# FCC PART 22/24/27 TEST REPORT

**FCC Part 22H/Part 24E/Part 27/Part 90**

| | |
|---|---|
| **Report Reference No. ..... :** | **LCS210827069AEA** |
| **FCC ID. ..... :** | **2ALPX-PRIME7-4GQA** |
| **Date of Issue..... :** | **October 15, 2021** |
| **Testing Laboratory Name** ..... : | **Shenzhen LCS Compliance Testing Laboratory Ltd.** |
| Address ..... : | 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Shajing Street, Baoan District, Shenzhen, China |
| **Applicant's name ..... :** | **Advanced Electronic Solutions Global Ltd.** |
| Address ..... : | Unit 4C, Kilcronagh Business Park Cookstown County Tyrone United Kingdom |
| **Test specification**..... **:** | |
| Standard ..... : | **FCC CFR Title 47 Part 2, Part 22H, Part 24E, Part 27, Part 90 TIA-603-E: 2016 KDB971168 D01 Power Meas License Digital Systems v03r01** |
| Test Report Form No ..... : | LCSEMC-1.0 |
| TRF Originator ..... : | Shenzhen LCS Compliance Testing Laboratory Ltd. |
| Master TRF ..... : | Dated 2011-03 |



| | |
|---|---|
| **Test item description..... :** | **CellCOM Prime 7 4G** |
| Trade Mark..... : | AES |
| Test Model ..... : | PRIME7-PX-IMPK-PED/4GA |
| Modulation Type ..... : | QPSK, 16QAM |
| Rating..... : | For Adapter Model: GEO451DA-240200<br>Adapter Input: 100-240V~, 50/60Hz, 1.2A<br>Adapter Output: 24V⎓2A |
| Hardware version..... : | 4GDOORPV16 |
| Software version ..... : | Cellcom Prime V2.1.2 |
| Result..... : | **PASS** |

| **Compiled by:** | **Supervised by:** | **Approved by:** |
|---|---|---|
| Vera Deng | Jin Wang | Gavin Liang |
| Vera Deng/ Administrators | Jin Wang/ Technique principal | Gavin Liang/ Manager |

# TEST REPORT

| Test Report No. : | LCS210827069AEA | October 15, 2021<br>Date of issue |
|---|---|---|

| | | |
|---|---|---|
| Equipment under Test | : | CellCOM Prime 7 4G |
| Test Model | : | PRIME7-PX-IMPK-PED/4GA |
| **Applicant** | : | **Advanced Electronic Solutions Global Ltd.** |
| Address | : | Unit 4C, Kilcronagh Business Park Cookstown County Tyrone United Kingdom |
| **Manufacturer** | : | **Advanced Electronic Solutions Global Ltd.** |
| Address | : | Unit 4C, Kilcronagh Business Park Cookstown County Tyrone United Kingdom |
| **Factory** | : | **Advanced Electronic Solutions Global Ltd.** |
| Address | : | Unit 4C, Kilcronagh Business Park Cookstown County Tyrone United Kingdom |

| **Test Result**: | **PASS** |
|---|---|

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

# Revison History

| Revision | Issue Date | Revisions | Revised By |
|---|---|---|---|
| 000 | October 15, 2021 | Initial Issue | Gavin Liang |
| | | | |
| | | | |

# Contents

# 1 TEST STANDARDS

The tests were performed according to following standards:
FCC Part 22H: Cellular Radiotelephone Service
FCC Part 24E: Broadband PCS
FCC Part 27: MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES
FCC Part 90: PRIVATE LAND MOBILE RADIO SERVICES
TIA-603-E March 2016: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.
47 CFR FCC Part 15 Subpart B: Unintentional Radiators
FCC Part 2: FREQUENCY ALLOCA-TIONS AND RADIO TREATY MAT-TERS; GENERAL RULES AND REG-ULATIONS
ANSI C63.4:2014: Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
FCC KDB971168 D01 Power Meas License Digital Systems v03r01

# 2 SUMMARY

## 2.1 General Remarks

| | | |
|---|---|---|
| Date of receipt of test sample | : | August 30, 2021 |
| | | |
| Testing commenced on | : | August 30, 2021 ~ October 15, 2021 |
| | | |
| Testing concluded on | : | October 15, 2021 |

## 2.2 Product Description

The **Advanced Electronic Solutions Global Ltd.**'s Model: PRIME7-PX-IMPK-PED/4GA or the "EUT" as referred to in this report; more general information as follows, for more details, refer to the user's manual of the EUT.

| | | |
|---|---|---|
| EUT | : | CellCOM Prime 7 4G |
| Test Model | : | PRIME7-PX-IMPK-PED/4GA |
| Additional Model No. | : | PRIME7-IMP-PED/4GA, PRIME7-PX-IMP-PED/4GA, PRIME7-IMPK-PED/4GA, PRIME7-PX-IMPK-PED/4GA, PRIME7-AB/4GA, PRIME7-PX-AB/4GA, PRIME7-ABK/4GA, PRIME7-PX-ABK/4GA |
| Model declaration | : | PCB board, structure and internal of these model(s) are the same, So no additional models were tested. |
| Power Supply | : | For Adapter Model: GEO451DA-240200<br>Adapter Input: 100-240V~, 50/60Hz, 1.2A<br>Adapter Output: 24V⎓2A |
| Hardware Version | : | 4GDOORPV16 |
| Software Version | : | Cellcom Prime V2.1.2 |
| LTE | : | |
| Support Band | : | ☒E-UTRA Band 2(U.S.-Band)<br>☒E-UTRA Band 4(U.S.-Band)<br>☒E-UTRA Band 5(U.S.-Band)<br>☒E-UTRA Band 12(U.S.-Band)<br>☒E-UTRA Band 13(U.S.-Band)<br>☒E-UTRA Band 14(U.S.-Band)<br>☒E-UTRA Band 66(U.S.-Band)<br>☒E-UTRA Band 71(U.S.-Band) |
| LTE Release Version | : | R11 |
| Type Of Modulation | : | QPSK/16QAM |
| Antenna Description | : | PIFA Antenna;<br>0dBi (max.) For E-UTRA Band 2;<br>0dBi (max.) For E-UTRA Band 4;<br>0dBi (max.) For E-UTRA Band 5;<br>0dBi (max.) For E-UTRA Band 12;<br>0dBi (max.) For E-UTRA Band 13;<br>0dBi (max.) For E-UTRA Band 14;<br>0dBi (max.) For E-UTRA Band 66;<br>0dBi (max.) For E-UTRA Band 71. |
| Power Class | : | Class 3 |

## 2.3 Equipment under Test

**Power supply system utilised**

| | | | | | |
|---|---|---|---|---|---|
| Power supply voltage | : | ○ | 120V / 60 Hz | ○ | 115V / 60Hz |
| | | ○ | 12 V DC | ● | 24 V DC |
| | | ○ | Other (specified in blank below) | | |

## 2.4 Short description of the Equipment under Test (EUT)

### 2.4.1 GeneralDescription

CellCOM Prime 7 4G is subscriber equipment in the LTE system. LTE frequency band is band 2/4/5/12/13/14/66/71. The CellCOM Prime 7 4G implements such functions as RF signal receiving/transmitting, LTE protocol processing, video MMS service and etc. Externally it provides SIM card interface.

## 2.5 Internal Identification of AE used during the test

| AE ID* | Description |
|---|---|
| AE1 | Rechargeable Li-Polymer Battery |
| AE2 | Switching Adapter |

AE2
Adapter Model: GEO451DA-240200
Adapter Input: 100-240V~, 50/60Hz, 1.2A
Adapter Output: 24V⎓2A

## 2.6 Normal Accessory setting

Fully charged battery was used during the test.

## 2.7 EUT configuration

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

● - supplied by the manufacturer

○ - supplied by the lab

| | | | |
|---|---|---|---|
| ○ | Power Cable | Length (m) : | / |
| | | Shield : | / |
| | | Detachable : | / |
| ○ | Multimeter | Manufacturer : | / |
| | | Model No. : | / |

## 2.8 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: 2ALPX-PRIME7-4GQA** filing to comply with FCC Part 22, Part 24 , Part 27,90 Rules

## 2.9 Modifications

No modifications were implemented to meet testing criteria.

## 2.10 General Test Conditions/Configurations

### 2.10.1 Test Environment

| EnvironmentParameter | SelectedValuesDuringTests | |
|---|---|---|
| Relative Humidity | Ambient | |
| Temperature | TN | Ambient |
| Voltage | VL | DC 20.4V |
| | VN | DC 24.0V |
| | VH | DC 27.6V |

NOTE:VL=lower extreme testvoltage VN=nominal voltage
VH=upper extreme testvoltage TN=normal temperature

# 3 TEST ENVIRONMENT

## 3.1 Address of the test laboratory

**Shenzhen LCS Compliance Testing Laboratory Ltd**
101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Shajing Street, Baoan District, Shenzhen, China
The sites are constructed in conformance with the requirements of ANSI C63.4 (2014) and CISPR Publication 22.

## 3.2 Test Facility

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

NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024.

CAB identifier is CN0071.

CNAS Registration Number is L4595.

## 3.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

| | |
|---|---|
| Temperature: | 15-35 ° C |
| | |
| Humidity: | 30-60 % |
| | |
| Atmospheric pressure: | 950-1050mbar |

## 3.4 Test Description

**Band 2 (1850-1910MHz pairedwith 1930-1990MHz)**

| Test Item | FCC Rule No. | Requirements | Verdict |
|---|---|---|---|
| Effective(Isotropic) Radiated Output Power | §2.1046, §24.232 | EIRP ≤ 2W | PASS |
| Peak-Average Ratio | §2.1046, §24.232 | FCC:Limit≤13dB | PASS |
| Modulation Characteristics | §2.1047 | Digital modulation | N/A |
| Bandwidth | §2.1049 | OBW: No limit.<br>EBW: No limit. | PASS |
| Band Edges Compliance | §2.1051, §24.238 | ≤ -13dBm/1%*EBW,<br>In 1MHz bands immediately outside and adjacent to the frequency block. | PASS |
| Spurious Emission at Antenna Terminals | §2.1051, §24.238 | ≤-13dBm/1MHz,<br>from 9kHz to10$^{th}$ harmonics but outside authorized Operating frequency ranges. | PASS |
| Field Strength of Spurious Radiation | §2.1053, §24.238 | ≤ -13dBm/1MHz. | PASS |
| Frequency Stability | §2.1055, §24.235 | FCC: within authorized frequency block. | PASS |
| NOTE 1:For the verdict, the“N/A”denotes“not applicable”,the“N/T”de notes “not tested”. | | | |

**Band 4 (1710-1755MHz pairedwith 2110-2155MHz)**

| Test Item | FCC RuleNo. | Requirements | Verdict |
|---|---|---|---|
| Effective(Isotropic) Radiated Power Output Data | §2.1046, §27.50(d) | EIRP ≤ 1W; | PASS |
| Peak-Average Ratio | §2.1046, §27.50(d) | Limit≤13dB | Pass |
| Modulation Characteristics | §2.1047 | Digitalmodulation | N/A |
| Bandwidth | §2.1049 | OBW: Nolimit.<br>EBW: Nolimit. | PASS |
| BandEdges Compliance | §2.1051, §27.53(h) | ≤ -13dBm/1%*EBW,in1 MHz bands immediately outside and adjacent to the frequency block. | PASS |
| Spurious Emission at Antenna Terminals | §2.1051, §27.53(h) | ≤ -13dBm/1MHz, from 9kHz to10th harmonics but outside authorized operating frequency ranges. | PASS |
| Frequency Stability | §2.1055, §27.54 | Within authorized bands of operation/frequency block. | PASS |
| Radiated spurious emission | §2.1053, §27.53(h) | ≤ -13dBm/1MHz. | PASS |
| NOTE 1: For the verdict, the “N/A” denotes “not applicable”, the “N/T” de notes “not tested” | | | |

**Band 5 (824-849MHz pairedwith 869-894MHz)**

| Test Item | FCC Rule No. | Requirements | Verdict |
|---|---|---|---|
| Effective(Isotropic) Radiated Output Power | §2.1046, §22.913 | FCC: ERP ≤ 7W. | Pass |
| Modulation Characteristics | §2.1047 | Digital modulation | N/A |
| Bandwidth | §2.1049 | OBW: No limit.<br>EBW: No limit. | Pass |
| Band Edges Compliance | §2.1051, §22.917 | ≤-≤ -13dBm/1%*EBW,<br>In 1MHz bands immediately outside and adjacent to<br>The frequency block. | Pass |
| Spurious Emission at Antenna Terminals | §2.1051, §22.917 | FCC: ≤ -13dBm/100kHz,<br>from 9kHz to 10th harmonics but outside authorized operating frequency ranges. | Pass |
| Field Strength of Spurious Radiation | §2.1053, §22.917 | FCC: ≤ -13dBm/100kHz. | Pass |
| Frequency Stability | §2.1055, §22.355 | ≤ ±2.5ppm. | Pass |
| NOTE 1:For the verdict, the“N/A”denotes“not applicable”,the“N/T”de notes “not tested”. | | | |

**Band 12 (699-716MHz paired with 729-746MHz)**

| Test Item | FCC Rule No. | Requirements | Verdict |
|---|---|---|---|
| Effective(Isotropic) Radiated Power Output Data | §2.1046, §27.50(c) | ERP ≤ 3W; | PASS |
| Peak-Average Ratio | §2.1046, §27.50(c) | Limit≤13dB | PASS |
| Modulation Characteristics | §2.1047 | Digitalmodulation | N/A |
| Bandwidth | §2.1049 | OBW: Nolimit.<br>EBW: Nolimit. | PASS |
| BandEdges Compliance | §2.1051, §27.53(g) | ≤ -13dBm/1%*EBW,in1 MHz bands immediately outside and adjacent to The frequency block. | PASS |
| Spurious Emission at Antenna Terminals | §2.1051, §27.53(g) | ≤ -13dBm/100KHz, from 9kHz to10th harmonics but outside authorized Operating frequency ranges. | PASS |
| Frequency Stability | §2.1055, §27.54 | Within authorized bands of operation/frequency block. | PASS |
| Radiatedspurious emission | §2.1053, §27.53(g) | ≤ -13dBm/100KHz. | PASS |
| NOTE 1:For the verdict, the“N/A”denotes“not applicable”,the“N/T”de notes “not tested”. | | | |

**Band 13 (777-787MHz paired with 746-756MHz)**

| Test Item | FCC Rule No. | Requirements | Verdict |
|---|---|---|---|
| Effective(Isotropic) Radiated Power Output Data | §2.1046, §27.50(b) | ERP ≤ 3W; | PASS |
| Peak-Average Ratio | §2.1046, §27.50(b) | Limit≤13dB | PASS |
| Modulation Characteristics | §2.1047 | Digitalmodulation | N/A |
| Bandwidth | §2.1049 | OBW: Nolimit.<br>EBW: Nolimit. | PASS |
| BandEdges Compliance | §2.1051, §27.53(c) | ≤ -13dBm/1%*EBW,in1 MHz bands immediately outside and adjacent to The frequency block. | PASS |
| Spurious Emission at Antenna Terminals | §2.1051, §27.53(c) | ≤ -13dBm/100KHz, from 9kHz to10th harmonics but outside authorized Operating frequency ranges. | PASS |
| Frequency Stability | §2.1055, §27.54 | Within authorized bands of operation/frequency block. | PASS |
| Radiatedspurious emission | §2.1053, §27.53(c) | ≤ -13dBm/100KHz. | PASS |
| NOTE 1:For the verdict, the“N/A”denotes“not applicable”,the“N/T”de notes “not tested”. | | | |

