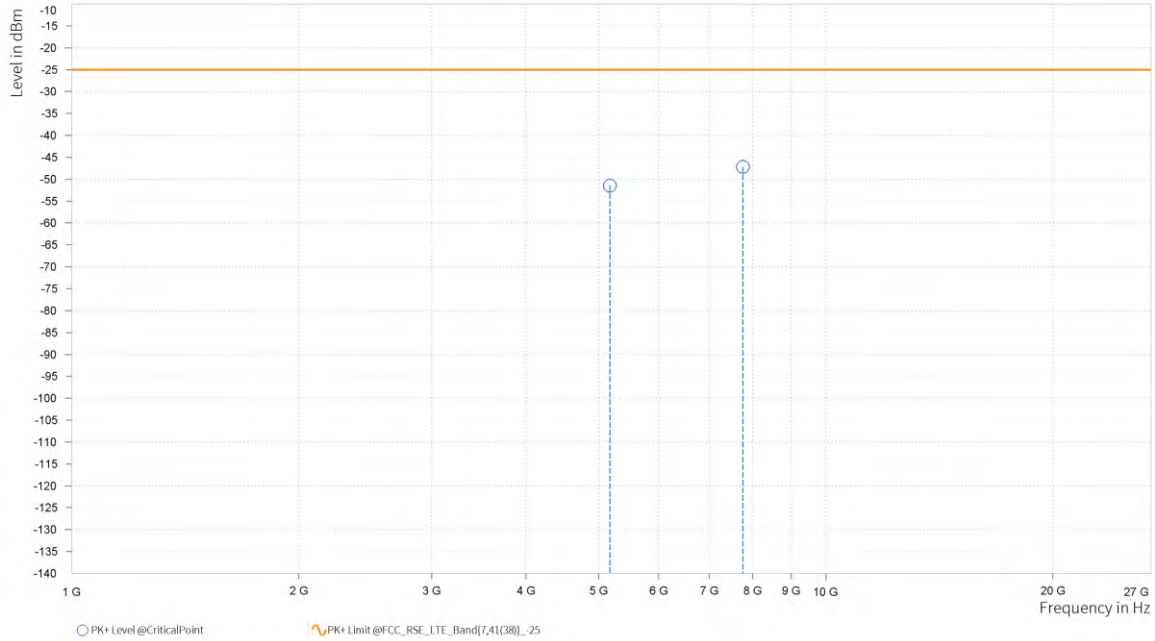
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 5,361.000 | -49.55 | -25.0 | 24.55 | 24.25 | V | 157.6 | 2.0 |
| 6 | 8,041.500 | -52.91 | -25.0 | 27.91 | 15.32 | V | 13.9 | 2.0 |



**CHANNEL BANDWIDTH: 15MHz / QPSK**

| | | | |
|---|---|---|---|
| **MODE** | TX channel 40620 | **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** | | | |

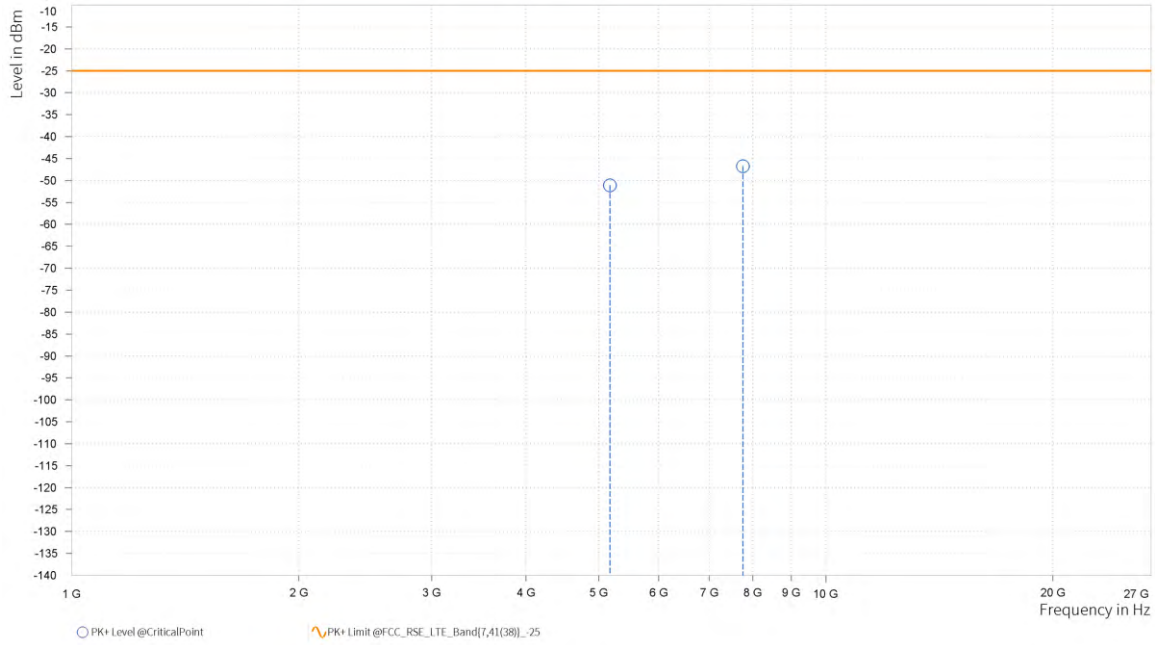
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 5,172.500 | -51.46 | -25.0 | 26.46 | 23.3 | H | 99.7 | 1.0 |
| 5 | 7,758.750 | -47.18 | -25.0 | 22.18 | 27.26 | H | 83.4 | 2.0 |



| MODE | TX channel 40620 | 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 | 5,172.500 | -51.1 | -25.0 | 26.1 | 23.69 | V | 359.0 | 1.0 |
| 5 | 7,758.750 | -46.74 | -25.0 | 21.74 | 27.01 | V | 88.2 | 2.0 |

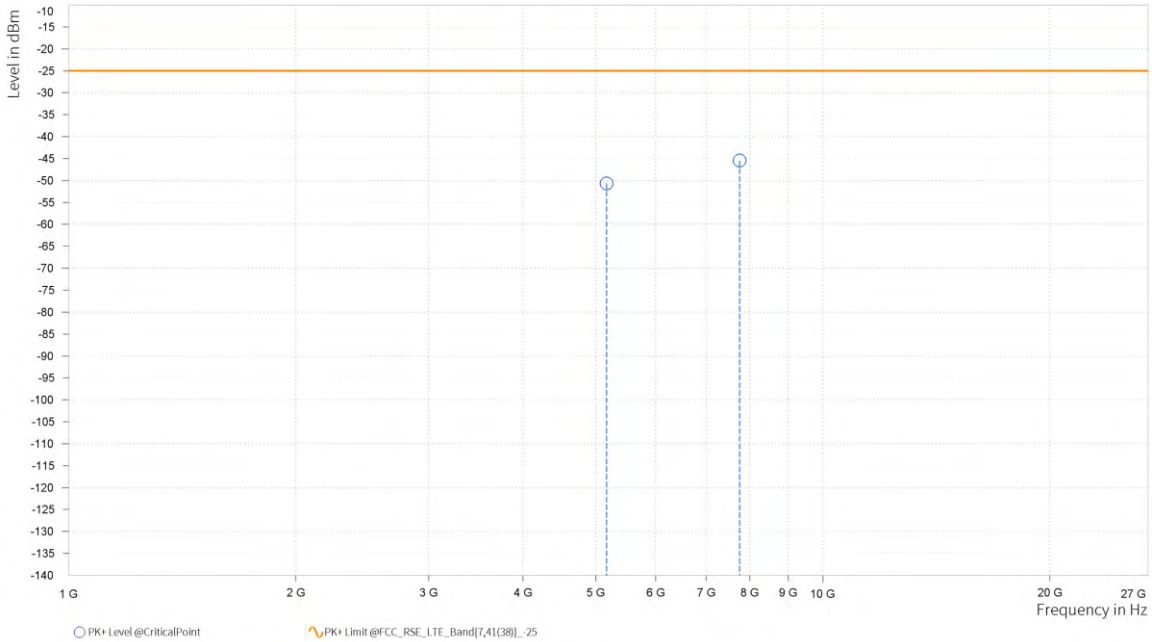


**CHANNEL BANDWIDTH: 20MHz / QPSK**

| | | | |
|---|---|---|---|
| **MODE** | TX channel 40620 | **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**

