

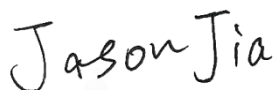
FCC RF Test Report

APPLICANT : Positioning Universal
EQUIPMENT : asset tracking device
BRAND NAME : FJ500M
MODEL NAME : FJ500M
FCC ID : Contains FCC ID :2AHRH-FJ500M
STANDARD : 47 CFR Part 2, 24(E), 27(L), 27(H)
CLASSIFICATION : PCS Licensed Transmitter (PCB)

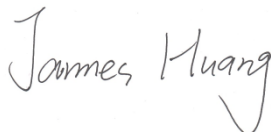
The product was installed a module during the test: M2M DATA MODULE (Model Name: IMA2A, FCC ID: 2AHRH-FJ500M) during test.

The product was received on Apr. 18, 2019 and completely tested on May 08, 2019. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Kunshan) Inc., the test report shall not be reproduced except in full.



Reviewed by: Jason Jia / Supervisor



Approved by: James Huang / Manager



Sporton International (Kunshan) Inc.

**No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China**



TABLE OF CONTENTS

| | |
|--|-----------|
| REVISION HISTORY..... | 3 |
| SUMMARY OF TEST RESULT | 4 |
| 1 GENERAL DESCRIPTION | 5 |
| 1.1 Applicant..... | 5 |
| 1.2 Product Feature of Equipment Under Test..... | 5 |
| 1.3 Product Specification of Equipment Under Test..... | 6 |
| 1.4 Modification of EUT | 6 |
| 1.5 Maximum ERP/EIRP Power | 7 |
| 1.6 Testing Location | 8 |
| 1.7 Applicable Standards..... | 8 |
| 2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST | 9 |
| 2.1 Test Mode..... | 9 |
| 2.2 Connection Diagram of Test System..... | 10 |
| 2.3 Support Unit used in test configuration and system | 10 |
| 2.4 Frequency List of Low/Middle/High Channels | 11 |
| 3 CONDUCTED TEST ITEMS | 13 |
| 3.1 Measuring Instruments | 13 |
| 3.2 Test Setup | 13 |
| 3.3 Test Result of Conducted Test | 13 |
| 3.4 Conducted Output Power and ERP/EIRP | 14 |
| 4 RADIATED TEST ITEMS | 15 |
| 4.1 Measuring Instruments | 15 |
| 4.2 Test Setup | 15 |
| 4.3 Test Result of Radiated Test | 15 |
| 4.4 Radiated Spurious Emission | 16 |
| 5 LIST OF MEASURING EQUIPMENT | 17 |
| 6 UNCERTAINTY OF EVALUATION | 18 |
| APPENDIX A. TEST RESULTS OF CONDUCTED TEST | |
| APPENDIX B. TEST RESULTS OF RADIATED TEST | |
| APPENDIX C. TEST SETUP PHOTOGRAPHS | |



REVISION HISTORY

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|------------|---------|-------------------------|--------------|
| FG941809 | Rev. 01 | Initial issue of report | May 30, 2019 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |



SUMMARY OF TEST RESULT

| Report Section | FCC Rule | Description | Limit | Result | Remark |
|----------------|---|---|-------------------------------------|--------|---|
| 3.4 | §2.1046 | Conducted Output Power | Reporting Only | PASS | - |
| | §27.50(c)(10) | Effective Radiated Power (Band 12) | ERP < 3 Watt | PASS | - |
| | §24.232(c) | Equivalent Isotropic Radiated Power (Band 2) | EIRP < 2Watt | PASS | - |
| | §27.50(d)(4) | Equivalent Isotropic Radiated Power (Band 4) | EIRP < 1Watt | PASS | |
| - | §24.232(d) | Peak-to-Average Ratio | <13 dB | PASS | 1 |
| - | §2.1049 | Occupied Bandwidth | Reporting Only | PASS | 1 |
| - | §2.1051 §24.238(a) §27.53(g) §27.53(h) | Conducted Band Edge Measurement (Band 2) (Band 4) (Band 12) | < 43+10log ₁₀ (P[Watts]) | PASS | 1 |
| - | §2.1051 §24.238(a) §27.53(g) §27.53(h) | Conducted Spurious Emission (Band 2) (Band 4) (Band 12) | < 43+10log ₁₀ (P[Watts]) | PASS | 1 |
| - | §2.1055 §24.235 §27.54 | Frequency Stability Temperature & Voltage | Within Authorized Band | PASS | 1 |
| 4.4 | §2.1053 §24.238(a) §27.53(g) §27.53(h) | Radiated Spurious Emission (Band 2) (Band 4) (Band 12) | < 43+10log ₁₀ (P[Watts]) | PASS | Under limit 21.88 dB at 3474.000 MHz |

Remark 1: The conducted test items were leverage from module RF report which can refer to Report No. "FG851701".