**Band 14 (788-798MHz paired with 758-768MHz)**

| Test Item | FCC Rule No. | Requirements | Verdict |
|---|---|---|---|
| Effective(Isotropic) Radiated Power Output Data | § 90.542(6) | ERP ≤ 30W; | PASS |
| Peak-Average Ratio | § 2.1046 | Limit≤13dB | PASS |
| Modulation Characteristics | §2.1047 | Digital modulation | N/A |
| Bandwidth | §2.1049 | OBW: Nolimit.<br>EBW: Nolimit. | PASS |
| BandEdges Compliance | § 2.1051,<br>§ 90.543(e) | (1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.<br>(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.<br>(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB. | PASS |
| Spurious Emission at Antenna Terminals | § 2.1051,<br>§ 90.543(c)<br>§ 90.543(f) | ≤ -13dBm/100KHz, from 9kHz to10th harmonics but outside authorized<br>FCC: ⩽ -13 dBm/100 kHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges. For operations in the 758 – 775 MHz and 788 – 805 MHz bands, all emissions including harmonics in the band 1559 – 1610 MHz shall be limited to -70 dBW/ MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. | PASS |
| Frequency Stability | § 2.1055,<br>§ 90.539(e) | ⩽ ±1.25ppm. | PASS |
| Radiatedspurious emission | § 2.1053,<br>§ 90.543(c)<br>§ 90.543(f) | FCC: ⩽ -13 dBm/100 kHz.<br>For operations in the 758 – 775 MHz and 788 – 805 MHz bands, all emissions including harmonics in the band 1559 – 1610 MHz shall be limited to -70 dBW/ MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. | PASS |
| NOTE 1:For the verdict, the“N/A”denotes“not applicable”,the“N/T”de notes “not tested”. | | | |

**Band 66 (1710-1780MHz pairedwith 2110-2200MHz)**

| Test Item | FCC RuleNo. | Requirements | Verdict |
|---|---|---|---|
| Effective(Isotropic) Radiated Power Output Data | §2.1046, §27.50(d) | EIRP ≤ 1W; | PASS |
| Peak-Average Ratio | §2.1046, §27.50(d) | Limit≤13dB | Pass |
| Modulation Characteristics | §2.1047 | Digitalmodulation | N/A |
| Bandwidth | §2.1049 | OBW: Nolimit.<br>EBW: Nolimit. | PASS |
| Band Edges Compliance | §2.1051, §27.53(g) | ≤ -13dBm/1%*EBW,in1 MHz bands immediately outside and adjacent to the frequency block. | PASS |
| Spurious Emission at Antenna Terminals | §2.1051, §27.53(g) | ≤ -13dBm/1MHz, from 9kHz to10$^{th}$ harmonics but outside authorized operating frequency ranges. | PASS |
| Frequency Stability | §2.1055, §27.54 | Within authorized bands of operation/frequency block. | PASS |
| Radiated spurious emission | §2.1053, §27.53(g) | ≤ -13dBm/1MHz. | PASS |
| NOTE 1: For the verdict, the “N/A” denotes “not applicable”, the “N/T” de notes “not tested” | | | |

**Band 71 (663-698MHz pairedwith 617-652MHz)**

| Test Item | FCC RuleNo. | Requirements | Verdict |
|---|---|---|---|
| Effective(Isotropic) Radiated Power Output Data | §2.1046, §27.50(c) | EIRP ≤ 3W; | PASS |
| Peak-Average Ratio | §2.1046, | Limit≤13dB | Pass |
| Modulation Characteristics | §2.1047 | Digitalmodulation | N/A |
| Bandwidth | §2.1049 | OBW: Nolimit.<br>EBW: Nolimit. | PASS |
| BandEdges Compliance | §2.1051, §27.53(g) | ≤ -13dBm/1%*EBW,in1 MHz bands immediately outside and adjacent to the frequency block. | PASS |
| Spurious Emission at Antenna Terminals | §2.1051, §27.53(g) | ≤ -13dBm/1MHz, from 9kHz to10$^{th}$ harmonics but outside authorized operating frequency ranges. | PASS |
| Frequency Stability | §2.1055, §27.54 | Within authorized bands of operation/frequency block. | PASS |
| Radiated spurious emission | §2.1053, §27.53(g) | ≤ -13dBm/1MHz. | PASS |
| NOTE 1: For the verdict, the “N/A” denotes “not applicable”, the “N/T” de notes “not tested” | | | |

## 3.5 Equipments Used during the Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 1 | Power Meter | R&S | NRVS | 100444 | 2021-06-21 | 2022-06-20 |
| 2 | Power Sensor | R&S | NRV-Z81 | 100458 | 2021-06-21 | 2022-06-20 |
| 3 | Power Sensor | R&S | NRV-Z32 | 10057 | 2021-06-21 | 2022-06-20 |
| 4 | LTE Test Software | Tonscend | JS1120-1 | N/A | N/A | N/A |
| 5 | RF Control Unit | Tonscend | JS0806 | 158060009 | 2020-11-26 | 2021-11-25 |
| 6 | MXA Signal Analyzer | Agilent | N9020A | MY51250905 | 2020-11-17 | 2021-11-16 |
| 7 | WIDEBAND RADIO COMMUNICATION TESTER | R&S | CMW 500 | 103818 | 2021-06-21 | 2022-06-20 |
| 8 | DC Power Supply | Agilent | E3642A | N/A | 2020-11-26 | 2021-11-25 |
| 9 | EMI Test Software | AUDIX | E3 | / | N/A | N/A |
| 10 | 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M | 03CH03-HY | 2021-06-21 | 2022-06-20 |
| 11 | Positioning Controller | MF | MF7082 | MF78020803 | 2021-06-21 | 2022-06-20 |
| 12 | Active Loop Antenna | SCHWARZBECK | FMZB 1519B | 00005 | 2021-07-25 | 2024-07-24 |
| 13 | By-log Antenna | SCHWARZBECK | VULB9163 | 9163-470 | 2021-07-25 | 2024-07-24 |
| 14 | Horn Antenna | SCHWARZBECK | BBHA 9120D | 9120D-1925 | 2021-07-01 | 2024-06-30 |
| 15 | Broadband Horn Antenna | SCHWARZBECK | BBHA 9170 | 791 | 2020-09-20 | 2023-09-19 |
| 16 | Broadband Preamplifier | SCHWARZBECK | BBV9745 | 9719-025 | 2021-06-21 | 2022-06-20 |
| 17 | EMI Test Receiver | R&S | ESR 7 | 101181 | 2021-06-21 | 2022-06-20 |
| 18 | RS SPECTRUM ANALYZER | R&S | FSP40 | 100503 | 2020-11-17 | 2021-11-16 |
| 19 | Broadband Preamplifier | / | BP-01M18G | P190501 | 2021-06-21 | 2022-06-20 |
| 20 | 6dB Attenuator | / | 100W/6dB | 1172040 | 2021-06-21 | 2022-06-20 |
| 21 | 3dB Attenuator | / | 2N-3dB | / | 2020-11-17 | 2021-11-16 |
| 22 | Temperature & Humidity Chamber | GUANGZHOU GOGNWEN | GDS-100 | 70932 | 2021-10-07 | 2022-10-06 |
| 23 | EMI Test Software | Farad | EZ | N/A | N/A | N/A |

## 3.6 Measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to ETSI TR 100 028"Electromagnetic compatibilityand Radio spectrum Matters (ERM);Uncertainties in the measurementof mobile radio equipment characteristics" and is documented in the Shenzhen LCS Compliance Testing Laboratory Ltd.quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen LCS Compliance Testing Laboratory Ltd. is reported:

| Test | Range | Measurement Uncertainty | Notes |
|---|---|---|---|
| Radiated Emission | 30~1000MHz | 3.10 dB | (1) |
| Radiated Emission | 1~18GHz | 3.80 dB | (1) |
| Radiated Emission | 18-40GHz | 3.90 dB | (1) |
| Conducted Disturbance | 0.15~30MHz | 1.63 dB | (1) |
| Conducted Power | 9KHz~18GHz | 0.61 dB | (1) |
| Spurious RF Conducted Emission | 9KHz~40GHz | 1.22 dB | (1) |
| Band Edge Compliance of RF Emission | 9KHz~40GHz | 1.22 dB | (1) |
| Occuiped Bandwidth | 9KHz~40GHz | - | (1) |

(1)This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

# 4 TEST CONDITIONS AND RESULTS

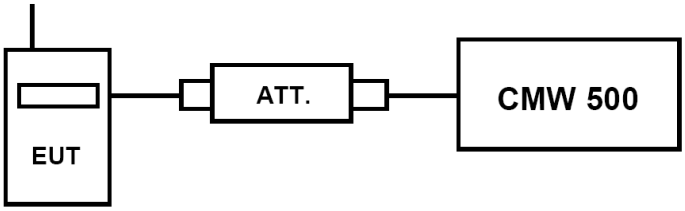
## 4.1 Output Power

**TEST APPLICABLE**

During the process of testing, the EUT was controlled via R&S Digital Radio Communication tester (CMW 500) to ensure max power transmission and proper modulation. This result contains output power and EIRP measurements for the EUT. In all cases, output power is within the specified limits.

## 4.1.1. Conducted Output Power

**TEST CONFIGURATION**




**TEST PROCEDURE**

**Conducted Power Measurement:**

a) Place the EUT on a bench and set it in transmitting mode.
b) Connect a low loss RF cable from the antenna port to a CMW 500 by an Att.
c) EUT Communicate with CMW 500 then selects a channel for testing.
d) Add a correction factor to the display CMW 500, and then test.

**TEST RESULTS**

*Remark:*

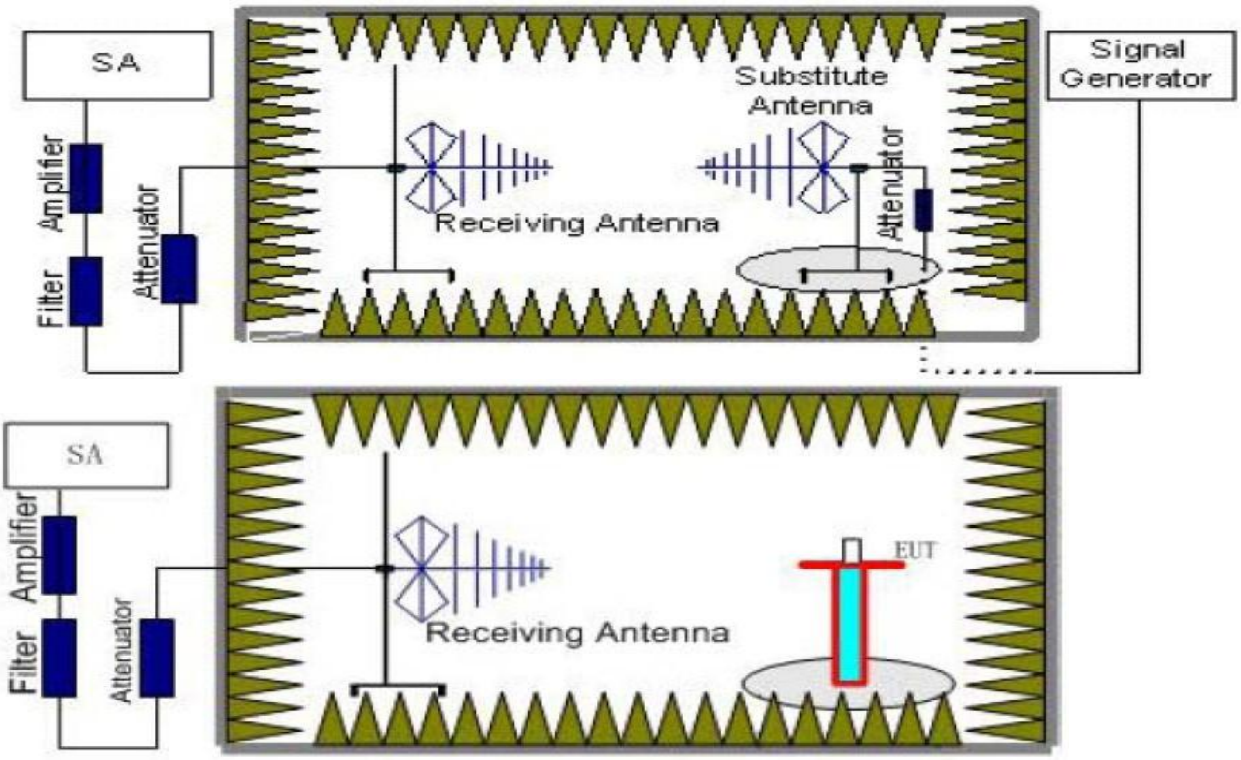
1. *We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 14, LTE FDD Band 66, LTE FDD Band 71; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 14, LTE FDD Band 66, LTE FDD Band 71.*
2. *For E-UTRA Band 2, please refer to Appendix A: Section A.1*
3. *For E-UTRA Band 4, please refer to Appendix B: Section B.1*
4. *For E-UTRA Band 5, please refer to Appendix C: Section C.1*
5. *For E-UTRA Band 12, please refer to Appendix D: Section D.1*
6. *For E-UTRA Band 13, please refer to Appendix E: Section E.1*
7. *For E-UTRA Band 14, please refer to Appendix F: Section F.1*
8. *For E-UTRA Band 66, please refer to Appendix G: Section G.1*
9. *For E-UTRA Band 71, please refer to Appendix H: Section H.1*

## 4.1.2. Radiated Output Power

**LIMIT**

This is the test for the maximum radiated power from the EUT.
Per §22.913(2) Extend coverage on a secondary basis into cellular unserved areas, as those areas are defined in §22.949, the ERP of base transmitters and cellular repeaters of such systems must not exceed 1000 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
Rule Part 24.232(c) specifies, "Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power" and 24.232(e) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage." .
Per Part 27.50(d) (4) specifies, Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755MHz band are limited to 1W EIRP. Fixed stations operating in this band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in this band must employ a means for limiting power to the minimum necessary for successful communications.
Per Part 27.50(c) (10)specifies, Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.
Per Part 27.50(h) (2)specifies Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.
Per Part 90.542(6) The maximum output power of the transmitter for mobile stations is 30 watts .

**TEST CONFIGURATION**




**TEST PROCEDURE**

1. EUT was placed on a 1.50 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.50m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated

through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.

3. The EUT is then put into continuously transmitting mode at its maximum power level during the test.Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz, And the maximum value of the receiver should be recorded as ($P_r$).
4. The EUT shall be replaced by a substitution antenna.In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power ($P_{Mea}$) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded ($P_r$). The power of signal source ($P_{Mea}$) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss ($P_{cl}$) ,the Substitution Antenna Gain ($G_a$) and the Amplifier Gain ($P_{Ag}$) should be recorded after test.
   The measurement results are obtained as described below:
   Power(EIRP)=$P_{Mea}$+ $P_{Ag}$ - $P_{cl}$ + $G_a$
6. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
7. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

## TEST RESULTS

**Radiated Measurement:**

*Remark:*

1. *We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 4; recorded worst case for each Channel Bandwidth of LTE FDD Band 4.*
2. *EIRP=$P_{Mea}$(dBm)-$P_{cl}$(dB)+$P_{Ag}$(dB)+$G_a$(dBi)*
3. *ERP = EIRP – 2.15dBi as EIRP by subtracting the gain of the dipole.*
4. *Margin = Emission Level - Limit*
5. *We test the H direction and V direction recorded worst case*

*LTE FDD Band 2_Channel Bandwidth 1.4MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1850.7 | -19.64 | 4.03 | 8.38 | 35.51 | 20.22 | 33.01 | -12.79 | V |
| 1880.0 | -19.95 | 4.08 | 8.33 | 35.56 | 19.86 | 33.01 | -13.15 | V |
| 1909.3 | -19.26 | 4.14 | 8.26 | 35.63 | 20.49 | 33.01 | -12.52 | V |

*LTE FDD Band 2_Channel Bandwidth 3MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1851.5 | -20.36 | 4.03 | 8.38 | 35.51 | 19.50 | 33.01 | -13.51 | V |
| 1880.0 | -19.67 | 4.08 | 8.33 | 35.56 | 20.14 | 33.01 | -12.87 | V |
| 1908.5 | -19.87 | 4.14 | 8.26 | 35.63 | 19.88 | 33.01 | -13.13 | V |

*LTE FDD Band 2_Channel Bandwidth 5MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1852.5 | -20.26 | 4.03 | 8.38 | 35.51 | 19.60 | 33.01 | -13.41 | V |
| 1880.0 | -20.93 | 4.08 | 8.33 | 35.56 | 18.88 | 33.01 | -14.13 | V |
| 1907.5 | -20.78 | 4.14 | 8.26 | 35.63 | 18.97 | 33.01 | -14.04 | V |