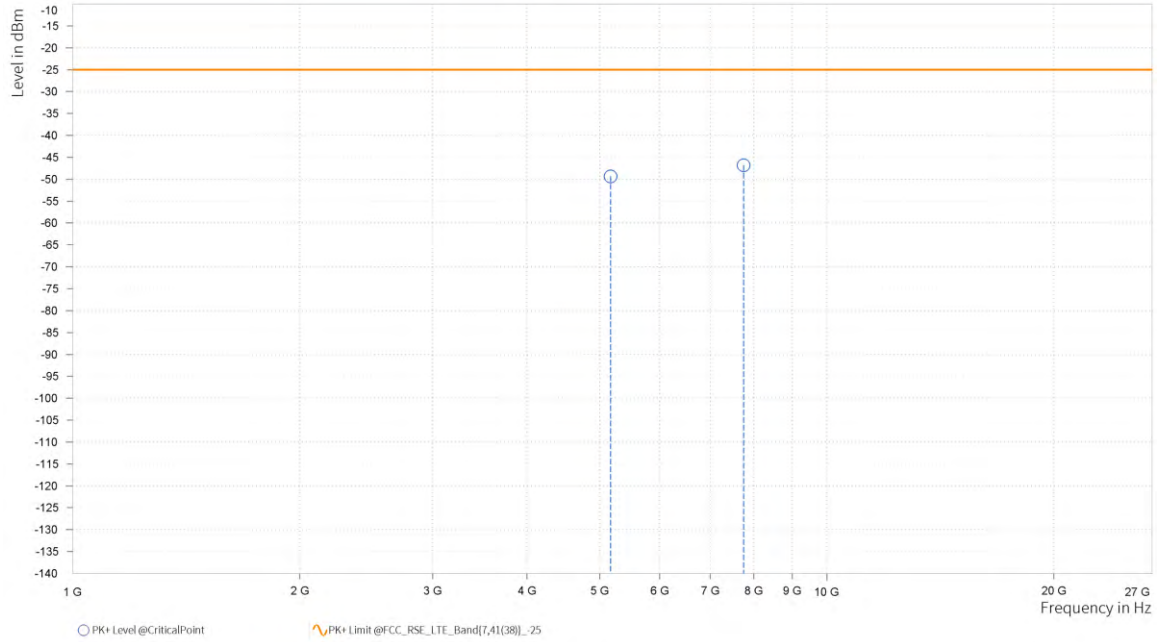
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 5,168.000 | -50.64 | -25.0 | 25.64 | 23.28 | H | 80.5 | 2.0 |
| 5 | 7,752.000 | -45.45 | -25.0 | 20.45 | 27.27 | H | 7.0 | 2.0 |



| MODE | TX channel 40620 | 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 | 5,168.000 | -49.34 | -25.0 | 24.34 | 23.63 | V | 359.1 | 1.0 |
| 5 | 7,752.000 | -46.82 | -25.0 | 21.82 | 27.01 | V | 271.0 | 1.0 |