1 General Description

1.1 Applicant

Positioning Universal

4660 La Jolla Village Dr Suite #1100, San Diego, CA92122

1.2 Product Feature of Equipment Under Test

| Product Feature | |
|--|-------------------------------|
| Equipment | asset tracking device |
| Brand Name | FJ500M |
| Model Name | FJ500M |
| FCC ID | Contains FCC ID :2AHRH-FJ500M |
| EUT supports Radios application | LTE Category M1 and GNSS |
| SN Code | JKP3A191000028 |
| HW Version | v1.0 |
| SW Version | 6300 |
| EUT Stage | Production Unit |

1.3 Product Specification of Equipment Under Test

| Standards-related Product Specification | |
|---|--|
| Tx Frequency | LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 12 : 699.7 MHz ~ 715.3 MHz |
| Rx Frequency | LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 12 : 729.7 MHz ~ 745.3 MHz |
| Bandwidth | LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz |
| Maximum Output Power to Antenna | LTE Band 2 : 23.84 dBm LTE Band 4 : 23.68 dBm LTE Band 12 : 23.77 dBm |
| Antenna Gain | LTE Band 2 : 1.34 dBi LTE Band 4 : 0.47 dBi LTE Band 12 : 0.63 dBi |
| Type of Modulation | QPSK / 16QAM |

1.4 Modification of EUT

No modifications are made to the EUT during all test items.



1.5 Maximum ERP/EIRP Power

| LTE Band 2 | | QPSK | | | 16QAM | | |
|-------------|-----------------------|------------------------------|---------------------------|-----------------|------------------------------|---------------------------|-----------------|
| BW (MHz) | Frequency Range (MHz) | Emission Designator (99%OBW) | Frequency Tolerance (ppm) | Maximum EIRP(W) | Emission Designator (99%OBW) | Frequency Tolerance (ppm) | Maximum EIRP(W) |
| 1.4 | 1850.7 ~ 1909.3 | - | - | 0.3289 | - | - | 0.2547 |
| 3 | 1851.5 ~ 1908.5 | - | - | 0.3282 | - | - | 0.2410 |
| 5 | 1852.5 ~ 1907.5 | - | - | 0.3076 | - | - | 0.3296 |
| 10 | 1855.0 ~ 1905.0 | - | - | 0.3083 | - | - | 0.3289 |
| 15 | 1857.5 ~ 1902.5 | - | - | 0.3192 | - | - | 0.3273 |
| 20 | 1860.0 ~ 1900.0 | - | - | 0.3221 | - | - | 0.3266 |
| LTE Band 4 | | QPSK | | | 16QAM | | |
| BW (MHz) | Frequency Range (MHz) | Emission Designator (99%OBW) | Frequency Tolerance (ppm) | Maximum EIRP(W) | Emission Designator (99%OBW) | Frequency Tolerance (ppm) | Maximum EIRP(W) |
| 1.4 | 1710.7 ~ 1754.3 | - | - | 0.2600 | - | - | 0.1995 |
| 3 | 1711.5 ~ 1753.5 | - | - | 0.2404 | - | - | 0.1903 |
| 5 | 1712.5 ~ 1752.5 | - | - | 0.2323 | - | - | 0.2466 |
| 10 | 1715.0 ~ 1750.0 | - | - | 0.2307 | - | - | 0.2500 |
| 15 | 1717.5 ~ 1747.5 | - | - | 0.2438 | - | - | 0.2570 |
| 20 | 1720.0 ~ 1745.0 | - | - | 0.2382 | - | - | 0.2576 |
| LTE Band 12 | | QPSK | | | 16QAM | | |
| BW (MHz) | Frequency Range (MHz) | Emission Designator (99%OBW) | Frequency Tolerance (ppm) | Maximum ERP(W) | Emission Designator (99%OBW) | Frequency Tolerance (ppm) | Maximum ERP(W) |
| 1.4 | 699.7 ~ 715.3 | - | - | 0.1596 | - | - | 0.1276 |
| 3 | 700.5 ~ 714.5 | - | - | 0.1535 | - | - | 0.1614 |
| 5 | 701.5 ~ 713.5 | - | - | 0.1629 | - | - | 0.1648 |
| 10 | 704.0 ~ 711.0 | - | - | 0.1679 | - | - | 0.1667 |

1.6 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

| | | | |
|---------------------------|--|----------------------------|---------------------------------------|
| Test Firm | Sporton International (Kunshan) Inc. | | |
| Test Site Location | No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-0512-57900158 FAX : +86-0512-57900958 | | |
| Test Site No. | Sporton Site No. | FCC Designation No. | FCC Test Firm Registration No. |
| | 03CH06-KS | CN1257 | 314309 |