*LTE FDD Band 2_Channel Bandwidth 10MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1855.0 | -21.02 | 4.03 | 8.38 | 35.51 | 18.84 | 33.01 | -14.17 | V |
| 1880.0 | -21.24 | 4.08 | 8.33 | 35.56 | 18.57 | 33.01 | -14.44 | V |
| 1905.0 | -20.53 | 4.14 | 8.26 | 35.63 | 19.22 | 33.01 | -13.79 | V |

*LTE FDD Band 2_Channel Bandwidth 15MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1857.5 | -21.56 | 4.03 | 8.38 | 35.51 | 18.30 | 33.01 | -14.71 | V |
| 1880.0 | -21.70 | 4.08 | 8.33 | 35.56 | 18.11 | 33.01 | -14.90 | V |
| 1902.5 | -21.68 | 4.14 | 8.26 | 35.63 | 18.07 | 33.01 | -14.94 | V |

*LTE FDD Band 2_Channel Bandwidth 20MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1860.0 | -21.65 | 4.03 | 8.38 | 35.51 | 18.21 | 33.01 | -14.80 | V |
| 1880.0 | -21.73 | 4.08 | 8.33 | 35.56 | 18.08 | 33.01 | -14.93 | V |
| 1900.0 | -21.64 | 4.14 | 8.26 | 35.63 | 18.11 | 33.01 | -14.90 | V |

*LTE FDD Band 2_Channel Bandwidth 1.4MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1850.7 | -20.32 | 4.03 | 8.38 | 35.51 | 19.54 | 33.01 | -13.47 | V |
| 1880.0 | -20.12 | 4.08 | 8.33 | 35.56 | 19.69 | 33.01 | -13.32 | V |
| 1909.3 | -20.15 | 4.14 | 8.26 | 35.63 | 19.60 | 33.01 | -13.41 | V |

*LTE FDD Band 2_Channel Bandwidth 3MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1851.5 | -20.25 | 4.03 | 8.38 | 35.51 | 19.61 | 33.01 | -13.40 | V |
| 1880.0 | -20.73 | 4.08 | 8.33 | 35.56 | 19.08 | 33.01 | -13.93 | V |
| 1908.5 | -20.86 | 4.14 | 8.26 | 35.63 | 18.89 | 33.01 | -14.12 | V |

*LTE FDD Band 2_Channel Bandwidth 5MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1852.5 | -21.39 | 4.03 | 8.38 | 35.51 | 18.47 | 33.01 | -14.54 | V |
| 1880.0 | -21.39 | 4.08 | 8.33 | 35.56 | 18.42 | 33.01 | -14.59 | V |
| 1907.5 | -21.06 | 4.14 | 8.26 | 35.63 | 18.69 | 33.01 | -14.32 | V |

*LTE FDD Band 2_Channel Bandwidth 10MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1855.0 | -21.80 | 4.03 | 8.38 | 35.51 | 18.06 | 33.01 | -14.95 | V |
| 1880.0 | -21.53 | 4.08 | 8.33 | 35.56 | 18.28 | 33.01 | -14.73 | V |
| 1905.0 | -21.50 | 4.14 | 8.26 | 35.63 | 18.25 | 33.01 | -14.76 | V |

*LTE FDD Band 2_Channel Bandwidth 15MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1857.5 | -22.26 | 4.03 | 8.38 | 35.51 | 17.60 | 33.01 | -15.41 | V |
| 1880.0 | -22.44 | 4.08 | 8.33 | 35.56 | 17.37 | 33.01 | -15.64 | V |
| 1902.5 | -22.23 | 4.14 | 8.26 | 35.63 | 17.52 | 33.01 | -15.49 | V |

*LTE FDD Band 2_Channel Bandwidth 20MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1860.0 | -22.77 | 4.03 | 8.38 | 35.51 | 17.09 | 33.01 | -15.92 | V |
| 1880.0 | -22.87 | 4.08 | 8.33 | 35.56 | 16.94 | 33.01 | -16.07 | V |
| 1900.0 | -22.33 | 4.14 | 8.26 | 35.63 | 17.42 | 33.01 | -15.59 | V |

*LTE FDD Band 4_Channel Bandwidth 1.4MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1710.7 | -19.42 | 3.93 | 9.05 | 34.96 | 20.66 | 30.00 | -9.34 | V |
| 1732.5 | -19.37 | 3.93 | 8.89 | 35.01 | 20.60 | 30.00 | -9.40 | V |
| 1754.3 | -18.67 | 3.94 | 8.76 | 35.08 | 21.23 | 30.00 | -8.77 | V |

*LTE FDD Band 4_Channel Bandwidth 3MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1711.5 | -19.17 | 3.93 | 9.05 | 34.96 | 20.91 | 30.00 | -9.09 | V |
| 1732.5 | -19.23 | 3.93 | 8.89 | 35.01 | 20.74 | 30.00 | -9.26 | V |
| 1753.5 | -19.52 | 3.94 | 8.76 | 35.08 | 20.38 | 30.00 | -9.62 | V |

*LTE FDD Band 4_Channel Bandwidth 5MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1712.5 | -18.90 | 3.93 | 9.05 | 34.96 | 21.18 | 30.00 | -8.82 | V |
| 1732.5 | -18.77 | 3.93 | 8.89 | 35.01 | 21.20 | 30.00 | -8.80 | V |
| 1752.5 | -18.82 | 3.94 | 8.76 | 35.08 | 21.08 | 30.00 | -8.92 | V |

*LTE FDD Band 4_Channel Bandwidth 10MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1715.0 | -19.62 | 3.93 | 9.05 | 34.96 | 20.46 | 30.00 | -9.54 | V |
| 1732.5 | -19.14 | 3.93 | 8.89 | 35.01 | 20.83 | 30.00 | -9.17 | V |
| 1750.0 | -19.07 | 3.94 | 8.76 | 35.08 | 20.83 | 30.00 | -9.17 | V |

*LTE FDD Band 4_Channel Bandwidth 15MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1717.5 | -19.15 | 3.93 | 9.05 | 34.96 | 20.93 | 30.00 | -9.07 | V |
| 1732.5 | -19.49 | 3.93 | 8.89 | 35.01 | 20.48 | 30.00 | -9.52 | V |
| 1747.5 | -19.34 | 3.94 | 8.76 | 35.08 | 20.56 | 30.00 | -9.44 | V |

*LTE FDD Band 4_Channel Bandwidth 20MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1720.0 | -19.79 | 3.93 | 9.05 | 34.96 | 20.29 | 30.00 | -9.71 | V |
| 1732.5 | -19.70 | 3.93 | 8.89 | 35.01 | 20.27 | 30.00 | -9.73 | V |
| 1745.0 | -19.38 | 3.94 | 8.76 | 35.08 | 20.52 | 30.00 | -9.48 | V |

*LTE FDD Band 4_Channel Bandwidth 1.4MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1710.7 | -19.50 | 3.93 | 9.05 | 34.96 | 20.58 | 30.00 | -9.42 | V |
| 1732.5 | -19.38 | 3.93 | 8.89 | 35.01 | 20.59 | 30.00 | -9.41 | V |
| 1754.3 | -19.51 | 3.94 | 8.76 | 35.08 | 20.39 | 30.00 | -9.61 | V |

*LTE FDD Band 4_Channel Bandwidth 3MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Avergae EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1711.5 | -19.45 | 3.93 | 9.05 | 34.96 | 20.63 | 30.00 | -9.37 | V |
| 1732.5 | -19.24 | 3.93 | 8.89 | 35.01 | 20.73 | 30.00 | -9.27 | V |
| 1753.5 | -19.00 | 3.94 | 8.76 | 35.08 | 20.90 | 30.00 | -9.10 | V |

*LTE FDD Band 4_Channel Bandwidth 5MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1712.5 | -19.63 | 3.93 | 9.05 | 34.96 | 20.45 | 30.00 | -9.55 | V |
| 1732.5 | -19.69 | 3.93 | 8.89 | 35.01 | 20.28 | 30.00 | -9.72 | V |
| 1752.5 | -19.41 | 3.94 | 8.76 | 35.08 | 20.49 | 30.00 | -9.51 | V |

*LTE FDD Band 4_Channel Bandwidth 10MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Avergae EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1715.0 | -18.98 | 3.93 | 9.05 | 34.96 | 21.10 | 30.00 | -8.90 | V |
| 1732.5 | -19.34 | 3.93 | 8.89 | 35.01 | 20.63 | 30.00 | -9.37 | V |
| 1750.0 | -18.91 | 3.94 | 8.76 | 35.08 | 20.99 | 30.00 | -9.01 | V |

*LTE FDD Band 4_Channel Bandwidth 15MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1717.5 | -19.20 | 3.93 | 9.05 | 34.96 | 20.88 | 30.00 | -9.12 | V |
| 1732.5 | -19.74 | 3.93 | 8.89 | 35.01 | 20.23 | 30.00 | -9.77 | V |
| 1747.5 | -19.51 | 3.94 | 8.76 | 35.08 | 20.39 | 30.00 | -9.61 | V |

*LTE FDD Band 4_Channel Bandwidth 20MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Avergae EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1720.0 | -18.98 | 3.93 | 9.05 | 34.96 | 21.10 | 30.00 | -8.90 | V |
| 1732.5 | -18.74 | 3.93 | 8.89 | 35.01 | 21.23 | 30.00 | -8.77 | V |
| 1745.0 | -19.09 | 3.94 | 8.76 | 35.08 | 20.81 | 30.00 | -9.19 | V |

*LTE FDD Band 5_Channel Bandwidth 1.4MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 824.70 | -15.98 | 3.45 | 8.45 | 2.15 | 33.79 | 20.66 | 38.45 | -17.79 | V |
| 836.50 | -15.60 | 3.49 | 8.45 | 2.15 | 33.85 | 21.06 | 38.45 | -17.39 | V |
| 848.30 | -15.58 | 3.55 | 8.36 | 2.15 | 33.88 | 20.96 | 38.45 | -17.49 | V |

*LTE FDD Band 5_Channel Bandwidth 3MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 825.50 | -16.26 | 3.45 | 8.45 | 2.15 | 33.79 | 20.38 | 38.45 | -18.07 | V |
| 836.50 | -15.55 | 3.49 | 8.45 | 2.15 | 33.85 | 21.11 | 38.45 | -17.34 | V |
| 847.50 | -15.54 | 3.55 | 8.36 | 2.15 | 33.88 | 21.00 | 38.45 | -17.45 | V |

*LTE FDD Band 5_Channel Bandwidth 5MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 826.50 | -16.41 | 3.45 | 8.45 | 2.15 | 33.79 | 20.23 | 38.45 | -18.22 | V |
| 836.50 | -15.86 | 3.49 | 8.45 | 2.15 | 33.85 | 20.80 | 38.45 | -17.65 | V |
| 846.50 | -16.43 | 3.55 | 8.36 | 2.15 | 33.88 | 20.11 | 38.45 | -18.34 | V |

*LTE FDD Band 5_Channel Bandwidth 10MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 829.00 | -15.60 | 3.45 | 8.45 | 2.15 | 33.79 | 21.04 | 38.45 | -17.41 | V |
| 836.50 | -16.15 | 3.49 | 8.45 | 2.15 | 33.85 | 20.51 | 38.45 | -17.94 | V |
| 844.00 | -16.32 | 3.55 | 8.36 | 2.15 | 33.88 | 20.22 | 38.45 | -18.23 | V |

*LTE FDD Band 5_Channel Bandwidth 1.4MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 824.70 | -16.71 | 3.45 | 8.45 | 2.15 | 33.79 | 19.93 | 38.45 | -18.52 | V |
| 836.50 | -17.40 | 3.49 | 8.45 | 2.15 | 33.85 | 19.26 | 38.45 | -19.19 | V |
| 848.30 | -17.03 | 3.55 | 8.36 | 2.15 | 33.88 | 19.51 | 38.45 | -18.94 | V |

*LTE FDD Band 5_Channel Bandwidth 3MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 825.50 | -16.90 | 3.45 | 8.45 | 2.15 | 33.79 | 19.74 | 38.45 | -18.71 | V |
| 836.50 | -17.34 | 3.49 | 8.45 | 2.15 | 33.85 | 19.32 | 38.45 | -19.13 | V |
| 847.50 | -17.50 | 3.55 | 8.36 | 2.15 | 33.88 | 19.04 | 38.45 | -19.41 | V |

*LTE FDD Band 5_Channel Bandwidth 5MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 826.50 | -17.17 | 3.45 | 8.45 | 2.15 | 33.79 | 19.47 | 38.45 | -18.98 | V |
| 836.50 | -17.07 | 3.49 | 8.45 | 2.15 | 33.85 | 19.59 | 38.45 | -18.86 | V |
| 846.50 | -16.79 | 3.55 | 8.36 | 2.15 | 33.88 | 19.75 | 38.45 | -18.70 | V |

*LTE FDD Band 5_Channel Bandwidth 10MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 829.00 | -17.32 | 3.45 | 8.45 | 2.15 | 33.79 | 19.32 | 38.45 | -19.13 | V |
| 836.50 | -16.65 | 3.49 | 8.45 | 2.15 | 33.85 | 20.01 | 38.45 | -18.44 | V |
| 844.00 | -16.99 | 3.55 | 8.36 | 2.15 | 33.88 | 19.55 | 38.45 | -18.90 | V |

*LTE FDD Band 12_Channel Bandwidth 1.4MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 699.70 | -14.36 | 3.01 | 8.29 | 2.15 | 33.52 | 22.29 | 34.77 | -12.48 | V |
| 707.50 | -14.41 | 3.02 | 8.29 | 2.15 | 33.52 | 22.23 | 34.77 | -12.54 | V |
| 715.30 | -14.01 | 3.06 | 8.29 | 2.15 | 33.52 | 22.59 | 34.77 | -12.18 | V |

*LTE FDD Band 12_Channel Bandwidth 3MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 700.50 | -14.71 | 3.01 | 8.29 | 2.15 | 33.52 | 21.94 | 34.77 | -12.83 | V |
| 707.50 | -14.87 | 3.02 | 8.29 | 2.15 | 33.52 | 21.77 | 34.77 | -13.00 | V |
| 714.50 | -14.92 | 3.06 | 8.29 | 2.15 | 33.52 | 21.68 | 34.77 | -13.09 | V |

*LTE FDD Band 12_Channel Bandwidth 5MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 701.50 | -15.37 | 3.01 | 8.29 | 2.15 | 33.52 | 21.28 | 34.77 | -13.49 | V |
| 707.50 | -15.59 | 3.02 | 8.29 | 2.15 | 33.52 | 21.05 | 34.77 | -13.72 | V |
| 713.50 | -14.90 | 3.06 | 8.29 | 2.15 | 33.52 | 21.70 | 34.77 | -13.07 | V |

*LTE FDD Band 12_Channel Bandwidth 10MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 704.00 | -15.66 | 3.01 | 8.29 | 2.15 | 33.52 | 20.99 | 34.77 | -13.78 | V |
| 707.50 | -15.73 | 3.02 | 8.29 | 2.15 | 33.52 | 20.91 | 34.77 | -13.86 | V |
| 711.00 | -15.53 | 3.06 | 8.29 | 2.15 | 33.52 | 21.07 | 34.77 | -13.70 | V |

*LTE FDD Band 12_Channel Bandwidth 1.4MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 699.70 | -14.65 | 3.01 | 8.29 | 2.15 | 33.52 | 22.00 | 34.77 | -12.77 | V |
| 707.50 | -15.47 | 3.02 | 8.29 | 2.15 | 33.52 | 21.17 | 34.77 | -13.60 | V |
| 715.30 | -15.44 | 3.06 | 8.29 | 2.15 | 33.52 | 21.16 | 34.77 | -13.61 | V |

*LTE FDD Band 12_Channel Bandwidth 3MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 700.50 | -15.63 | 3.01 | 8.29 | 2.15 | 33.52 | 21.02 | 34.77 | -13.75 | V |
| 707.50 | -15.43 | 3.02 | 8.29 | 2.15 | 33.52 | 21.21 | 34.77 | -13.56 | V |
| 714.50 | -15.63 | 3.06 | 8.29 | 2.15 | 33.52 | 20.97 | 34.77 | -13.80 | V |