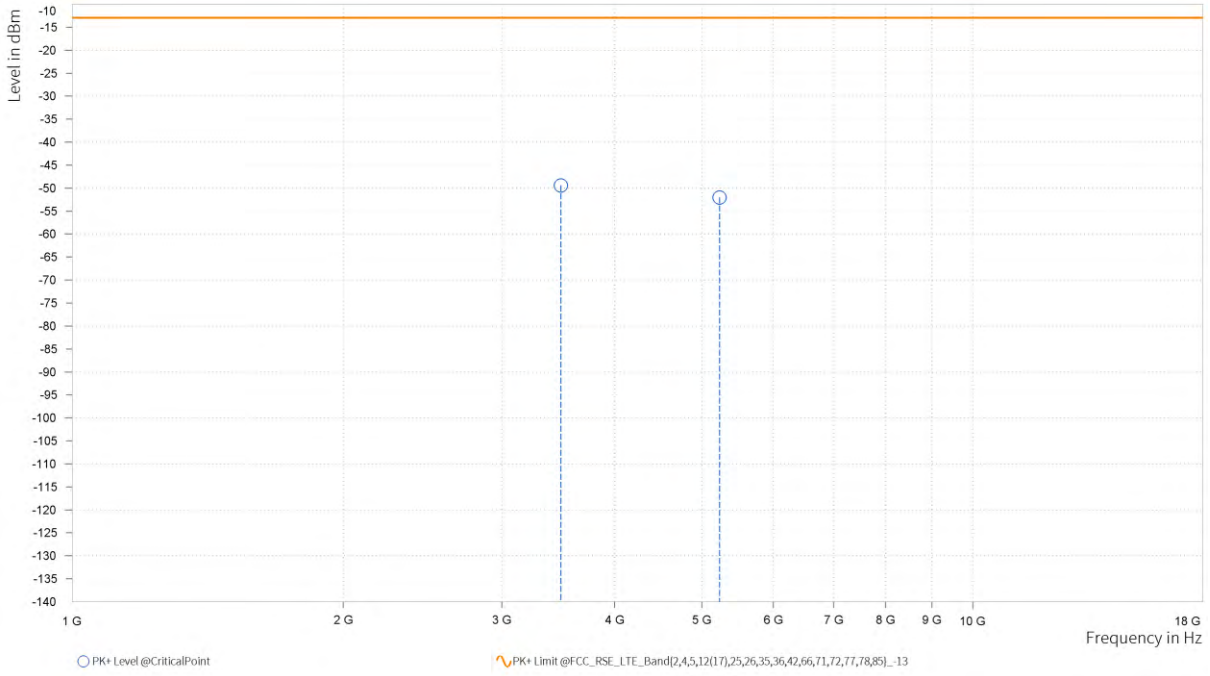
**LTE B66**

**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**

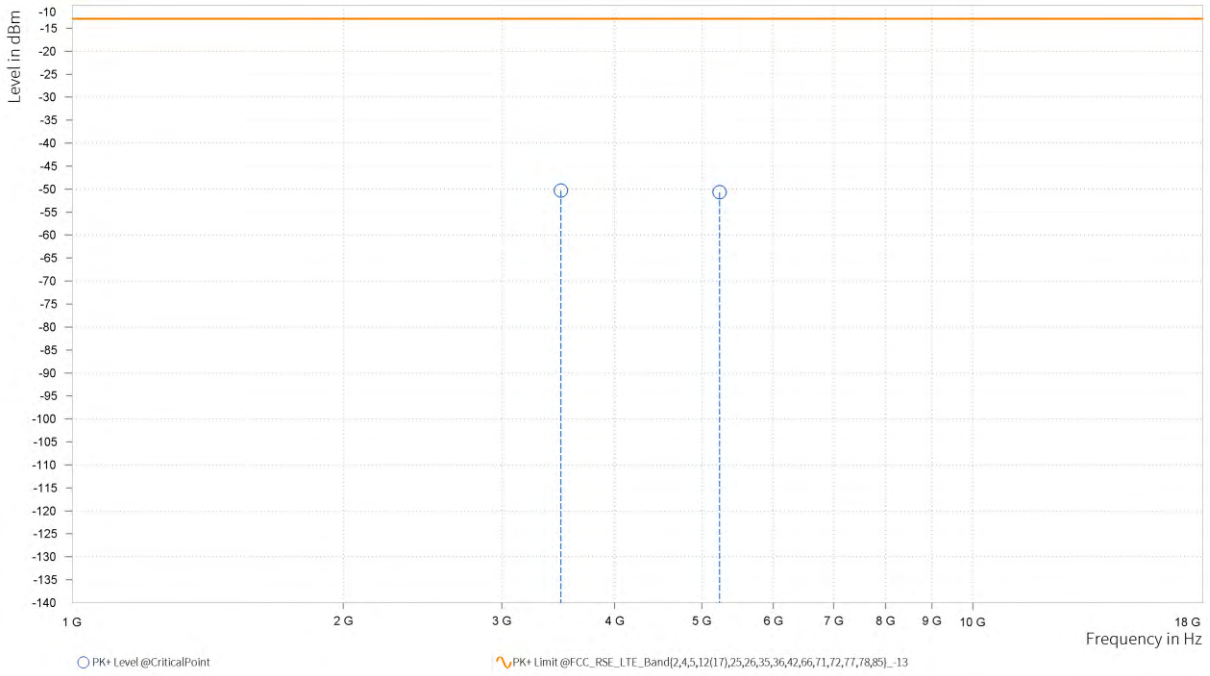
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,488.740 | -49.42 | -13.0 | 36.42 | 20.51 | H | 111 | 1.0 |
| 4 | 5,233.110 | -52.05 | -13.0 | 39.05 | 23.57 | H | 79 | 2.0 |



| 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 | -50.32 | -13.0 | 37.32 | 21.3 | V | 359.0 | 1.0 |
| 4 | 5,233.110 | -50.7 | -13.0 | 37.7 | 24.1 | V | 100.4 | 1.0 |

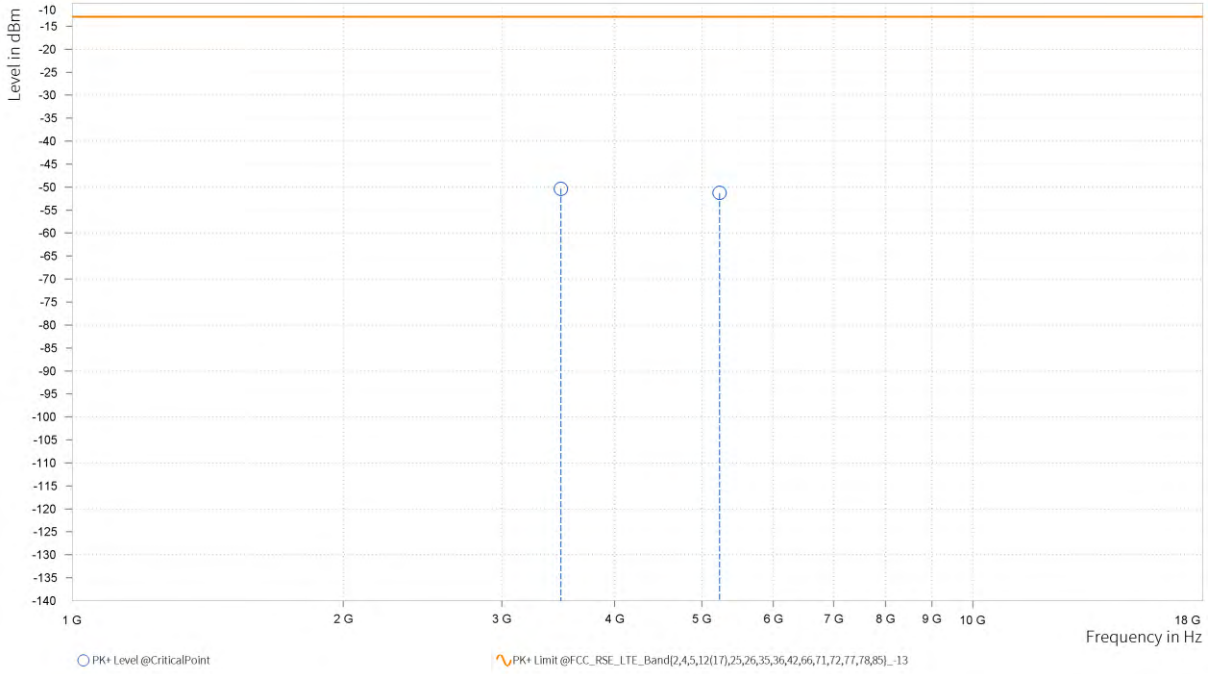


**CHANNEL BANDWIDTH: 3MHz / QPSK**

| | | | |
|---|---|---|---|
| **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**

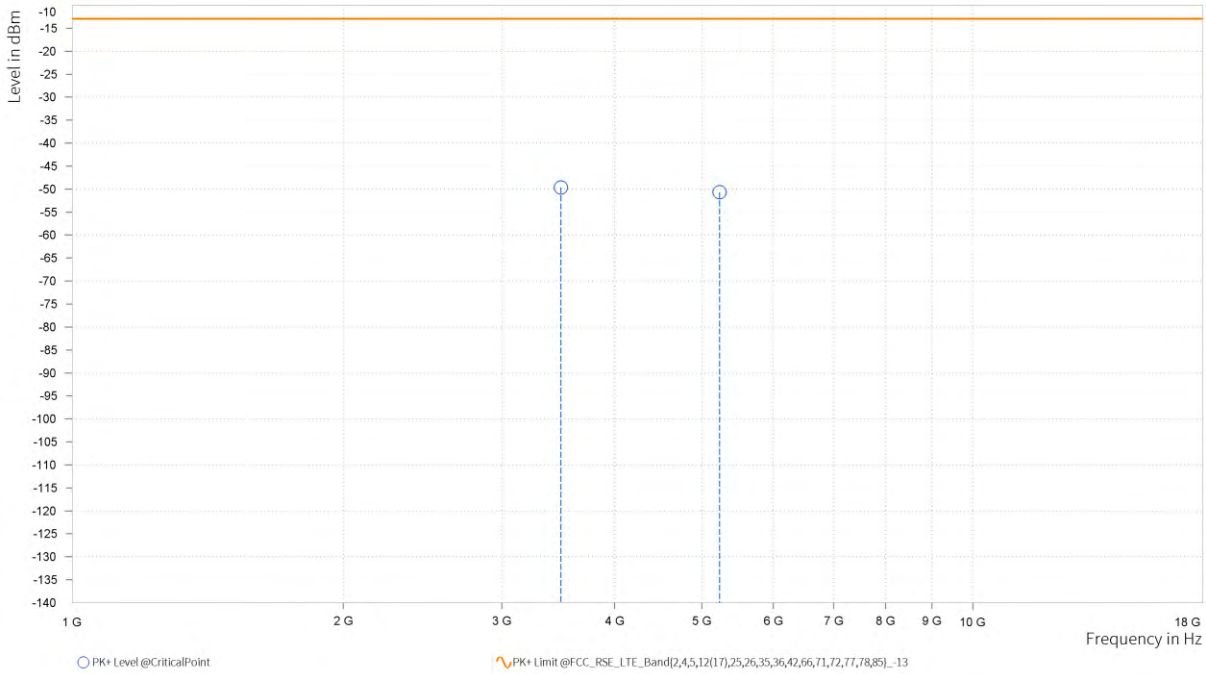
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,487.300 | -50.36 | -13.0 | 37.36 | 20.5 | H | 359 | 2.0 |
| 4 | 5,230.950 | -51.26 | -13.0 | 38.26 | 23.56 | H | 1 | 1.0 |



| 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 | -49.64 | -13.0 | 36.64 | 21.29 | V | 359.0 | 2.0 |
| 4 | 5,230.950 | -50.68 | -13.0 | 37.68 | 24.09 | V | 212.9 | 1.0 |