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR Part 2, 24(E), 27(L), 27(H)
- ♦ ANSI C63.26-2015
- ♦ FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Configuration of Equipment Under Test

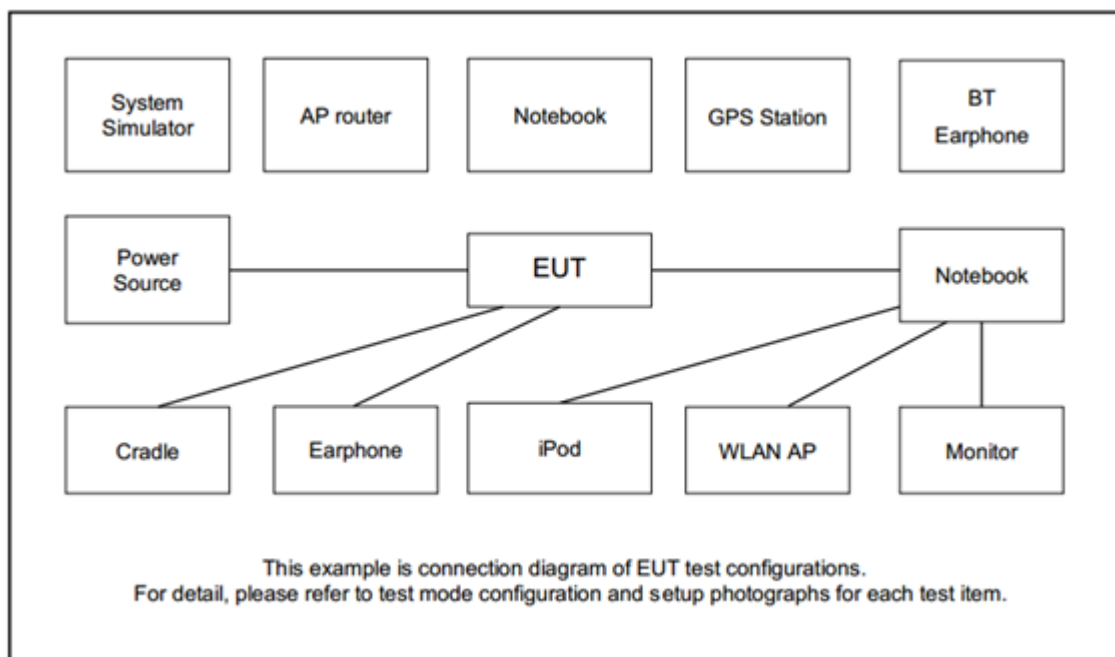
2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

| Test Items | Band | Bandwidth (MHz) | | | | | | Modulation | | RB # | | | Test Channel | | |
|----------------------------|--|-----------------|---|---|----|----|----|------------|-------|------|------|------|--------------|---|---|
| | | 1.4 | 3 | 5 | 10 | 15 | 20 | QPSK | 16QAM | 1 | Half | Full | L | M | H |
| Max. Output Power | 2 | v | v | v | v | v | v | v | v | v | v | v | v | v | v |
| | 4 | v | v | v | v | v | v | v | v | v | v | v | v | v | v |
| | 12 | v | v | v | v | - | - | v | v | v | v | v | v | v | v |
| E.R.P / E.I.R.P | 2 | v | v | v | v | v | v | v | v | v | | | v | v | v |
| | 4 | v | v | v | v | v | v | v | v | v | | | v | v | v |
| | 12 | v | v | v | v | - | - | v | v | v | | | v | v | v |
| Radiated Spurious Emission | 2 | Worst Case | | | | | | | | | | | v | v | v |
| | 4 | Worst Case | | | | | | | | | | | v | v | v |
| | 12 | Worst Case | | | | | | | | | | | v | v | v |
| Note | <div>1. The mark “v “ means that this configuration is chosen for testing</div> <div>2. The mark “-“ means that this bandwidth is not supported.</div> <div>3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.</div> <div>4. The maximum RB size of LTE Cat M1 is 6RB for each LTE band and bandwidth, for conducted power and ERP/EIRP we test all the bandwidth, for the other conducted test items we only test 5MHz Bandwidth.</div> | | | | | | | | | | | | | | |

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

| Item | Equipment | Trade Name | Model No. | FCC ID | Data Cable | Power Cord |
|------|------------------|------------|-----------|--------|------------|-------------------|
| 1. | LTE Base Station | Anritsu | MT8820C | N/A | N/A | Unshielded, 1.8 m |