*LTE FDD Band 12_Channel Bandwidth 5MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 701.50 | -15.57 | 3.01 | 8.29 | 2.15 | 33.52 | 21.08 | 34.77 | -13.69 | V |
| 707.50 | -16.27 | 3.02 | 8.29 | 2.15 | 33.52 | 20.37 | 34.77 | -14.40 | V |
| 713.50 | -15.76 | 3.06 | 8.29 | 2.15 | 33.52 | 20.84 | 34.77 | -13.93 | V |

*LTE FDD Band 12_Channel Bandwidth 10MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 704.00 | -16.51 | 3.01 | 8.29 | 2.15 | 33.52 | 20.14 | 34.77 | -14.63 | V |
| 707.50 | -16.33 | 3.02 | 8.29 | 2.15 | 33.52 | 20.31 | 34.77 | -14.46 | V |
| 711.00 | -16.02 | 3.06 | 8.29 | 2.15 | 33.52 | 20.58 | 34.77 | -14.19 | V |

*LTE FDD Band 13_Channel Bandwidth 5MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 779.5 | -17.93 | 3.21 | 9.61 | 2.15 | 33.89 | 20.21 | 34.77 | -14.56 | V |
| 782.0 | -17.77 | 3.23 | 9.52 | 2.15 | 34.74 | 21.11 | 34.77 | -13.66 | V |
| 784.5 | -18.46 | 3.25 | 9.43 | 2.15 | 34.85 | 20.42 | 34.77 | -14.35 | V |

*LTE FDD Band 13_Channel Bandwidth 10MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 782.0 | -17.37 | 3.23 | 9.52 | 2.15 | 34.74 | 21.51 | 34.77 | -13.26 | V |

*LTE FDD Band 13_Channel Bandwidth 5MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 779.5 | -19.31 | 3.21 | 9.61 | 2.15 | 33.89 | 18.83 | 34.77 | -15.94 | V |
| 782.0 | -18.51 | 3.23 | 9.52 | 2.15 | 34.74 | 20.37 | 34.77 | -14.40 | V |
| 784.5 | -18.56 | 3.25 | 9.43 | 2.15 | 34.85 | 20.32 | 34.77 | -14.45 | V |

*LTE FDD Band 13_Channel Bandwidth 10MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 782.0 | -18.37 | 3.23 | 9.52 | 2.15 | 34.74 | 20.51 | 34.77 | -14.26 | V |

*LTE FDD Band 14_Channel Bandwidth 5MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 790.5 | -17.89 | 3.21 | 9.61 | 2.15 | 33.89 | 20.25 | 44.77 | -24.52 | V |
| 793.0 | -17.61 | 3.23 | 9.52 | 2.15 | 34.74 | 21.27 | 44.77 | -23.50 | V |
| 795.5 | -17.77 | 3.25 | 9.43 | 2.15 | 34.85 | 21.11 | 44.77 | -23.66 | V |

*LTE FDD Band 14_Channel Bandwidth 10MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 793.0 | -16.51 | 3.23 | 9.52 | 2.15 | 34.74 | 22.37 | 44.77 | -22.40 | V |

*LTE FDD Band 14_Channel Bandwidth 5MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 790.5 | -19.39 | 3.21 | 9.61 | 2.15 | 33.89 | 18.75 | 44.77 | -26.02 | V |
| 793.0 | -19.15 | 3.23 | 9.52 | 2.15 | 34.74 | 19.73 | 44.77 | -25.04 | V |
| 795.5 | -19.08 | 3.25 | 9.43 | 2.15 | 34.85 | 19.80 | 44.77 | -24.97 | V |

*LTE FDD Band 14_Channel Bandwidth 10MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 793.0 | -17.83 | 3.23 | 9.52 | 2.15 | 34.74 | 21.05 | 44.77 | -23.72 | V |

*LTE FDD Band 66_Channel Bandwidth 1.4MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1710.7 | -18.80 | 3.93 | 9.05 | 34.96 | 21.28 | 30.00 | -8.72 | V |
| 1745.0 | -19.19 | 3.93 | 8.89 | 35.01 | 20.78 | 30.00 | -9.22 | V |
| 1779.3 | -19.31 | 3.94 | 8.76 | 35.08 | 20.59 | 30.00 | -9.41 | V |

*LTE FDD Band 66_Channel Bandwidth 3MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1711.5 | -19.77 | 3.93 | 9.05 | 34.96 | 20.31 | 30.00 | -9.69 | V |
| 1745.0 | -19.38 | 3.93 | 8.89 | 35.01 | 20.59 | 30.00 | -9.41 | V |
| 1778.5 | -19.54 | 3.94 | 8.76 | 35.08 | 20.36 | 30.00 | -9.64 | V |

*LTE FDD Band 66_Channel Bandwidth 5MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1712.5 | -18.65 | 3.93 | 9.05 | 34.96 | 21.43 | 30.00 | -8.57 | V |
| 1745.0 | -19.02 | 3.93 | 8.89 | 35.01 | 20.95 | 30.00 | -9.05 | V |
| 1777.5 | -18.62 | 3.94 | 8.76 | 35.08 | 21.28 | 30.00 | -8.72 | V |

*LTE FDD Band 66_Channel Bandwidth 10MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1715.0 | -19.76 | 3.93 | 9.05 | 34.96 | 20.32 | 30.00 | -9.68 | V |
| 1745.0 | -18.94 | 3.93 | 8.89 | 35.01 | 21.03 | 30.00 | -8.97 | V |
| 1775.0 | -19.37 | 3.94 | 8.76 | 35.08 | 20.53 | 30.00 | -9.47 | V |

*LTE FDD Band 66_Channel Bandwidth 15MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1717.5 | -19.41 | 3.93 | 9.05 | 34.96 | 20.67 | 30.00 | -9.33 | V |
| 1745.0 | -18.83 | 3.93 | 8.89 | 35.01 | 21.14 | 30.00 | -8.86 | V |
| 1772.5 | -19.15 | 3.94 | 8.76 | 35.08 | 20.75 | 30.00 | -9.25 | V |

*LTE FDD Band 66_Channel Bandwidth 20MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1720.0 | -19.29 | 3.93 | 9.05 | 34.96 | 20.79 | 30.00 | -9.21 | V |
| 1745.0 | -19.12 | 3.93 | 8.89 | 35.01 | 20.85 | 30.00 | -9.15 | V |
| 1770.0 | -18.99 | 3.94 | 8.76 | 35.08 | 20.91 | 30.00 | -9.09 | V |

*LTE FDD Band 66_Channel Bandwidth 1.4MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1710.7 | -19.06 | 3.93 | 9.05 | 34.96 | 21.02 | 30.00 | -8.98 | V |
| 1745.0 | -19.41 | 3.93 | 8.89 | 35.01 | 20.56 | 30.00 | -9.44 | V |
| 1779.3 | -19.43 | 3.94 | 8.76 | 35.08 | 20.47 | 30.00 | -9.53 | V |

*LTE FDD Band 66_Channel Bandwidth 3MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Avergae EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1711.5 | -18.84 | 3.93 | 9.05 | 34.96 | 21.24 | 30.00 | -8.76 | V |
| 1745.0 | -18.91 | 3.93 | 8.89 | 35.01 | 21.06 | 30.00 | -8.94 | V |
| 1778.5 | -18.89 | 3.94 | 8.76 | 35.08 | 21.01 | 30.00 | -8.99 | V |

*LTE FDD Band 66_Channel Bandwidth 5MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1712.5 | -19.49 | 3.93 | 9.05 | 34.96 | 20.59 | 30.00 | -9.41 | V |
| 1745.0 | -19.10 | 3.93 | 8.89 | 35.01 | 20.87 | 30.00 | -9.13 | V |
| 1777.5 | -19.14 | 3.94 | 8.76 | 35.08 | 20.76 | 30.00 | -9.24 | V |

*LTE FDD Band 66_Channel Bandwidth 10MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Avergae EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1715.0 | -19.28 | 3.93 | 9.05 | 34.96 | 20.80 | 30.00 | -9.20 | V |
| 1745.0 | -19.04 | 3.93 | 8.89 | 35.01 | 20.93 | 30.00 | -9.07 | V |
| 1775.0 | -18.57 | 3.94 | 8.76 | 35.08 | 21.33 | 30.00 | -8.67 | V |

*LTE FDD Band 66_Channel Bandwidth 15MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Average EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1717.5 | -19.39 | 3.93 | 9.05 | 34.96 | 20.69 | 30.00 | -9.31 | V |
| 1745.0 | -19.12 | 3.93 | 8.89 | 35.01 | 20.85 | 30.00 | -9.15 | V |
| 1772.5 | -19.08 | 3.94 | 8.76 | 35.08 | 20.82 | 30.00 | -9.18 | V |

*LTE FDD Band 66_Channel Bandwidth 20MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | $P_{Ag}$ (dB) | Burst Avergae EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1720.0 | -19.18 | 3.93 | 9.05 | 34.96 | 20.90 | 30.00 | -9.10 | V |
| 1745.0 | -18.96 | 3.93 | 8.89 | 35.01 | 21.01 | 30.00 | -8.99 | V |
| 1770.0 | -18.99 | 3.94 | 8.76 | 35.08 | 20.91 | 30.00 | -9.09 | V |

*LTE FDD Band 71_Channel Bandwidth 5MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 665.5 | -18.07 | 3.45 | 8.45 | 2.15 | 33.79 | 18.57 | 34.77 | -16.20 | V |
| 680.5 | -17.67 | 3.49 | 8.45 | 2.15 | 33.85 | 18.99 | 34.77 | -15.78 | V |
| 695.5 | -17.65 | 3.55 | 8.36 | 2.15 | 33.88 | 18.89 | 34.77 | -15.88 | V |

*LTE FDD Band 71_Channel Bandwidth 10MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 668.0 | -18.20 | 3.45 | 8.45 | 2.15 | 33.79 | 18.44 | 34.77 | -16.33 | V |
| 680.5 | -18.37 | 3.49 | 8.45 | 2.15 | 33.85 | 18.29 | 34.77 | -16.48 | V |
| 693.0 | -17.99 | 3.55 | 8.36 | 2.15 | 33.88 | 18.55 | 34.77 | -16.22 | V |

*LTE FDD Band 71_Channel Bandwidth 15MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 670.5 | -17.94 | 3.45 | 8.45 | 2.15 | 33.79 | 18.70 | 34.77 | -16.07 | V |
| 680.5 | -18.12 | 3.49 | 8.45 | 2.15 | 33.85 | 18.54 | 34.77 | -16.23 | V |
| 690.5 | -17.89 | 3.55 | 8.36 | 2.15 | 33.88 | 18.65 | 34.77 | -16.12 | V |

*LTE FDD Band 71_Channel Bandwidth 20MHz_QPSK*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 673.0 | -17.67 | 3.45 | 8.45 | 2.15 | 33.79 | 18.97 | 34.77 | -15.80 | V |
| 680.5 | -18.46 | 3.49 | 8.45 | 2.15 | 33.85 | 18.20 | 34.77 | -16.57 | V |
| 688.0 | -18.27 | 3.55 | 8.36 | 2.15 | 33.88 | 18.27 | 34.77 | -16.50 | V |

*LTE FDD Band 71_Channel Bandwidth 5MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 665.5 | -18.29 | 3.45 | 8.45 | 2.15 | 33.79 | 18.35 | 34.77 | -16.42 | V |
| 680.5 | -17.93 | 3.49 | 8.45 | 2.15 | 33.85 | 18.73 | 34.77 | -16.04 | V |
| 695.5 | -18.08 | 3.55 | 8.36 | 2.15 | 33.88 | 18.46 | 34.77 | -16.31 | V |

*LTE FDD Band 71_Channel Bandwidth 10MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 668.0 | -17.90 | 3.45 | 8.45 | 2.15 | 33.79 | 18.74 | 34.77 | -16.03 | V |
| 680.5 | -17.94 | 3.49 | 8.45 | 2.15 | 33.85 | 18.72 | 34.77 | -16.05 | V |
| 693.0 | -18.04 | 3.55 | 8.36 | 2.15 | 33.88 | 18.50 | 34.77 | -16.27 | V |

*LTE FDD Band 71_Channel Bandwidth 15MHz_16QAM*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 670.5 | -17.68 | 3.45 | 8.45 | 2.15 | 33.79 | 18.96 | 34.77 | -15.81 | V |
| 680.5 | -17.83 | 3.49 | 8.45 | 2.15 | 33.85 | 18.83 | 34.77 | -15.94 | V |
| 690.5 | -17.96 | 3.55 | 8.36 | 2.15 | 33.88 | 18.58 | 34.77 | -16.19 | V |

*LTE FDD Band 71_Channel Bandwidth 20MHz_16QAM*

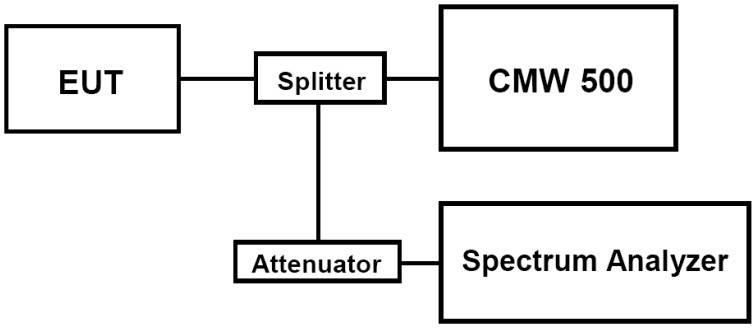
| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | $G_a$ Antenna Gain(dB) | Correction (dB) | $P_{Ag}$ (dB) | Peak ERP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|---|
| 673.0 | -18.03 | 3.45 | 8.45 | 2.15 | 33.79 | 18.61 | 34.77 | -16.16 | V |
| 680.5 | -17.68 | 3.49 | 8.45 | 2.15 | 33.85 | 18.98 | 34.77 | -15.79 | V |
| 688.0 | -17.66 | 3.55 | 8.36 | 2.15 | 33.88 | 18.88 | 34.77 | -15.89 | V |

## 4.2 Peak-to-Average Ratio (PAR)

**LIMIT**

The Peak-to-Average Ratio (PAR) of the transmission may not exceed 13 dB.

**TEST CONFIGURATION**




**TEST PROCEDURE**

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

**TEST RESULTS**

*Remark:*

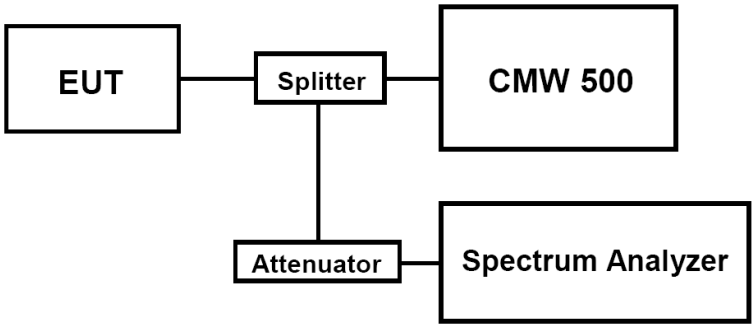
6. *We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 14, LTE FDD Band 66, LTE FDD Band 71; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 14, LTE FDD Band 66, LTE FDD Band 71.*
7. *For E-UTRA Band 2, please refer to Appendix A: Section A.1*
8. *For E-UTRA Band 4, please refer to Appendix B: Section B.1*
9. *For E-UTRA Band 5, please refer to Appendix C: Section C.1*
10. *For E-UTRA Band 12, please refer to Appendix D: Section D.1*
11. *For E-UTRA Band 13, please refer to Appendix E: Section E.1*
12. *For E-UTRA Band 14, please refer to Appendix F: Section F.1*
13. *For E-UTRA Band 66, please refer to Appendix G: Section G.1*
14. *For E-UTRA Band 71, please refer to Appendix H: Section H.1*

## 4.3 Occupied Bandwidth and Emission Bandwidth

**LIMIT**

N/A

**TEST CONFIGURATION**




**TEST PROCEDURE**

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at low, middle and high channel in each band. The -26dBc Emission bandwidth was also measured and recorded.
Set RBW was set to about 1% of emission BW, VBW≥3 times RBW.
-26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

**TEST RESULTS**

*Remark:*
*1.We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 14, LTE FDD Band 66, LTE FDD Band 71; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 14, LTE FDD Band 66, LTE FDD Band 71.*
*2.For E-UTRA Band 2, please refer to Appendix A: Section A.3*
*3..For E-UTRA Band 4, please refer to Appendix B: Section B.3*
*4.For E-UTRA Band 5, please refer to Appendix C: Section C.3*
*5.For E-UTRA Band 12, please refer to Appendix D: Section D.3*
*6.For E-UTRA Band 13, please refer to Appendix E: Section E.3*
*7.For E-UTRA Band 14, please refer to Appendix F: Section F.3*
*8.For E-UTRA Band 66, please refer to Appendix G: Section G.3*
*9.For E-UTRA Band 71, please refer to Appendix H: Section H.3*

## 4.4 Band Edge compliance

**LIMIT**

For LTE FDD Band 2:Per FCC § 24.238 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 + 10log(P) dB.