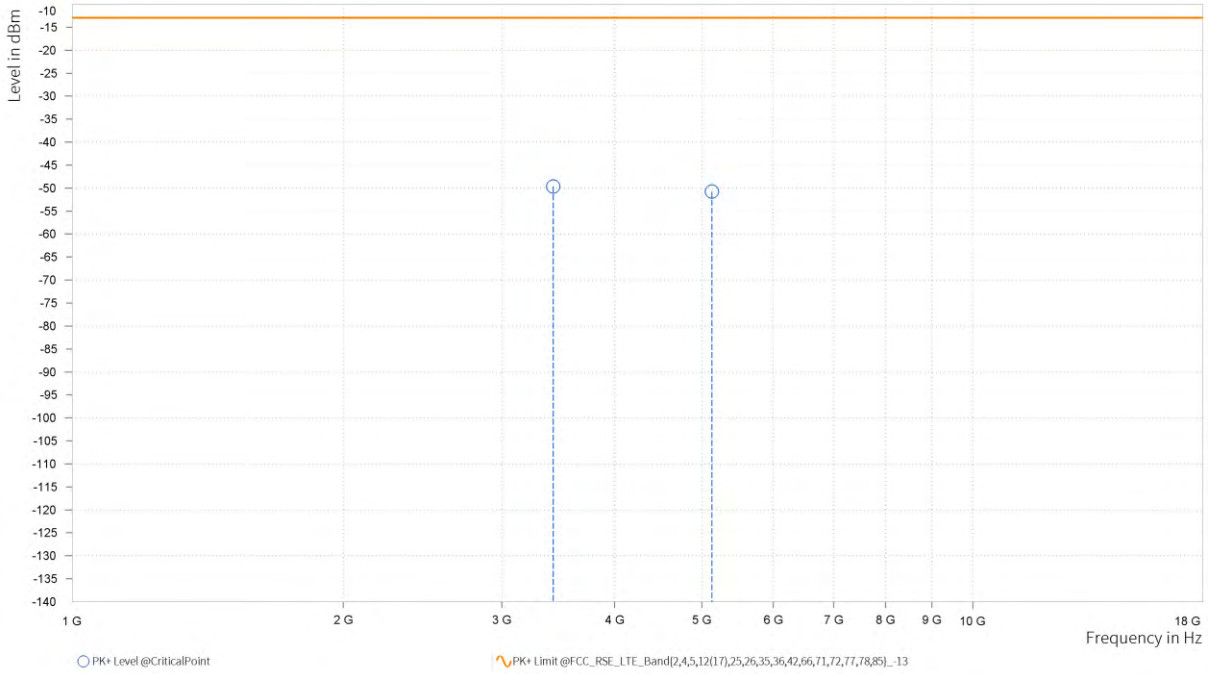


**CHANNEL BANDWIDTH: 5MHz / QPSK**

**CH131997**

| | | | |
|---|---|---|---|
| **MODE** | TX channel 131997 | **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** | | | |

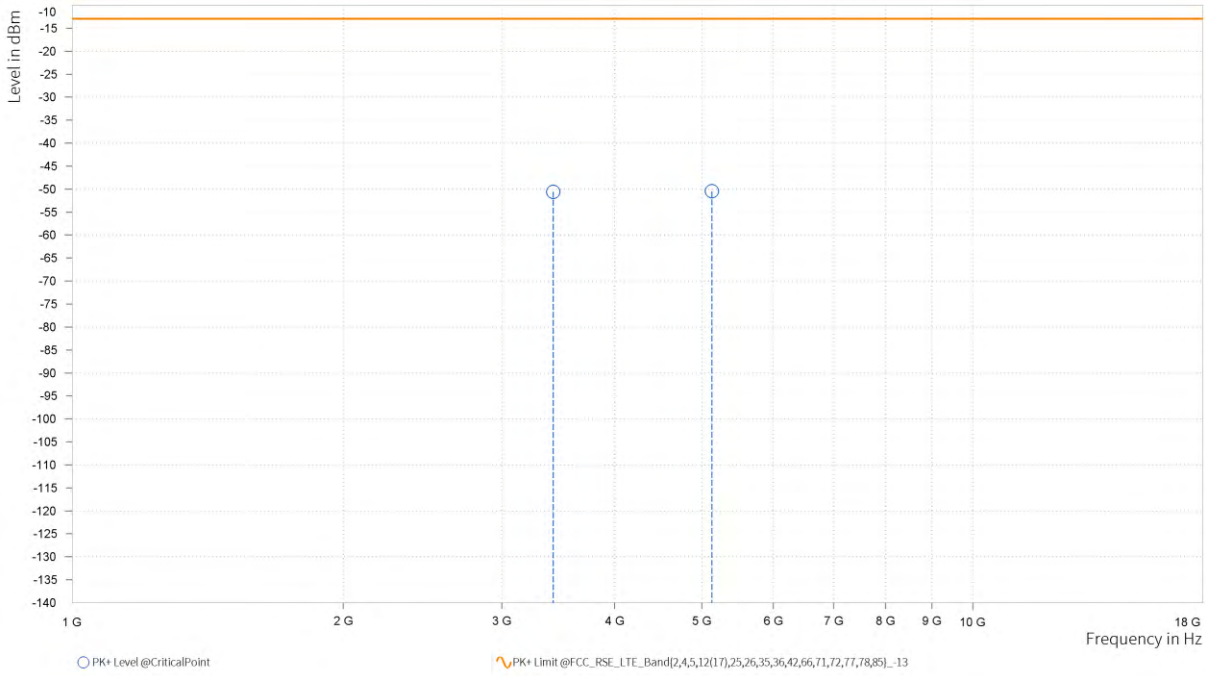
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,420.500 | -49.64 | -13.0 | 36.64 | 20.66 | H | 132.2 | 2.0 |
| 4 | 5,130.750 | -50.76 | -13.0 | 37.76 | 23.07 | H | 359.1 | 1.0 |



| MODE | TX channel 131997 | 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 | 3,420.500 | -50.58 | -13.0 | 37.58 | 21.0 | V | 1.9 | 2.0 |
| 4 | 5,130.750 | -50.46 | -13.0 | 37.46 | 23.4 | V | 103.2 | 1.0 |

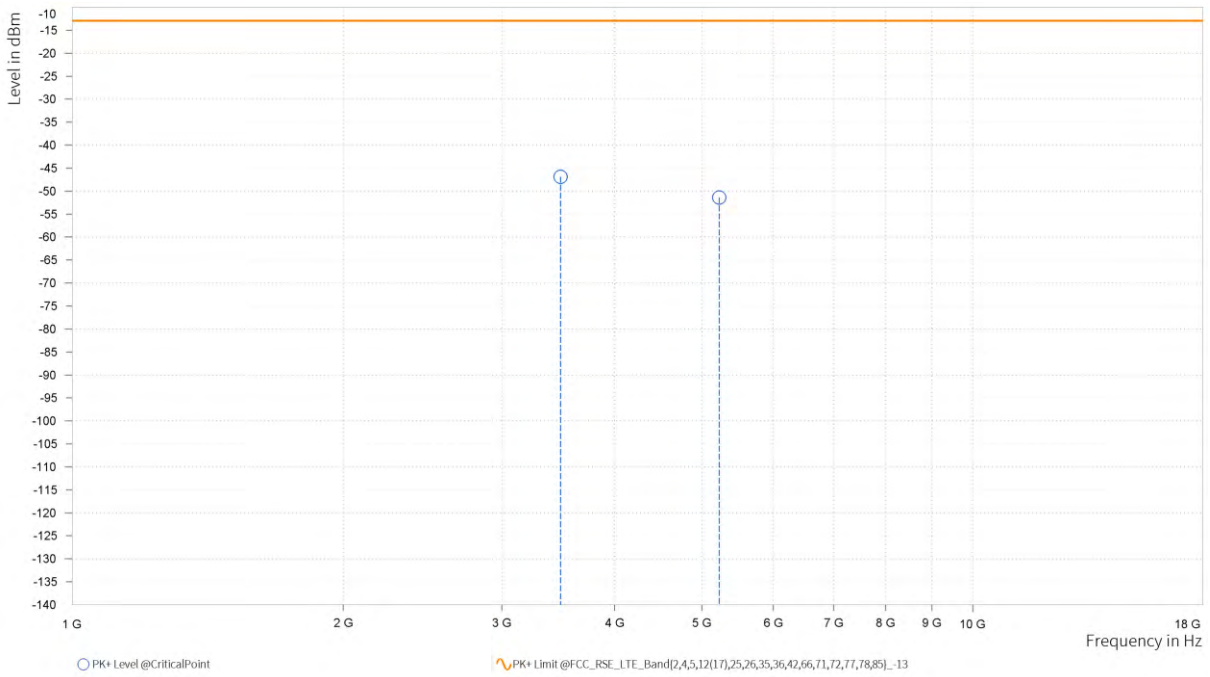


**CH132322**

| 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**

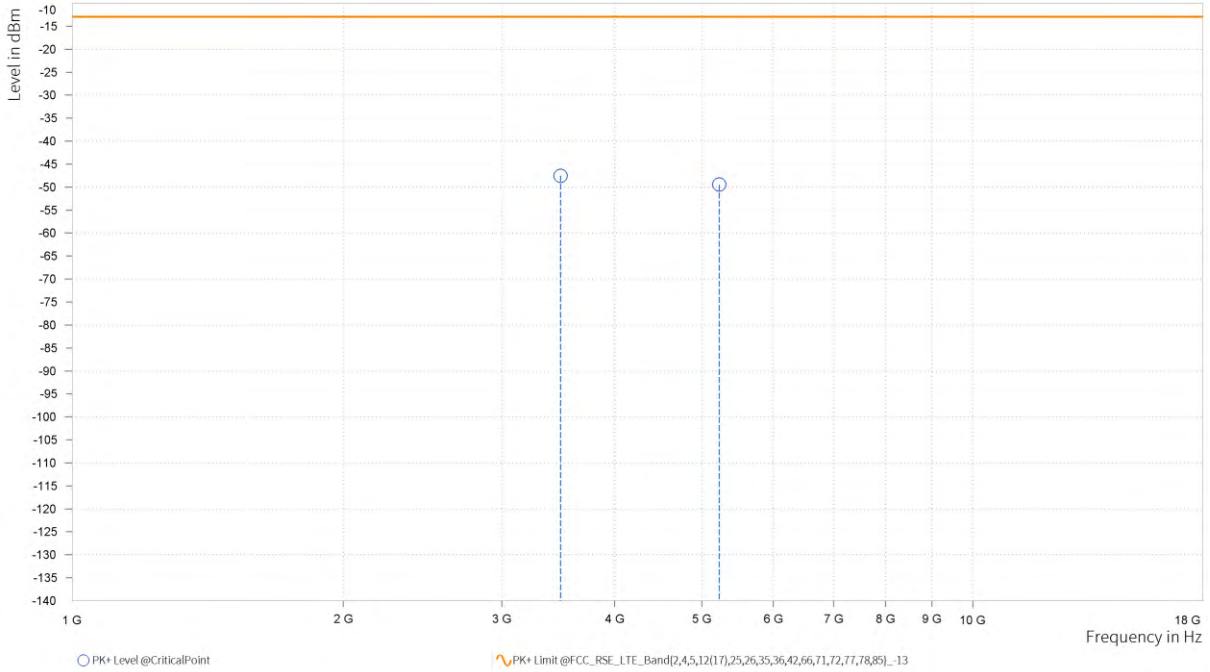
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,485.500 | -46.88 | -13.0 | 33.88 | 20.49 | H | 182.5 | 2.0 |
| 4 | 5,228.250 | -51.39 | -13.0 | 38.39 | 23.55 | H | 1.0 | 2.0 |



| 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 | -47.52 | -13.0 | 34.52 | 21.27 | V | 146.4 | 2.0 |
| 4 | 5,228.250 | -49.45 | -13.0 | 36.45 | 24.09 | V | 7.5 | 2.0 |

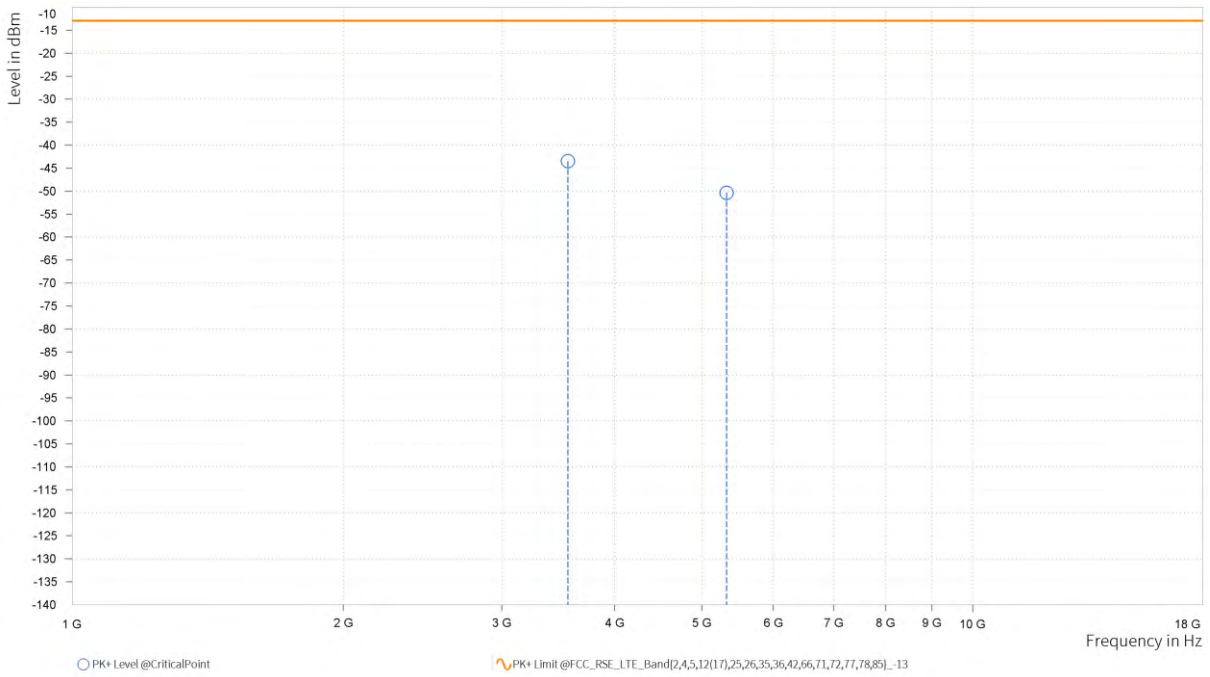


**CH132647**

| MODE | TX channel 132647 | 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**