For LTE FDD Band 4: Per § 27.53(h): For operations in the 1710 – 1755 MHz and 2110 – 2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

For LTE FDD Band 5:Per FCC § 22.917 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 + 10log(P) dB.

For LTE FDD Band 12: Per § 27.53 (g): For operations in the 698 – 746 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.

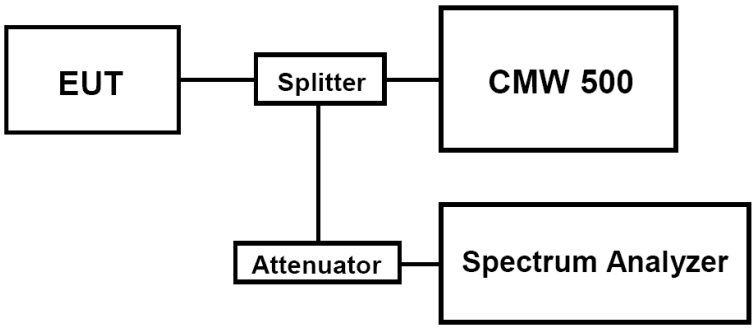
For LTE FDD Band 13: Per § 27.53 (c): For operations in the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following: On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

For LTE FDD Band 14: Per 90.543(e):(1) On all frequencies between 788-798MHz and 758-768 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.
(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.
(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758MHz, by at least 43 + 10 log (P) dB.

For LTE FDD Band 66: Per § 27.53(h): For operations in the 1710 – 1780 MHz and 2110 – 2200 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

For LTE FDD Band 71: Per § 27.53(g):For operations in the 600 MHz band and the 698-746 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. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

## TEST CONFIGURATION




## TEST PROCEDURE

1. The transmitter output port was connected to base station.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator, the path loss was compensated to the results for each measurement.
3. Set EUT at maximum power through base station.
4. Select lowestand highest channels for each band and different modulation.
5. Measure Band edge using RMS (Average) detector by spectrum

**TEST RESULTS**

*Remark:*
*6.We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 14, LTE FDD Band 66, LTE FDD Band 71; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 14, LTE FDD Band 66, LTE FDD Band 71.*
*7.For E-UTRA Band 2, please refer to Appendix A: Section A.4*
*8.For E-UTRA Band 4, please refer to Appendix B: Section B.4*
*9.For E-UTRA Band 5, please refer to Appendix C: Section C.4*
*10.For E-UTRA Band 12, please refer to Appendix D: Section D.4*
*11.For E-UTRA Band 13, please refer to Appendix E: Section E.4*
*12.For E-UTRA Band 14, please refer to Appendix F: Section F.4*
*13.For E-UTRA Band 66, please refer to Appendix G: Section G.4*
*14.For E-UTRA Band 71, please refer to Appendix H: Section H.4*

## 1.1 Spurious Emssion on Antenna Port

**LIMIT**

For LTE FDD Band 2:Per FCC § 24.238 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 + 10log(P) dB.

For LTE FDD Band 4: Per § 27.53(h): For operations in the 1710 – 1755 MHz and 2110 – 2155 MHz bands, the power of any emission outside a licensee’ s frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

For LTE FDD Band 5:Per FCC § 22.917 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 + 10log(P) dB.

For LTE FDD Band 12: Per § 27.53 (g): For operations in the 698 – 746 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.

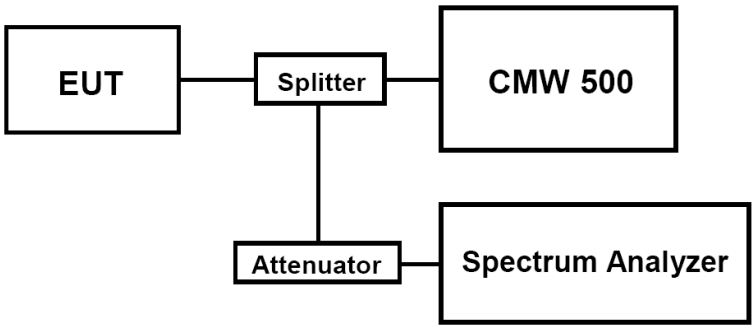
For LTE FDD Band 13: Per §27.53 (c): For operations in the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following: On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
Per §27.53 (f): For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

For LTE FDD Band 14: Per 90.543(e):(1) On all frequencies between 788-798MHz and 758-768 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.
(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.
(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758MHz, by at least 43 + 10 log (P) dB.
For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

For LTE FDD Band 66: Per § 27.53(h): For operations in the 1710 – 1780 MHz and 2110 – 2200 MHz bands, the power of any emission outside a licensee’ s frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

For LTE FDD Band 71: Per § 27.53(g):For operations in the 600 MHz band and the 698-746 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. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

## TEST CONFIGURATION




## TEST PROCEDURE

The EUT was setup according to TIA-603-E

a. Place the EUT on a bench and set it in transmitting mode.
b. Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMW 500 by a Directional Couple.
c. EUT Communicate with CMW 500, then select a channel for testing.
d. Add a correction factor to the display of spectrum, and then test.
e. The resolution bandwidth of the spectrum analyzer was setsufficient scans were taken to show the out of band Emission if any up to$10^{th}$ harmonic.
f. Please refer to following tables for test antenna conducted emissions.

| Working Frequency | Sub range (GHz) | RBW | VBW | Sweep time (s) |
|---|---|---|---|---|
| LTE FDD Band 2 | 0.000009~0.000015 | 1KHz | 3KHz | Auto |
| | 0.000015~0.03 | 10KHz | 30KHz | Auto |
| | 0.03~26 | 1 MHz | 3 MHz | Auto |
| LTE FDD Band 4 | 0.000009~0.000015 | 1KHz | 3KHz | Auto |
| | 0.000015~0.03 | 10KHz | 30KHz | Auto |
| | 0.03~26 | 1 MHz | 3 MHz | Auto |
| LTE FDD Band 5 | 0.000009~0.000015 | 1KHz | 3KHz | Auto |
| | 0.000015~0.03 | 10KHz | 30KHz | Auto |
| | 0.03~26 | 1 MHz | 3 MHz | Auto |
| LTE FDD Band 12 | 0.000009~0.000015 | 1KHz | 3KHz | Auto |
| | 0.000015~0.03 | 10KHz | 30KHz | Auto |
| | 0.03~26 | 1 MHz | 3 MHz | Auto |
| LTE FDD Band 13 | 0.000009~0.000015 | 1KHz | 3KHz | Auto |
| | 0.000015~0.03 | 10KHz | 30KHz | Auto |
| | 0.03~26 | 1 MHz | 3 MHz | Auto |
| LTE FDD Band 14 | 0.000009~0.000015 | 1KHz | 3KHz | Auto |
| | 0.000015~0.03 | 10KHz | 30KHz | Auto |
| | 0.03~26 | 1 MHz | 3 MHz | Auto |
| LTE FDD Band 66 | 0.000009~0.000015 | 1KHz | 3KHz | Auto |
| | 0.000015~0.03 | 10KHz | 30KHz | Auto |
| | 0.03~26.5 | 1 MHz | 3 MHz | Auto |
| LTE FDD Band 77 | 0.000009~0.000015 | 1KHz | 3KHz | Auto |
| | 0.000015~0.03 | 10KHz | 30KHz | Auto |
| | 0.03~26 | 1 MHz | 3 MHz | Auto |

**TEST RESULTS**

*Remark:*
*1.We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 14, LTE FDD Band 66, LTE FDD Band 71; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 14, LTE FDD Band 66, LTE FDD Band 71.*
*2.For E-UTRA Band 2, please refer to Appendix A: Section A.5*
*3..For E-UTRA Band 4, please refer to Appendix B: Section B.5*
*4.For E-UTRA Band 5, please refer to Appendix C: Section C.5*
*5.For E-UTRA Band 12, please refer to Appendix D: Section D.5*
*6.For E-UTRA Band 13, please refer to Appendix E: Section E.5*
*7.For E-UTRA Band 14, please refer to Appendix F: Section F.5*
*8.For E-UTRA Band 66, please refer to Appendix G: Section G.5*
*9.For E-UTRA Band 71, please refer to Appendix H: Section H.5*

## 4.5 Radiated Spurious Emssion

**LIMIT**

For LTE FDD Band 2:Per FCC §24.238 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 + 10log(P) dB.

For LTE FDD Band 4: Per §27.53(h): For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

For LTE FDD Band 5:Per FCC §22.917 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 + 10log(P) dB.

For LTE FDD Band 12: Per §27.53 (g): For operations in the 698–746 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.

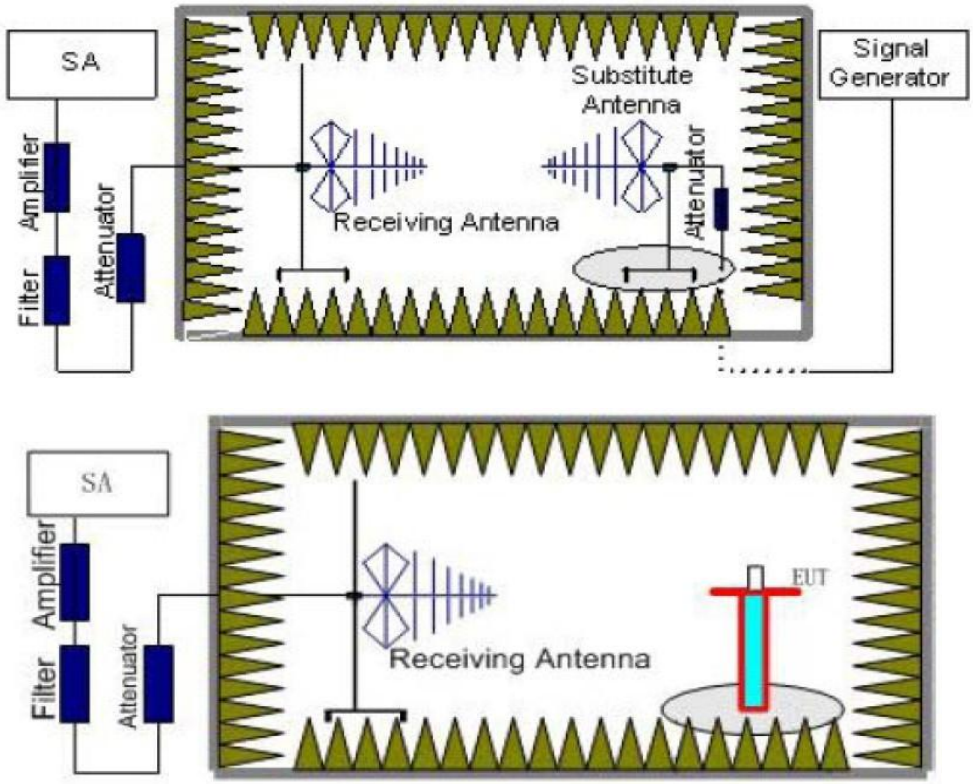
For LTE FDD Band 13: Per §27.53 (c): For operations in the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following: On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
Per §27.53 (f): For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

For LTE FDD Band 14: Per 90.543(e):(1) On all frequencies between 788-798MHz and 758-768 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.
(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.
(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758MHz, by at least 43 + 10 log (P) dB.
Per §90.543 (f):For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

For LTE FDD Band 66: Per §27.53(h): For operations in the 1710–1780 MHz and 2110–2200 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

For LTE FDD Band 71: Per §27.53(g):For operations in the 600 MHz band and the 698-746 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. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

**TEST CONFIGURATION**



## TEST PROCEDURE

1. EUT was placed on a 1.50 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.50m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test.Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz, And the maximum value of the receiver should be recorded as ($P_r$).
4. The EUT shall be replaced by a substitution antenna.In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power ($P_{Mea}$) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded ($P_r$). The power of signal source ($P_{Mea}$) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss ($P_{cl}$) ,the Substitution Antenna Gain ($G_a$) and the Amplifier Gain ($P_{Ag}$) should be recorded after test.
   The measurement results are obtained as described below:
   Power(EIRP)=$P_{Mea}$+ $P_{Ag}$ - $P_{cl}$ + $G_a$
6. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
7. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15dBi.
8. In order to make sure test results more clearly,we set frequency range and sweep time for difference frequency range as follows table:

| Working Frequency | Subrange (GHz) | RBW | VBW | Sweep time (s) |
|---|---|---|---|---|
| LTE FDD Band 2 | 0.00009~0.15 | 1KHz | 3KHz | 30 |
| | 0.00015~0.03 | 10KHz | 30KHz | 10 |
| | 0.03~1 | 100KHz | 300KHz | 10 |
| | 1~2 | 1 MHz | 3 MHz | 2 |
| | 2~5 | 1 MHz | 3 MHz | 3 |
| | 5~8 | 1 MHz | 3 MHz | 3 |
| | 8~11 | 1 MHz | 3 MHz | 3 |
| | 11~14 | 1 MHz | 3 MHz | 3 |
| | 14~18 | 1 MHz | 3 MHz | 3 |
| | 18~20 | 1 MHz | 3 MHz | 2 |
| LTE FDD Band 4 | 0.00009~0.15 | 1KHz | 3KHz | 30 |
| | 0.00015~0.03 | 10KHz | 30KHz | 10 |
| | 0.03~1 | 100KHz | 300KHz | 10 |
| | 1~2 | 1 MHz | 3 MHz | 2 |
| | 2~5 | 1 MHz | 3 MHz | 3 |
| | 5~8 | 1 MHz | 3 MHz | 3 |
| | 8~11 | 1 MHz | 3 MHz | 3 |
| | 11~14 | 1 MHz | 3 MHz | 3 |
| | 14~18 | 1 MHz | 3 MHz | 3 |
| LTE FDD Band 5 | 0.00009~0.15 | 1KHz | 3KHz | 30 |
| | 0.00015~0.03 | 10KHz | 30KHz | 10 |
| | 0.03~1 | 100KHz | 300KHz | 10 |
| | 1~2 | 1 MHz | 3 MHz | 2 |
| | 2~5 | 1 MHz | 3 MHz | 3 |
| | 5~8 | 1 MHz | 3 MHz | 3 |
| | 8~9 | 1 MHz | 3 MHz | 3 |
| LTE FDD Band 12 | 0.00009~0.15 | 1KHz | 3KHz | 30 |
| | 0.00015~0.03 | 10KHz | 30KHz | 10 |
| | 0.03~1 | 100KHz | 300KHz | 10 |
| | 1~2 | 1 MHz | 3 MHz | 2 |
| | 2~5 | 1 MHz | 3 MHz | 3 |
| | 5~8 | 1 MHz | 3 MHz | 3 |
| LTE FDD Band 13 | 0.00009~0.15 | 1KHz | 3KHz | 30 |
| | 0.00015~0.03 | 10KHz | 30KHz | 10 |
| | 0.03~1 | 100KHz | 300KHz | 10 |
| | 1~2 | 1 MHz | 3 MHz | 2 |
| | 2~5 | 1 MHz | 3 MHz | 3 |
| | 5~8 | 1 MHz | 3 MHz | 3 |
| LTE FDD Band 14 | 0.00009~0.15 | 1KHz | 3KHz | 30 |
| | 0.00015~0.03 | 10KHz | 30KHz | 10 |
| | 0.03~1 | 100KHz | 300KHz | 10 |
| | 1~2 | 1 MHz | 3 MHz | 2 |
| | 2~5 | 1 MHz | 3 MHz | 3 |
| | 5~8 | 1 MHz | 3 MHz | 3 |
| LTE FDD Band 66 | 0.00009~0.15 | 1KHz | 3KHz | 30 |
| | 0.00015~0.03 | 10KHz | 30KHz | 10 |
| | 0.03~1 | 100KHz | 300KHz | 10 |
| | 1~2 | 1 MHz | 3 MHz | 2 |
| | 2~5 | 1 MHz | 3 MHz | 3 |
| | 5~8 | 1 MHz | 3 MHz | 3 |
| | 8~11 | 1 MHz | 3 MHz | 3 |
| | 11~14 | 1 MHz | 3 MHz | 3 |
| | 14~18 | 1 MHz | 3 MHz | 3 |
| LTE FDD Band 71 | 0.00009~0.15 | 1KHz | 3KHz | 30 |
| | 0.00015~0.03 | 10KHz | 30KHz | 10 |
| | 0.03~1 | 100KHz | 300KHz | 10 |
| | 1~2 | 1 MHz | 3 MHz | 2 |
| | 2~5 | 1 MHz | 3 MHz | 3 |
| | 5~7 | 1 MHz | 3 MHz | 3 |