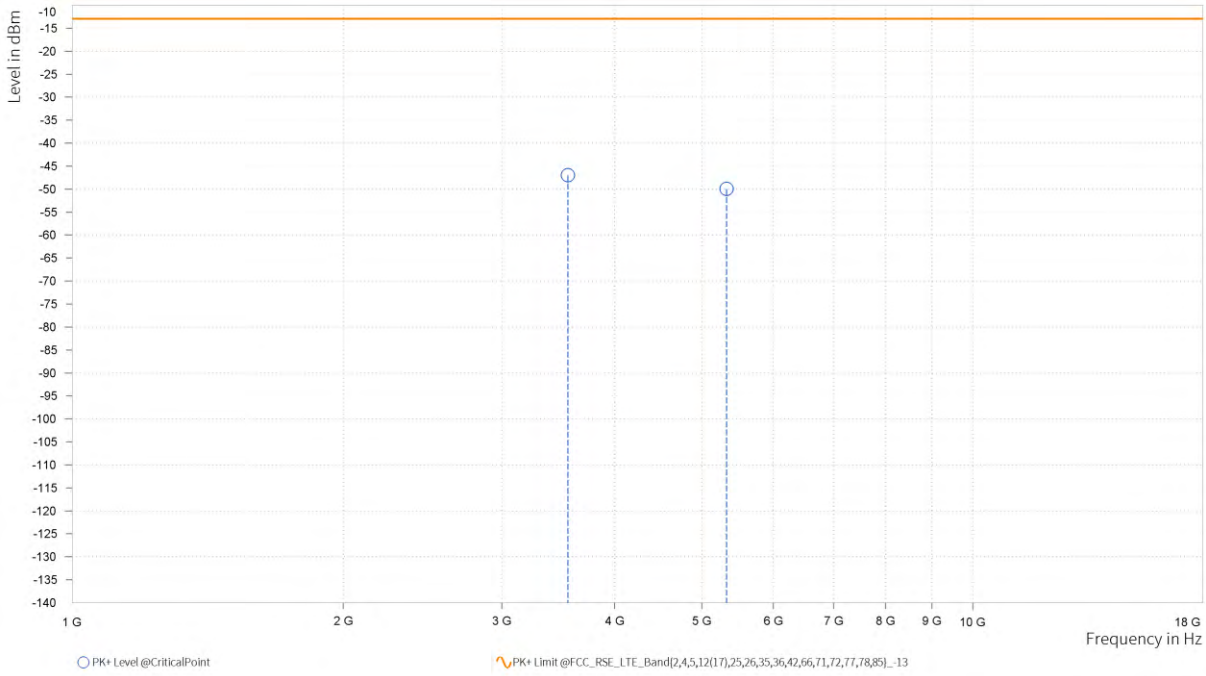
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,550.500 | -43.48 | -13.0 | 30.48 | 20.62 | H | 358.8 | 1.0 |
| 4 | 5,325.750 | -50.37 | -13.0 | 37.37 | 23.67 | H | 358.8 | 1.0 |



| MODE | TX channel 132647 | 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 | 3,551.000 | -47.0 | -13.0 | 34.0 | 21.16 | V | 0.9 | 2.0 |
| 4 | 5,325.750 | -49.98 | -13.0 | 36.98 | 24.17 | V | 142.2 | 1.0 |

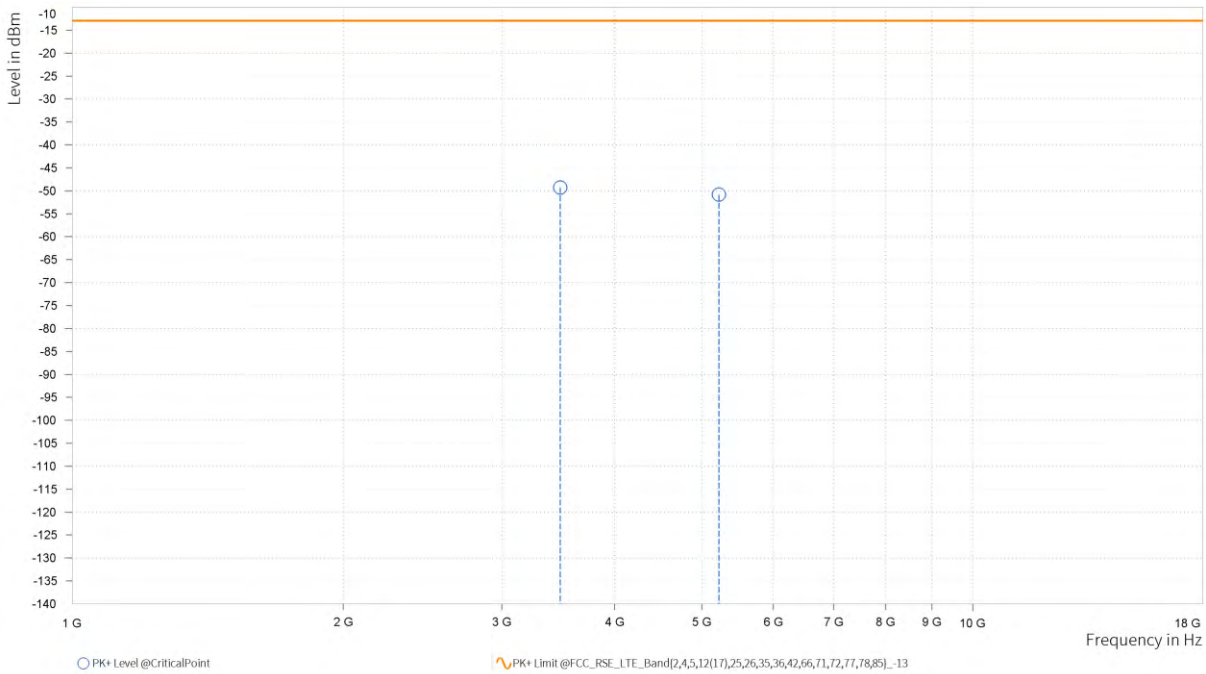


**CHANNEL BANDWIDTH: 10MHz / QPSK**

| | | | |
|---|---|---|---|
| **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**

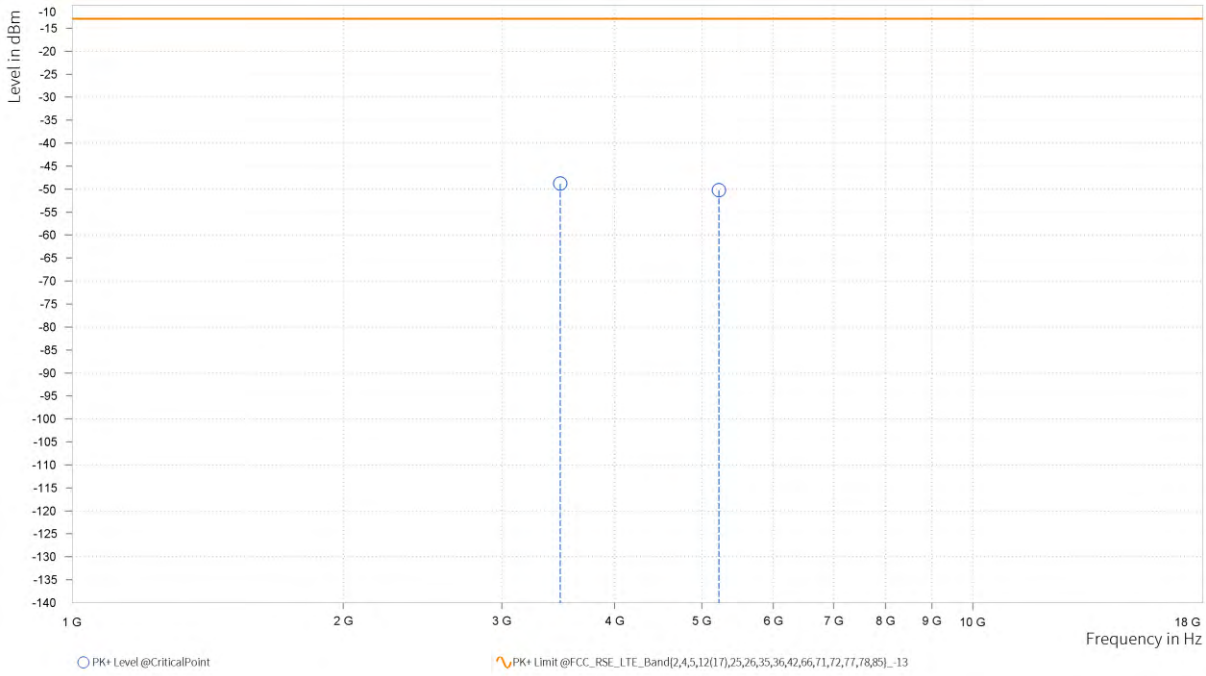
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,481.000 | -49.28 | -13.0 | 36.28 | 20.47 | H | 359.0 | 1.0 |
| 4 | 5,221.500 | -50.84 | -13.0 | 37.84 | 23.52 | H | 0.9 | 2.0 |



| 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**

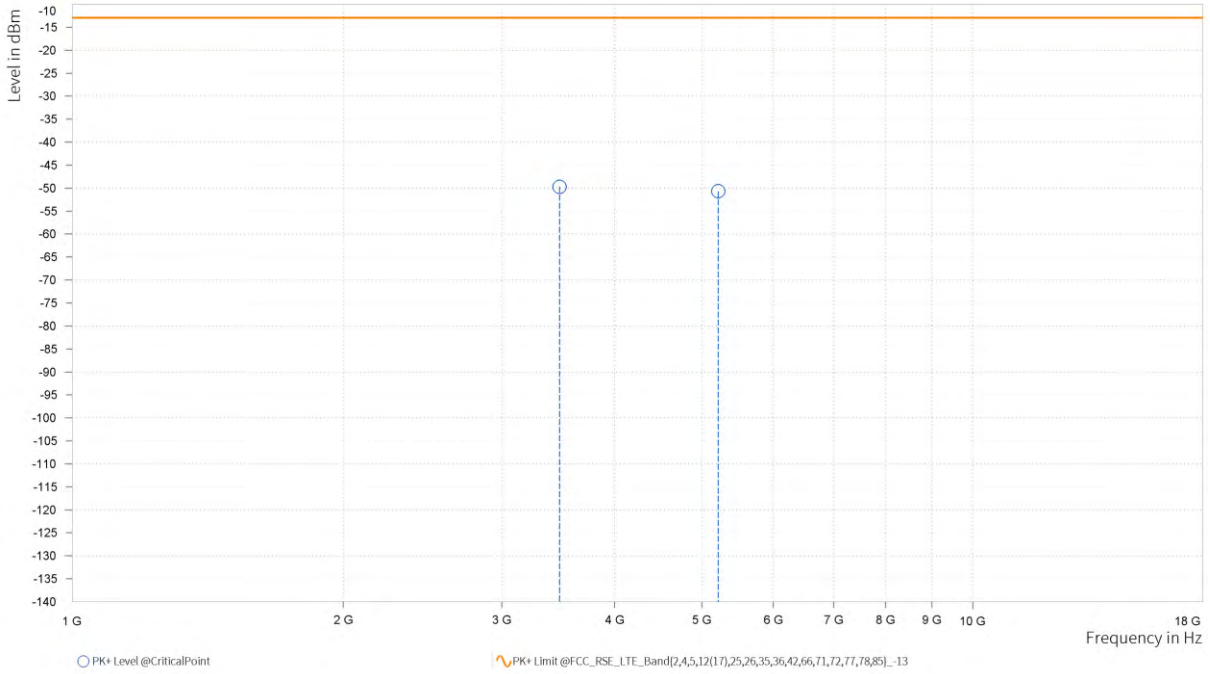
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,481.000 | -48.81 | -13.0 | 35.81 | 21.23 | V | 359.0 | 2.0 |
| 4 | 5,221.500 | -50.25 | -13.0 | 37.25 | 24.08 | V | 233.4 | 1.0 |



**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** | | | |

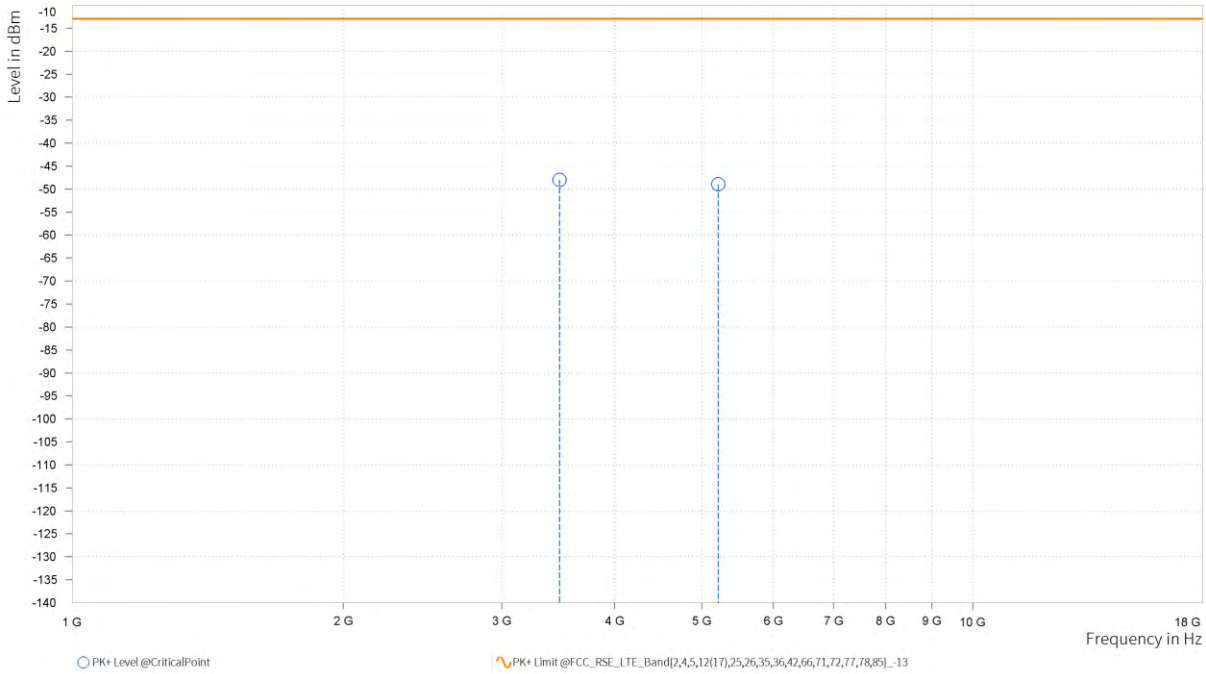
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,476.500 | -49.7 | -13.0 | 36.7 | 20.45 | H | 357.7 | 1.0 |
| 4 | 5,214.750 | -50.69 | -13.0 | 37.69 | 23.5 | H | 359.0 | 1.0 |



| 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 | 3,476.000 | -47.98 | -13.0 | 34.98 | 21.19 | V | 359 | 2.0 |
| 4 | 5,214.750 | -48.93 | -13.0 | 35.93 | 24.08 | V | 70 | 2.0 |