| Frequency | Channel | Frequency Range | Verdict |
|---|---|---|---|
| LTE FDD Band 2 | Low | 9KHz -20GHz | PASS |
| | Middle | 9KHz -20GHz | PASS |
| | High | 9KHz -20GHz | PASS |
| LTE FDD Band 4 | Low | 9KHz -18GHz | PASS |
| | Middle | 9KHz -18GHz | PASS |
| | High | 9KHz -18GHz | PASS |
| LTE FDD Band 5 | Low | 9KHz -9GHz | PASS |
| | Middle | 9KHz -9GHz | PASS |
| | High | 9KHz -9GHz | PASS |
| LTE FDD Band 12 | Low | 9KHz -8GHz | PASS |
| | Middle | 9KHz -8GHz | PASS |
| | High | 9KHz -8GHz | PASS |
| LTE FDD Band 13 | Low | 9KHz -8GHz | PASS |
| | Middle | 9KHz -8GHz | PASS |
| | High | 9KHz -8GHz | PASS |
| LTE FDD Band 14 | Low | 9KHz -8GHz | PASS |
| | Middle | 9KHz -8GHz | PASS |
| | High | 9KHz -8GHz | PASS |
| LTE FDD Band 66 | Low | 9KHz -18GHz | PASS |
| | Middle | 9KHz -18GHz | PASS |
| | High | 9KHz -18GHz | PASS |
| LTE FDD Band 71 | Low | 9KHz -7GHz | PASS |
| | Middle | 9KHz -7GHz | PASS |
| | High | 9KHz -7GHz | PASS |

**TEST RESULTS**

*Remark:*
*1. We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band*
*2. LTE FDD Band 4; recorded worst case for each Channel Bandwidth of LTE FDD Band 4.*
*3. We were not recorded other points as values lower than limits.*
*4. Power(EIRP)=$P_{Mea}$+ $P_{Ag}$ - $P_{cl}$ + $G_a$*
*5. Margin = EIRP - Limit*

*LTE FDD Band 2_Channel Bandwidth 20MHz_QPSK_ Low Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3715.0 | -39.43 | 5.26 | 3.00 | 9.88 | -34.81 | -13.00 | -21.81 | H |
| 5572.5 | -46.31 | 6.11 | 3.00 | 11.36 | -41.06 | -13.00 | -28.06 | H |
| 3715.0 | -30.02 | 5.26 | 3.00 | 9.88 | -25.40 | -13.00 | -12.40 | V |
| 5572.5 | -36.86 | 6.11 | 3.00 | 11.36 | -31.61 | -13.00 | -18.61 | V |

*LTE FDD Band 2_Channel Bandwidth 20MHz_QPSK_ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3720.0 | -38.07 | 5.32 | 3.00 | 10.03 | -33.36 | -13.00 | -20.36 | H |
| 5580.0 | -45.32 | 6.19 | 3.00 | 11.41 | -40.10 | -13.00 | -27.10 | H |
| 3720.0 | -30.32 | 5.32 | 3.00 | 10.03 | -25.61 | -13.00 | -12.61 | V |
| 5580.0 | -34.96 | 6.19 | 3.00 | 11.41 | -29.74 | -13.00 | -16.74 | V |

*LTE FDD Band 2_Channel Bandwidth 20MHz_QPSK_ High Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3800.0 | -37.52 | 5.36 | 3.00 | 9.62 | -33.26 | -13.00 | -20.26 | H |
| 5700.0 | -43.54 | 6.24 | 3.00 | 11.46 | -38.32 | -13.00 | -25.32 | H |
| 3800.0 | -29.69 | 5.36 | 3.00 | 9.62 | -25.43 | -13.00 | -12.43 | V |
| 5700.0 | -35.99 | 6.24 | 3.00 | 11.46 | -30.77 | -13.00 | -17.77 | V |

*LTE FDD Band 2_Channel Bandwidth 20MHz_16QAM _ Low Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3715.0 | -41.15 | 5.26 | 3.00 | 9.88 | -36.53 | -13.00 | -23.53 | H |
| 5572.5 | -48.71 | 6.11 | 3.00 | 11.36 | -43.46 | -13.00 | -30.46 | H |
| 3715.0 | -32.29 | 5.26 | 3.00 | 9.88 | -27.67 | -13.00 | -14.67 | V |
| 5572.5 | -39.53 | 6.11 | 3.00 | 11.36 | -34.28 | -13.00 | -21.28 | V |

*LTE FDD Band 2_Channel Bandwidth 20MHz_16QAM _ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3720.0 | -40.49 | 5.32 | 3.00 | 10.03 | -35.78 | -13.00 | -22.78 | H |
| 5580.0 | -48.64 | 6.19 | 3.00 | 11.41 | -43.42 | -13.00 | -30.42 | H |
| 3720.0 | -31.77 | 5.32 | 3.00 | 10.03 | -27.06 | -13.00 | -14.06 | V |
| 5580.0 | -41.45 | 6.19 | 3.00 | 11.41 | -36.23 | -13.00 | -23.23 | V |

*LTE FDD Band 2_Channel Bandwidth 20MHz_16QAM _ High Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3800.0 | -41.83 | 5.36 | 3.00 | 9.62 | -37.57 | -13.00 | -24.57 | H |
| 5700.0 | -47.38 | 6.24 | 3.00 | 11.46 | -42.16 | -13.00 | -29.16 | H |
| 3800.0 | -32.26 | 5.36 | 3.00 | 9.62 | -28.00 | -13.00 | -15.00 | V |
| 5700.0 | -40.27 | 6.24 | 3.00 | 11.46 | -35.05 | -13.00 | -22.05 | V |

*LTE FDD Band 4_Channel Bandwidth 20MHz_QPSK_ Low Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3440.0 | -43.25 | 4.62 | 3.00 | 9.81 | -38.06 | -13.00 | -25.06 | H |
| 5160.0 | -47.43 | 5.94 | 3.00 | 10.86 | -42.51 | -13.00 | -29.51 | H |
| 3440.0 | -34.63 | 4.62 | 3.00 | 9.81 | -29.44 | -13.00 | -16.44 | V |
| 5160.0 | -40.85 | 5.94 | 3.00 | 10.86 | -35.93 | -13.00 | -22.93 | V |

*LTE FDD Band 4_Channel Bandwidth 20MHz_QPSK_ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3465.0 | -41.82 | 4.63 | 3.00 | 9.84 | -36.61 | -13.00 | -23.61 | H |
| 5197.5 | -47.46 | 5.94 | 3.00 | 10.86 | -42.54 | -13.00 | -29.54 | H |
| 3465.0 | -35.01 | 4.63 | 3.00 | 9.84 | -29.80 | -13.00 | -16.80 | V |
| 5197.5 | -39.51 | 5.94 | 3.00 | 10.86 | -34.59 | -13.00 | -21.59 | V |

*LTE FDD Band 4_Channel Bandwidth 20MHz_QPSK_ High Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3490.0 | -42.40 | 4.65 | 3.00 | 9.90 | -37.15 | -13.00 | -24.15 | H |
| 5235.0 | -45.31 | 5.95 | 3.00 | 10.91 | -40.35 | -13.00 | -27.35 | H |
| 3490.0 | -34.29 | 4.65 | 3.00 | 9.90 | -29.04 | -13.00 | -16.04 | V |
| 5235.0 | -39.81 | 5.95 | 3.00 | 10.91 | -34.85 | -13.00 | -21.85 | V |

*LTE FDD Band 4_Channel Bandwidth 20MHz_16QAM _ Low Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3440.0 | -44.80 | 4.62 | 3.00 | 9.81 | -39.61 | -13.00 | -26.61 | H |
| 5160.0 | -49.95 | 5.94 | 3.00 | 10.86 | -45.03 | -13.00 | -32.03 | H |
| 3440.0 | -36.92 | 4.62 | 3.00 | 9.81 | -31.73 | -13.00 | -18.73 | V |
| 5160.0 | -44.40 | 5.94 | 3.00 | 10.86 | -39.48 | -13.00 | -26.48 | V |

*LTE FDD Band 4_Channel Bandwidth 20MHz_16QAM _ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3465.0 | -46.41 | 4.63 | 3.00 | 9.84 | -41.20 | -13.00 | -28.20 | H |
| 5197.5 | -50.05 | 5.94 | 3.00 | 10.86 | -45.13 | -13.00 | -32.13 | H |
| 3465.0 | -38.53 | 4.63 | 3.00 | 9.84 | -33.32 | -13.00 | -20.32 | V |
| 5197.5 | -43.34 | 5.94 | 3.00 | 10.86 | -38.42 | -13.00 | -25.42 | V |

*LTE FDD Band 4_Channel Bandwidth 20MHz_16QAM _ High Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3490.0 | -44.80 | 4.65 | 3.00 | 9.90 | -39.55 | -13.00 | -26.55 | H |
| 5235.0 | -49.93 | 5.95 | 3.00 | 10.91 | -44.97 | -13.00 | -31.97 | H |
| 3490.0 | -37.88 | 4.65 | 3.00 | 9.90 | -32.63 | -13.00 | -19.63 | V |
| 5235.0 | -44.67 | 5.95 | 3.00 | 10.91 | -39.71 | -13.00 | -26.71 | V |

*LTE FDD Band 5_Channel Bandwidth 10MHz_QPSK_ Low Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1658.00 | -39.90 | 3.86 | 3.00 | 8.56 | -35.20 | -13.00 | -22.20 | H |
| 2487.00 | -44.89 | 4.29 | 3.00 | 6.98 | -42.20 | -13.00 | -29.20 | H |
| 1658.00 | -35.42 | 3.86 | 3.00 | 8.56 | -30.72 | -13.00 | -17.72 | V |
| 2487.00 | -38.31 | 4.29 | 3.00 | 6.98 | -35.62 | -13.00 | -22.62 | V |

*LTE FDD Band 5_Channel Bandwidth 10MHz_QPSK_ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1673.00 | -39.47 | 3.90 | 3.00 | 8.58 | -34.79 | -13.00 | -21.79 | H |
| 2509.50 | -47.43 | 4.32 | 3.00 | 6.80 | -44.95 | -13.00 | -31.95 | H |
| 1673.00 | -35.64 | 3.90 | 3.00 | 8.58 | -30.96 | -13.00 | -17.96 | V |
| 2509.50 | -39.37 | 4.32 | 3.00 | 6.80 | -36.89 | -13.00 | -23.89 | V |

*LTE FDD Band 5_Channel Bandwidth 10MHz_QPSK_ High Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1688.00 | -39.83 | 3.91 | 3.00 | 9.06 | -34.68 | -13.00 | -21.68 | H |
| 2532.00 | -46.68 | 4.32 | 3.00 | 6.65 | -44.35 | -13.00 | -31.35 | H |
| 1688.00 | -35.81 | 3.91 | 3.00 | 9.06 | -30.66 | -13.00 | -17.66 | V |
| 2532.00 | -37.92 | 4.32 | 3.00 | 6.65 | -35.59 | -13.00 | -22.59 | V |

*LTE FDD Band 5_Channel Bandwidth 10MHz_16QAM _ Low Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1658.00 | -43.02 | 3.86 | 3.00 | 8.56 | -38.32 | -13.00 | -25.32 | H |
| 2487.00 | -47.92 | 4.29 | 3.00 | 6.98 | -45.23 | -13.00 | -32.23 | H |
| 1658.00 | -36.24 | 3.86 | 3.00 | 8.56 | -31.54 | -13.00 | -18.54 | V |
| 2487.00 | -40.52 | 4.29 | 3.00 | 6.98 | -37.83 | -13.00 | -24.83 | V |

*LTE FDD Band 5_Channel Bandwidth 10MHz_16QAM _ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1673.00 | -41.72 | 3.90 | 3.00 | 8.58 | -37.04 | -13.00 | -24.04 | H |
| 2509.50 | -47.05 | 4.32 | 3.00 | 6.80 | -44.57 | -13.00 | -31.57 | H |
| 1673.00 | -39.23 | 3.90 | 3.00 | 8.58 | -34.55 | -13.00 | -21.55 | V |
| 2509.50 | -39.95 | 4.32 | 3.00 | 6.80 | -37.47 | -13.00 | -24.47 | V |

*LTE FDD Band 5_Channel Bandwidth 10MHz_16QAM _ High Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1688.00 | -44.57 | 3.91 | 3.00 | 9.06 | -39.42 | -13.00 | -26.42 | H |
| 2532.00 | -49.93 | 4.32 | 3.00 | 6.65 | -47.60 | -13.00 | -34.60 | H |
| 1688.00 | -38.87 | 3.91 | 3.00 | 9.06 | -33.72 | -13.00 | -20.72 | V |
| 2532.00 | -41.33 | 4.32 | 3.00 | 6.65 | -39.00 | -13.00 | -26.00 | V |

*LTE FDD Band 12_Channel Bandwidth 10MHz_QPSK _ Low Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1408.00 | -39.12 | 3.71 | 3.00 | 9.02 | -33.81 | -13.00 | -20.81 | H |
| 2112.00 | -45.86 | 4.22 | 3.00 | 8.64 | -41.44 | -13.00 | -28.44 | H |
| 1408.00 | -36.29 | 3.71 | 3.00 | 9.02 | -30.98 | -13.00 | -17.98 | V |
| 2112.00 | -38.44 | 4.22 | 3.00 | 8.64 | -34.02 | -13.00 | -21.02 | V |

*LTE FDD Band 12_Channel Bandwidth 10MHz_QPSK _ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1415.00 | -41.89 | 3.72 | 3.00 | 9.04 | -36.57 | -13.00 | -23.57 | H |
| 2122.50 | -47.67 | 4.23 | 3.00 | 8.60 | -43.30 | -13.00 | -30.30 | H |
| 1415.00 | -35.15 | 3.72 | 3.00 | 9.04 | -29.83 | -13.00 | -16.83 | V |
| 2122.50 | -39.27 | 4.23 | 3.00 | 8.60 | -34.90 | -13.00 | -21.90 | V |

*LTE FDD Band 12_Channel Bandwidth 10MHz_QPSK _ High Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1422.00 | -38.74 | 4.78 | 3.00 | 8.91 | -34.61 | -13.00 | -21.61 | H |
| 2133.00 | -44.19 | 4.25 | 3.00 | 8.26 | -40.18 | -13.00 | -27.18 | H |
| 1422.00 | -35.09 | 4.78 | 3.00 | 8.91 | -30.96 | -13.00 | -17.96 | V |
| 2133.00 | -38.95 | 4.25 | 3.00 | 8.26 | -34.94 | -13.00 | -21.94 | V |