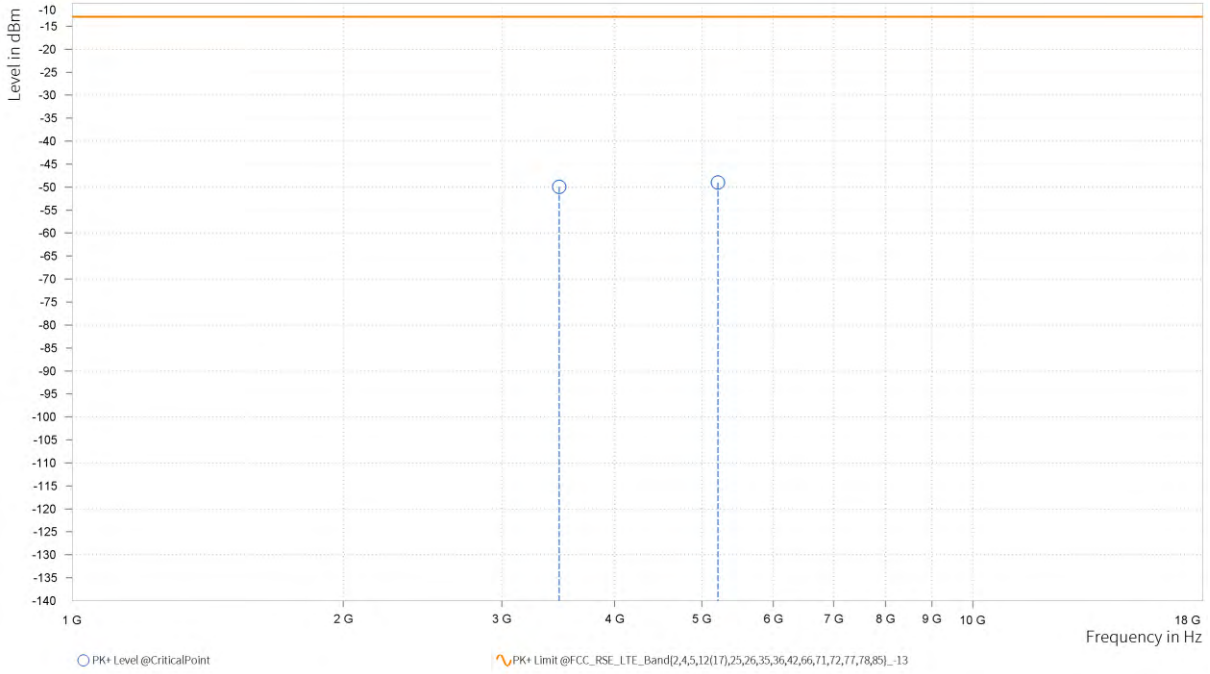


**CHANNEL BANDWIDTH: 20MHz / QPSK**

| | | | |
|---|---|---|---|
| **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**

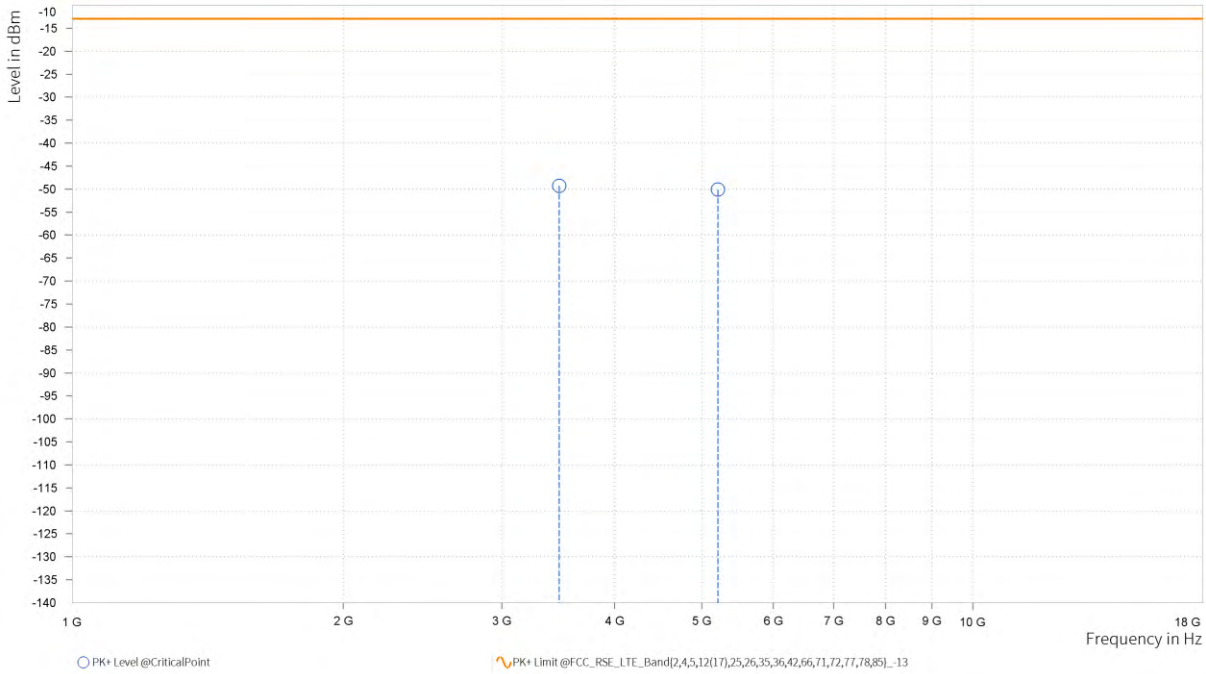
| Rg | Frequency [MHz] | PK+ Level [dBm] | PK+ Limit [dBm] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|---|---|---|---|---|---|---|---|---|
| 4 | 3,472.000 | -49.93 | -13.0 | 36.93 | 20.43 | H | 359 | 1.0 |
| 4 | 5,208.000 | -49.02 | -13.0 | 36.02 | 23.47 | H | 256 | 2.0 |



| 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 | -49.28 | -13.0 | 36.28 | 21.15 | V | 0.9 | 2.0 |
| 4 | 5,208.000 | -50.09 | -13.0 | 37.09 | 24.07 | V | 290.8 | 1.0 |

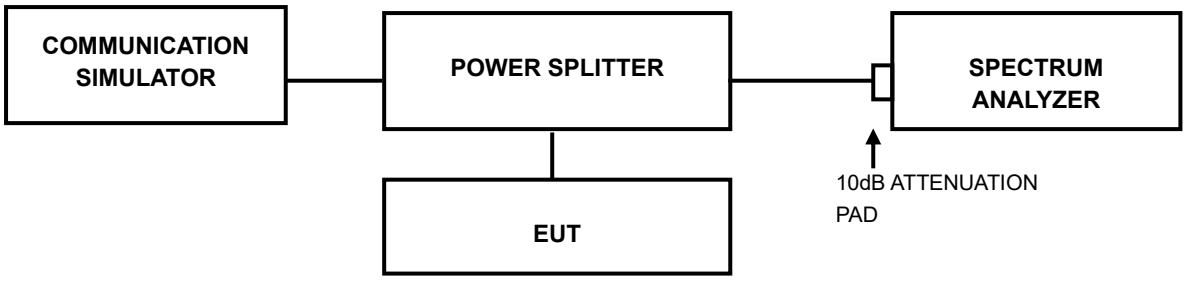


## 3.7 PEAK TO AVERAGE RATIO

### 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.

Huarui 7Layers High Technology (Suzhou) Co., Ltd.
Lab Address:
Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province
Accredited Test Lab Cert 6613.01

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.