*LTE FDD Band 12_Channel Bandwidth 10MHz_16QAM _ Low Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1408.00 | -39.98 | 3.71 | 3.00 | 9.02 | -34.67 | -13.00 | -21.67 | H |
| 2112.00 | -44.78 | 4.22 | 3.00 | 8.64 | -40.36 | -13.00 | -27.36 | H |
| 1408.00 | -33.37 | 3.71 | 3.00 | 9.02 | -28.06 | -13.00 | -15.06 | V |
| 2112.00 | -39.99 | 4.22 | 3.00 | 8.64 | -35.57 | -13.00 | -22.57 | V |

*LTE FDD Band 12_Channel Bandwidth 10MHz_16QAM _ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1415.00 | -41.15 | 3.72 | 3.00 | 9.04 | -35.83 | -13.00 | -22.83 | H |
| 2122.50 | -47.44 | 4.23 | 3.00 | 8.60 | -43.07 | -13.00 | -30.07 | H |
| 1415.00 | -36.76 | 3.72 | 3.00 | 9.04 | -31.44 | -13.00 | -18.44 | V |
| 2122.50 | -36.01 | 4.23 | 3.00 | 8.60 | -31.64 | -13.00 | -18.64 | V |

*LTE FDD Band 12_Channel Bandwidth 10MHz_16QAM _ High Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1422.00 | -40.77 | 4.78 | 3.00 | 8.91 | -36.64 | -13.00 | -23.64 | H |
| 2133.00 | -46.61 | 4.25 | 3.00 | 8.26 | -42.60 | -13.00 | -29.60 | H |
| 1422.00 | -35.82 | 4.78 | 3.00 | 8.91 | -31.69 | -13.00 | -18.69 | V |
| 2133.00 | -37.96 | 4.25 | 3.00 | 8.26 | -33.95 | -13.00 | -20.95 | V |

*LTE FDD Band 13_Channel Bandwidth 10MHz_QPSK _ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1564.0 | -40.75 | 4.99 | 3.00 | 11.12 | -34.62 | -13.00 | -21.62 | H |
| 2346.0 | -46.17 | 5.85 | 3.00 | 12.02 | -40.00 | -13.00 | -27.00 | H |
| 1564.0 | -33.91 | 4.99 | 3.00 | 11.12 | -27.78 | -13.00 | -14.78 | V |
| 2346.0 | -38.73 | 5.85 | 3.00 | 12.02 | -32.56 | -13.00 | -19.56 | V |

*LTE FDD Band 13_Channel Bandwidth 10MHz_16QAM_ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1564.0 | -43.99 | 4.99 | 3.00 | 11.12 | -37.86 | -13.00 | -24.86 | H |
| 2346.0 | -47.69 | 5.85 | 3.00 | 12.02 | -41.52 | -13.00 | -28.52 | H |
| 1564.0 | -39.18 | 4.99 | 3.00 | 11.12 | -33.05 | -13.00 | -20.05 | V |
| 2346.0 | -42.47 | 5.85 | 3.00 | 12.02 | -36.30 | -13.00 | -23.30 | V |

*LTE FDD Band 14_Channel Bandwidth 10MHz_QPSK _ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1586.0 | -41.74 | 4.92 | 3.00 | 10.45 | -36.21 | -13.00 | -23.21 | H |
| 2379.0 | -47.15 | 5.78 | 3.00 | 12.32 | -40.61 | -13.00 | -27.61 | H |
| 1586.0 | -35.79 | 4.92 | 3.00 | 10.45 | -30.26 | -13.00 | -17.26 | V |
| 2379.0 | -36.76 | 5.78 | 3.00 | 12.32 | -30.22 | -13.00 | -17.22 | V |

*LTE FDD Band 14_Channel Bandwidth 10MHz_16QAM_ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1586.0 | -41.30 | 4.99 | 3.00 | 11.12 | -35.17 | -13.00 | -22.17 | H |
| 2379.0 | -46.03 | 5.85 | 3.00 | 12.02 | -39.86 | -13.00 | -26.86 | H |
| 1586.0 | -33.67 | 4.99 | 3.00 | 11.12 | -27.54 | -13.00 | -14.54 | V |
| 2379.0 | -37.07 | 5.85 | 3.00 | 12.02 | -30.90 | -13.00 | -17.90 | V |

*LTE FDD Band 66_Channel Bandwidth 20MHz_QPSK _ Low Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3440.0 | -41.27 | 4.92 | 3.00 | 10.45 | -35.74 | -13.00 | -22.74 | H |
| 5160.0 | -45.61 | 5.78 | 3.00 | 12.32 | -39.07 | -13.00 | -26.07 | H |
| 3440.0 | -36.14 | 4.92 | 3.00 | 10.45 | -30.61 | -13.00 | -17.61 | V |
| 5160.0 | -38.10 | 5.78 | 3.00 | 12.32 | -31.56 | -13.00 | -18.56 | V |

*LTE FDD Band 66_Channel Bandwidth 20MHz_QPSK _ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3490.0 | -43.78 | 4.99 | 3.00 | 11.12 | -37.65 | -13.00 | -24.65 | H |
| 5235.0 | -47.07 | 5.85 | 3.00 | 12.02 | -40.90 | -13.00 | -27.90 | H |
| 3490.0 | -36.09 | 4.99 | 3.00 | 11.12 | -29.96 | -13.00 | -16.96 | V |
| 5235.0 | -40.99 | 5.85 | 3.00 | 12.02 | -34.82 | -13.00 | -21.82 | V |

*LTE FDD Band 66_Channel Bandwidth 20MHz_QPSK _ High Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3540.0 | -43.15 | 5.12 | 3.00 | 9.98 | -38.29 | -13.00 | -25.29 | H |
| 5310.0 | -47.90 | 5.93 | 3.00 | 11.66 | -42.17 | -13.00 | -29.17 | H |
| 3540.0 | -34.80 | 5.12 | 3.00 | 9.98 | -29.94 | -13.00 | -16.94 | V |
| 5310.0 | -41.10 | 5.93 | 3.00 | 11.66 | -35.37 | -13.00 | -22.37 | V |

*LTE FDD Band 66_Channel Bandwidth 20MHz_16QAM _ Low Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3440.0 | -43.00 | 4.92 | 3.00 | 10.45 | -37.47 | -13.00 | -24.47 | H |
| 5160.0 | -51.52 | 5.78 | 3.00 | 12.32 | -44.98 | -13.00 | -31.98 | H |
| 3440.0 | -37.79 | 4.92 | 3.00 | 10.45 | -32.26 | -13.00 | -19.26 | V |
| 5160.0 | -42.32 | 5.78 | 3.00 | 12.32 | -35.78 | -13.00 | -22.78 | V |

*LTE FDD Band 66_Channel Bandwidth 20MHz_16QAM _ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3490.0 | -45.83 | 4.99 | 3.00 | 11.12 | -39.70 | -13.00 | -26.70 | H |
| 5235.0 | -51.63 | 5.85 | 3.00 | 12.02 | -45.46 | -13.00 | -32.46 | H |
| 3490.0 | -36.63 | 4.99 | 3.00 | 11.12 | -30.50 | -13.00 | -17.50 | V |
| 5235.0 | -44.90 | 5.85 | 3.00 | 12.02 | -38.73 | -13.00 | -25.73 | V |

*LTE FDD Band 66_Channel Bandwidth 20MHz_16QAM _ High Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3540.0 | -44.90 | 5.12 | 3.00 | 9.98 | -40.04 | -13.00 | -27.04 | H |
| 5310.0 | -51.48 | 5.93 | 3.00 | 11.66 | -45.75 | -13.00 | -32.75 | H |
| 3540.0 | -36.57 | 5.12 | 3.00 | 9.98 | -31.71 | -13.00 | -18.71 | V |
| 5310.0 | -42.92 | 5.93 | 3.00 | 11.66 | -37.19 | -13.00 | -24.19 | V |

*LTE FDD Band 71_Channel Bandwidth 20MHz_QPSK _ Low Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1346.0 | -40.55 | 4.73 | 3.00 | 10.42 | -34.86 | -13.00 | -21.86 | H |
| 2019.0 | -47.21 | 5.64 | 3.00 | 12.30 | -40.55 | -13.00 | -27.55 | H |
| 1346.0 | -36.61 | 4.73 | 3.00 | 10.42 | -30.92 | -13.00 | -17.92 | V |
| 2019.0 | -38.20 | 5.64 | 3.00 | 12.30 | -31.54 | -13.00 | -18.54 | V |

*LTE FDD Band 71_Channel Bandwidth 20MHz_QPSK _ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1361.0 | -41.80 | 4.75 | 3.00 | 10.44 | -36.11 | -13.00 | -23.11 | H |
| 2041.5 | -48.11 | 5.66 | 3.00 | 12.33 | -41.44 | -13.00 | -28.44 | H |
| 1361.0 | -33.02 | 4.75 | 3.00 | 10.44 | -27.33 | -13.00 | -14.33 | V |
| 2041.5 | -39.00 | 5.66 | 3.00 | 12.33 | -32.33 | -13.00 | -19.33 | V |

*LTE FDD Band 71_Channel Bandwidth 20MHz_QPSK _ High Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1376.0 | -43.26 | 4.77 | 3.00 | 10.45 | -37.58 | -13.00 | -24.58 | H |
| 2064.0 | -47.06 | 5.69 | 3.00 | 12.36 | -40.39 | -13.00 | -27.39 | H |
| 1376.0 | -33.73 | 4.77 | 3.00 | 10.45 | -28.05 | -13.00 | -15.05 | V |
| 2064.0 | -40.84 | 5.69 | 3.00 | 12.36 | -34.17 | -13.00 | -21.17 | V |

*LTE FDD Band 71_Channel Bandwidth 20MHz_16QAM _ Low Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1346.0 | -43.30 | 4.73 | 3.00 | 10.42 | -37.61 | -13.00 | -24.61 | H |
| 2019.0 | -47.07 | 5.64 | 3.00 | 12.30 | -40.41 | -13.00 | -27.41 | H |
| 1346.0 | -33.27 | 4.73 | 3.00 | 10.42 | -27.58 | -13.00 | -14.58 | V |
| 2019.0 | -41.64 | 5.64 | 3.00 | 12.30 | -34.98 | -13.00 | -21.98 | V |

*LTE FDD Band 71_Channel Bandwidth 20MHz_16QAM _ Middle Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1361.0 | -40.09 | 4.75 | 3.00 | 10.44 | -34.40 | -13.00 | -21.40 | H |
| 2041.5 | -47.10 | 5.66 | 3.00 | 12.33 | -40.43 | -13.00 | -27.43 | H |
| 1361.0 | -35.18 | 4.75 | 3.00 | 10.44 | -29.49 | -13.00 | -16.49 | V |
| 2041.5 | -38.71 | 5.66 | 3.00 | 12.33 | -32.04 | -13.00 | -19.04 | V |

*LTE FDD Band 71_Channel Bandwidth 20MHz_16QAM _ High Channel*

| Frequency (MHz) | $P_{Mea}$ (dBm) | $P_{cl}$ (dB) | Diatance | $G_a$ Antenna Gain(dB) | Peak EIRP (dBm) | Limit (dBm) | Margin (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 1376.0 | -40.47 | 4.77 | 3.00 | 10.45 | -34.79 | -13.00 | -21.79 | H |
| 2064.0 | -46.96 | 5.69 | 3.00 | 12.36 | -40.29 | -13.00 | -27.29 | H |
| 1376.0 | -33.73 | 4.77 | 3.00 | 10.45 | -28.05 | -13.00 | -15.05 | V |
| 2064.0 | -38.03 | 5.69 | 3.00 | 12.36 | -31.36 | -13.00 | -18.36 | V |

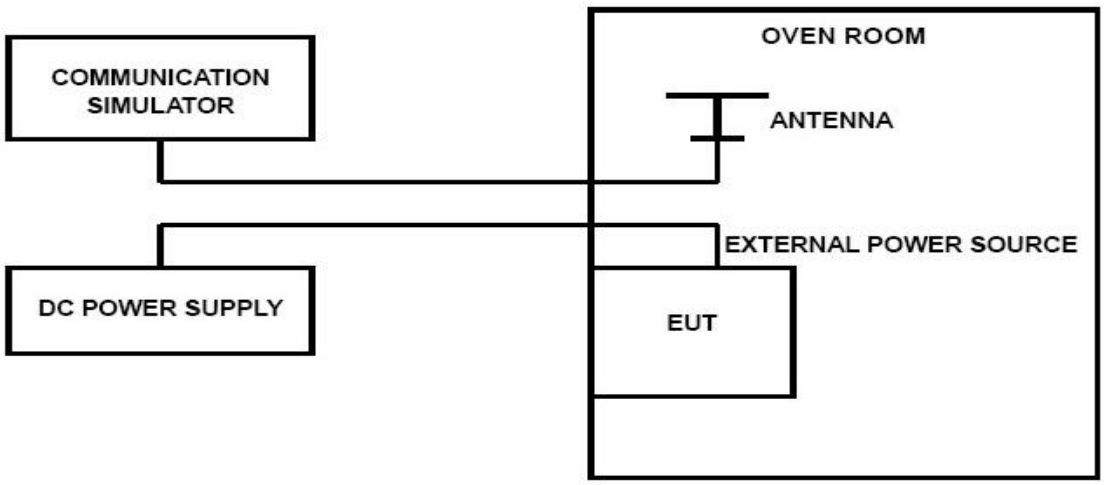
Notes：All channel bandwidth were tested，the report recorded the worst data.

## 4.6 Frequency Stability under Temperature & Voltage Variations

**LIMIT**

According to FCC §2.1055,§22.355, §24.235, §27.54 and§90.213 requirement, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation and should not exceed 2.5ppm.

**TEST CONFIGURATION**




**TEST PROCEDURE**

The EUT was setup according to TIA-603-E

**Frequency Stability Under Temperature Variations:**
In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a “call mode”. This is accomplished with the use of R&S CMW 500 DIGITAL RADIO COMMUNICATION TESTER.
1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -30℃.
3. With the EUT, powered via nominal voltage, connected to the CMW 500 and in a simulated call on middle channel for LTE LTE band 4; measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
4. Repeat the above measurements at 10℃ increments from -30℃ to +50℃. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
5. Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1.5 hours unpowered, to allow any self-heating to stabilize, before continuing.
6. Subject the EUT to overnight soak at +50℃.
7. With the EUT, powered via nominal voltage, connected to the CMW 500 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10 ℃ increments from +50℃ to -30℃. Allow at least 1.5 hours at each temperature, unpowered, before making measurements
9. At all temperature levels hold the temperature to +/- 0.5℃ during the measurement procedure.
**Frequency Stability Under Voltage Variations:**
Set chamber temperature to 20℃. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.
Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, record the maximum frequency change.

**TEST RESULTS**

*Remark:*
*We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 4; recorded worst case for each Channel Bandwidth of LTE FDD Band 4.*

*LTE Band 2, QPSK, 1.4MHz bandwidth (worst case of all bandwidths)*

| LTE FDD Band 2 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | 41 | 0.022 | ±2.50 | PASS |
| 24.0 | 20 | 9 | 0.005 | ±2.50 | PASS |
| 27.6 | 20 | 30 | 0.016 | ±2.50 | PASS |
| 24.0 | -30 | 64 | 0.034 | ±2.50 | PASS |
| 24.0 | -20 | -25 | -0.013 | ±2.50 | PASS |
| 24.0 | -10 | -34 | -0.018 | ±2.50 | PASS |
| 24.0 | 0 | -12 | -0.006 | ±2.50 | PASS |
| 24.0 | 10 | 6 | 0.003 | ±2.50 | PASS |
| 24.0 | 20 | -26 | -0.014 | ±2.50 | PASS |
| 24.0 | 30 | -50 | -0.027 | ±2.50 | PASS |
| 24.0 | 40 | 36 | 0.019 | ±2.50 | PASS |
| 24.0 | 50 | -32 | -0.017 | ±2.50 | PASS |

*LTE Band 2, 16QAM, 1.4MHz bandwidth (worst case of all bandwidths)*

| LTE FDD Band 2 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | -30 | -0.016 | ±2.50 | PASS |
| 24.0 | 20 | 63 | 0.033 | ±2.50 | PASS |
| 27.6 | 20 | 55 | 0.029 | ±2.50 | PASS |
| 24.0 | -30 | 45 | 0.024 | ±2.50 | PASS |
| 24.0 | -20 | 52 | 0.027 | ±2.50 | PASS |
| 24.0 | -10 | 34 | 0.018 | ±2.50 | PASS |
| 24.0 | 0 | 49 | 0.026 | ±2.50 | PASS |
| 24.0 | 10 | 68 | 0.036 | ±2.50 | PASS |
| 24.0 | 20 | -9 | -0.005 | ±2.50 | PASS |
| 24.0 | 30 | 8 | 0.004 | ±2.50 | PASS |
| 24.0 | 40 | 5 | 0.003 | ±2.50 | PASS |
| 24.0 | 50 | -23 | -0.012 | ±2.50 | PASS |

*LTE Band 4, QPSK, 1.4MHz bandwidth (worst case of all bandwidths)*

| LTE FDD Band 4 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | -21 | -0.012 | ±2.50 | PASS |
| 24.0 | 20 | -20 | -0.011 | ±2.50 | PASS |
| 27.6 | 20 | 66 | 0.038 | ±2.50 | PASS |
| 24.0 | -30 | 9 | 0.005 | ±2.50 | PASS |
| 24.0 | -20 | -53 | -0.030 | ±2.50 | PASS |
| 24.0 | -10 | -14 | -0.008 | ±2.50 | PASS |
| 24.0 | 0 | -21 | -0.012 | ±2.50 | PASS |
| 24.0 | 10 | -27 | -0.016 | ±2.50 | PASS |
| 24.0 | 20 | 40 | 0.023 | ±2.50 | PASS |
| 24.0 | 30 | 67 | 0.038 | ±2.50 | PASS |
| 24.0 | 40 | -35 | -0.020 | ±2.50 | PASS |
| 24.0 | 50 | -24 | -0.014 | ±2.50 | PASS |

*LTE Band 4, 16QAM, 1.4MHz bandwidth (worst case of all bandwidths)*

| LTE FDD Band 4 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | 51 | 0.029 | ±2.50 | PASS |
| 24.0 | 20 | -29 | -0.017 | ±2.50 | PASS |
| 27.6 | 20 | -58 | -0.034 | ±2.50 | PASS |
| 24.0 | -30 | 64 | 0.037 | ±2.50 | PASS |
| 24.0 | -20 | 68 | 0.039 | ±2.50 | PASS |
| 24.0 | -10 | -4 | -0.002 | ±2.50 | PASS |
| 24.0 | 0 | 1 | 0.001 | ±2.50 | PASS |
| 24.0 | 10 | 30 | 0.017 | ±2.50 | PASS |
| 24.0 | 20 | -55 | -0.032 | ±2.50 | PASS |
| 24.0 | 30 | -21 | -0.012 | ±2.50 | PASS |
| 24.0 | 40 | 65 | 0.038 | ±2.50 | PASS |
| 24.0 | 50 | 33 | 0.019 | ±2.50 | PASS |

*LTE Band 5, QPSK, 1.4MHz bandwidth(worst case of all bandwidths)*

| LTE FDD Band 5 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | 45 | 0.064 | ±2.50 | PASS |
| 24.0 | 20 | 14 | 0.020 | ±2.50 | PASS |
| 27.6 | 20 | 49 | 0.069 | ±2.50 | PASS |
| 24.0 | -30 | -20 | -0.029 | ±2.50 | PASS |
| 24.0 | -20 | -3 | -0.004 | ±2.50 | PASS |
| 24.0 | -10 | 57 | 0.080 | ±2.50 | PASS |
| 24.0 | 0 | -1 | -0.002 | ±2.50 | PASS |
| 24.0 | 10 | 52 | 0.073 | ±2.50 | PASS |
| 24.0 | 20 | 19 | 0.027 | ±2.50 | PASS |
| 24.0 | 30 | 19 | 0.028 | ±2.50 | PASS |
| 24.0 | 40 | 39 | 0.055 | ±2.50 | PASS |
| 24.0 | 50 | 15 | 0.021 | ±2.50 | PASS |

*LTE Band 5, 16QAM, 1.4MHz bandwidth(worst case of all bandwidths)*

| LTE FDD Band 5 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | -3 | -0.005 | ±2.50 | PASS |
| 24.0 | 20 | 57 | 0.081 | ±2.50 | PASS |
| 27.6 | 20 | 19 | 0.027 | ±2.50 | PASS |
| 24.0 | -30 | 9 | 0.013 | ±2.50 | PASS |
| 24.0 | -20 | -40 | -0.057 | ±2.50 | PASS |
| 24.0 | -10 | 47 | 0.067 | ±2.50 | PASS |
| 24.0 | 0 | -62 | -0.088 | ±2.50 | PASS |
| 24.0 | 10 | -16 | -0.023 | ±2.50 | PASS |
| 24.0 | 20 | -46 | -0.066 | ±2.50 | PASS |
| 24.0 | 30 | 28 | 0.039 | ±2.50 | PASS |
| 24.0 | 40 | 43 | 0.061 | ±2.50 | PASS |
| 24.0 | 50 | 54 | 0.076 | ±2.50 | PASS |

*LTE Band 12, QPSK, 1.4MHz bandwidth (worst case of all bandwidths and modulation type)*

| LTE FDD Band 12 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | -40 | -0.056 | ±2.50 | PASS |
| 24.0 | 20 | 30 | 0.042 | ±2.50 | PASS |
| 27.6 | 20 | -68 | -0.096 | ±2.50 | PASS |
| 24.0 | -30 | 59 | 0.083 | ±2.50 | PASS |
| 24.0 | -20 | 61 | 0.085 | ±2.50 | PASS |
| 24.0 | -10 | 34 | 0.048 | ±2.50 | PASS |
| 24.0 | 0 | 34 | 0.048 | ±2.50 | PASS |
| 24.0 | 10 | 61 | 0.086 | ±2.50 | PASS |
| 24.0 | 20 | 3 | 0.004 | ±2.50 | PASS |
| 24.0 | 30 | -57 | -0.080 | ±2.50 | PASS |
| 24.0 | 40 | -29 | -0.041 | ±2.50 | PASS |
| 24.0 | 50 | -50 | -0.071 | ±2.50 | PASS |

*LTE Band 12, 16QAM, 1.4MHz bandwidth (worst case of all bandwidths and modulation type)*

| LTE FDD Band 12 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | -30 | -0.017 | ±2.50 | PASS |
| 24.0 | 20 | -51 | -0.029 | ±2.50 | PASS |
| 27.6 | 20 | 53 | 0.031 | ±2.50 | PASS |
| 24.0 | -30 | -37 | -0.021 | ±2.50 | PASS |
| 24.0 | -20 | -47 | -0.027 | ±2.50 | PASS |
| 24.0 | -10 | 24 | 0.014 | ±2.50 | PASS |
| 24.0 | 0 | 27 | 0.015 | ±2.50 | PASS |
| 24.0 | 10 | 60 | 0.035 | ±2.50 | PASS |
| 24.0 | 20 | 67 | 0.039 | ±2.50 | PASS |
| 24.0 | 30 | 45 | 0.026 | ±2.50 | PASS |
| 24.0 | 40 | 19 | 0.011 | ±2.50 | PASS |
| 24.0 | 50 | 25 | 0.014 | ±2.50 | PASS |

*LTE Band 13, 5MHz bandwidth, QPSK (worst case of all bandwidths)*

| *LTE FDD Band 13* | | | | | |
|---|---|---|---|---|---|
| *DC Power* | *Temperature (℃)* | *Frequency error(Hz)* | *Frequency error(ppm)* | *Limit (ppm)* | *Verdict* |
| 20.4 | 20 | 30 | 0.038 | 2.50 | PASS |
| 24.0 | 20 | -33 | -0.042 | 2.50 | PASS |
| 27.6 | 20 | 65 | 0.083 | 2.50 | PASS |
| 24.0 | -30 | -16 | -0.020 | 2.50 | PASS |
| 24.0 | -20 | 26 | 0.033 | 2.50 | PASS |
| 24.0 | -10 | 49 | 0.062 | 2.50 | PASS |
| 24.0 | 0 | 31 | 0.040 | 2.50 | PASS |
| 24.0 | 10 | 30 | 0.039 | 2.50 | PASS |
| 24.0 | 20 | -3 | -0.004 | 2.50 | PASS |
| 24.0 | 30 | 11 | 0.014 | 2.50 | PASS |
| 24.0 | 40 | -37 | -0.047 | 2.50 | PASS |
| 24.0 | 50 | -67 | -0.085 | 2.50 | PASS |

*LTE Band 13, 5MHz bandwidth, 16QAM (worst case of all bandwidths)*

| LTE FDD Band 13 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | -56 | -0.032 | 2.50 | PASS |
| 24.0 | 20 | -45 | -0.026 | 2.50 | PASS |
| 27.6 | 20 | -6 | -0.004 | 2.50 | PASS |
| 24.0 | -30 | 67 | 0.038 | 2.50 | PASS |
| 24.0 | -20 | 57 | 0.033 | 2.50 | PASS |
| 24.0 | -10 | -11 | -0.006 | 2.50 | PASS |
| 24.0 | 0 | 30 | 0.017 | 2.50 | PASS |
| 24.0 | 10 | -50 | -0.029 | 2.50 | PASS |
| 24.0 | 20 | -22 | -0.013 | 2.50 | PASS |
| 24.0 | 30 | -1 | -0.001 | 2.50 | PASS |
| 24.0 | 40 | -43 | -0.025 | 2.50 | PASS |
| 24.0 | 50 | -50 | -0.029 | 2.50 | PASS |

*LTE Band 14, QPSK, 5MHz bandwidth (worst case of all bandwidths and modulation type)*

| LTE FDD Band 14 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | 14 | 0.020 | ±1.25 | PASS |
| 24.0 | 20 | -53 | -0.076 | ±1.25 | PASS |
| 27.6 | 20 | 36 | 0.051 | ±1.25 | PASS |
| 24.0 | -30 | -63 | -0.088 | ±1.25 | PASS |
| 24.0 | -20 | -65 | -0.091 | ±1.25 | PASS |
| 24.0 | -10 | 58 | 0.082 | ±1.25 | PASS |
| 24.0 | 0 | 9 | 0.012 | ±1.25 | PASS |
| 24.0 | 10 | 5 | 0.007 | ±1.25 | PASS |
| 24.0 | 20 | -37 | -0.052 | ±1.25 | PASS |
| 24.0 | 30 | 41 | 0.058 | ±1.25 | PASS |
| 24.0 | 40 | -60 | -0.085 | ±1.25 | PASS |
| 24.0 | 50 | 56 | 0.079 | ±1.25 | PASS |

*LTE Band 14, 16QAM, 5MHz bandwidth (worst case of all bandwidths and modulation type)*

| LTE FDD Band 14 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 10.2 | 20 | -53 | -0.075 | ±1.25 | PASS |
| 12 | 20 | 29 | 0.040 | ±1.25 | PASS |
| 13.8 | 20 | -19 | -0.026 | ±1.25 | PASS |
| 12 | -30 | 34 | 0.048 | ±1.25 | PASS |
| 12 | -20 | -66 | -0.093 | ±1.25 | PASS |
| 12 | -10 | 66 | 0.094 | ±1.25 | PASS |
| 12 | 0 | -13 | -0.018 | ±1.25 | PASS |
| 12 | 10 | 11 | 0.015 | ±1.25 | PASS |
| 12 | 20 | -67 | -0.094 | ±1.25 | PASS |
| 12 | 30 | -19 | -0.027 | ±1.25 | PASS |
| 12 | 40 | 42 | 0.060 | ±1.25 | PASS |
| 12 | 50 | -41 | -0.058 | ±1.25 | PASS |

Notes:AFC is locked to a base station

*LTE Band 66, 1.4MHz bandwidth, QPSK (worst case of all bandwidths)*

| LTE FDD Band 66 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | 40 | 0.015 | 2.50 | PASS |
| 24.0 | 20 | 10 | 0.004 | 2.50 | PASS |
| 27.6 | 20 | 44 | 0.017 | 2.50 | PASS |
| 24.0 | -30 | 50 | 0.019 | 2.50 | PASS |
| 24.0 | -20 | -29 | -0.011 | 2.50 | PASS |
| 24.0 | -10 | 17 | 0.007 | 2.50 | PASS |
| 24.0 | 0 | 44 | 0.017 | 2.50 | PASS |
| 24.0 | 10 | -43 | -0.017 | 2.50 | PASS |
| 24.0 | 20 | -35 | -0.014 | 2.50 | PASS |
| 24.0 | 30 | 7 | 0.003 | 2.50 | PASS |
| 24.0 | 40 | 38 | 0.015 | 2.50 | PASS |
| 24.0 | 50 | -6 | -0.002 | 2.50 | PASS |

*LTE Band 66, 1.4MHz bandwidth, 16QAM (worst case of all bandwidths)*

| LTE FDD Band 66 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | 50 | 0.029 | 2.50 | PASS |
| 24.0 | 20 | 68 | 0.039 | 2.50 | PASS |
| 27.6 | 20 | 12 | 0.007 | 2.50 | PASS |
| 24.0 | -30 | -32 | -0.019 | 2.50 | PASS |
| 24.0 | -20 | 62 | 0.036 | 2.50 | PASS |
| 24.0 | -10 | 25 | 0.014 | 2.50 | PASS |
| 24.0 | 0 | -26 | -0.015 | 2.50 | PASS |
| 24.0 | 10 | -10 | -0.006 | 2.50 | PASS |
| 24.0 | 20 | 12 | 0.007 | 2.50 | PASS |
| 24.0 | 30 | -41 | -0.023 | 2.50 | PASS |
| 24.0 | 40 | -18 | -0.010 | 2.50 | PASS |
| 24.0 | 50 | -68 | -0.039 | 2.50 | PASS |

*LTE Band 71, 5MHz bandwidth, QPSK (worst case of all bandwidths)*

| LTE FDD Band 71 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | 4 | 0.006 | 2.50 | PASS |
| 24.0 | 20 | -39 | -0.056 | 2.50 | PASS |
| 27.6 | 20 | 50 | 0.070 | 2.50 | PASS |
| 24.0 | -30 | -53 | -0.075 | 2.50 | PASS |
| 24.0 | -20 | -49 | -0.069 | 2.50 | PASS |
| 24.0 | -10 | 16 | 0.023 | 2.50 | PASS |
| 24.0 | 0 | 30 | 0.042 | 2.50 | PASS |
| 24.0 | 10 | -27 | -0.038 | 2.50 | PASS |
| 24.0 | 20 | 25 | 0.036 | 2.50 | PASS |
| 24.0 | 30 | -56 | -0.080 | 2.50 | PASS |
| 24.0 | 40 | -12 | -0.017 | 2.50 | PASS |
| 24.0 | 50 | 67 | 0.095 | 2.50 | PASS |

*LTE Band 71, 5MHz bandwidth, 16QAM (worst case of all bandwidths)*

| LTE FDD Band 71 | | | | | |
|---|---|---|---|---|---|
| DC Power | Temperature (℃) | Frequency error(Hz) | Frequency error(ppm) | Limit (ppm) | Verdict |
| 20.4 | 20 | -3 | -0.004 | 2.50 | PASS |
| 24.0 | 20 | -51 | -0.072 | 2.50 | PASS |
| 27.6 | 20 | -16 | -0.023 | 2.50 | PASS |
| 24.0 | -30 | 50 | 0.071 | 2.50 | PASS |
| 24.0 | -20 | -57 | -0.080 | 2.50 | PASS |
| 24.0 | -10 | -45 | -0.064 | 2.50 | PASS |
| 24.0 | 0 | -43 | -0.060 | 2.50 | PASS |
| 24.0 | 10 | 35 | 0.049 | 2.50 | PASS |
| 24.0 | 20 | 41 | 0.058 | 2.50 | PASS |
| 24.0 | 30 | 23 | 0.033 | 2.50 | PASS |
| 24.0 | 40 | 55 | 0.078 | 2.50 | PASS |
| 24.0 | 50 | -25 | -0.035 | 2.50 | PASS |

# 5 Test Setup Photos of the EUT

Pleaserefer to separated files for Test Setup Photos of the EUT.

# 6 External Photos of the EUT

Pleaserefer to separated files for External Photos of the EUT.

# 7 Internal Photos of the EUT

Pleaserefer to separated files for Internal Photos of the EUT.

************************End of Report*************************