2.4 Frequency List of Low/Middle/High Channels

| LTE Band 2 Channel and Frequency List | | | | |
|---------------------------------------|------------------------|--------|--------|---------|
| BW [MHz] | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 20 | Channel | 18700 | 18900 | 19100 |
| | Frequency | 1860 | 1880 | 1900 |
| 15 | Channel | 18675 | 18900 | 19125 |
| | Frequency | 1857.5 | 1880 | 1902.5 |
| 10 | Channel | 18650 | 18900 | 19150 |
| | Frequency | 1855 | 1880 | 1905 |
| 5 | Channel | 18625 | 18900 | 19175 |
| | Frequency | 1852.5 | 1880 | 1907.5 |
| 3 | Channel | 18615 | 18900 | 19185 |
| | Frequency | 1851.5 | 1880 | 1908.5 |
| 1.4 | Channel | 18607 | 18900 | 19193 |
| | Frequency | 1850.7 | 1880 | 1909.3 |

| LTE Band 4 Channel and Frequency List | | | | |
|---------------------------------------|------------------------|--------|--------|---------|
| BW [MHz] | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 20 | Channel | 20050 | 20175 | 20300 |
| | Frequency | 1720 | 1732.5 | 1745 |
| 15 | Channel | 20025 | 20175 | 20325 |
| | Frequency | 1717.5 | 1732.5 | 1747.5 |
| 10 | Channel | 20000 | 20175 | 20350 |
| | Frequency | 1715 | 1732.5 | 1750 |
| 5 | Channel | 19975 | 20175 | 20375 |
| | Frequency | 1712.5 | 1732.5 | 1752.5 |
| 3 | Channel | 19965 | 20175 | 20385 |
| | Frequency | 1711.5 | 1732.5 | 1753.5 |
| 1.4 | Channel | 19957 | 20175 | 20393 |
| | Frequency | 1710.7 | 1732.5 | 1754.3 |



| LTE Band 12 Channel and Frequency List | | | | |
|--|------------------------|--------|--------|---------|
| BW [MHz] | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 10 | Channel | 23060 | 23095 | 23130 |
| | Frequency | 704 | 707.5 | 711 |
| 5 | Channel | 23035 | 23095 | 23155 |
| | Frequency | 701.5 | 707.5 | 713.5 |
| 3 | Channel | 23025 | 23095 | 23165 |
| | Frequency | 700.5 | 707.5 | 714.5 |
| 1.4 | Channel | 23017 | 23095 | 23173 |
| | Frequency | 699.7 | 707.5 | 715.3 |

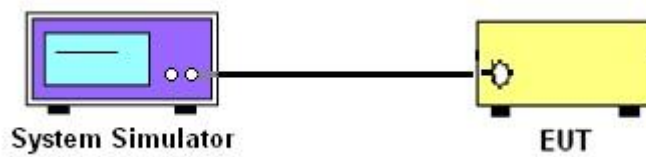
3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of this test report.

3.2 Test Setup

3.2.1 Conducted Output Power



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power and ERP/EIRP

3.4.1 Description of the Conducted Output Power Measurement and ERP/EIRP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 12.

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4.

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

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

3.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.

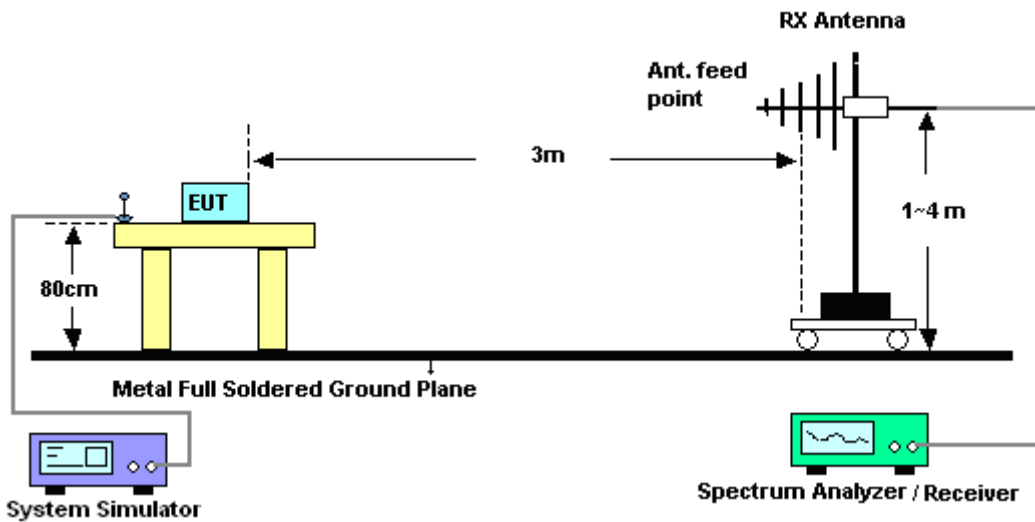
4 Radiated Test Items

4.1 Measuring Instruments

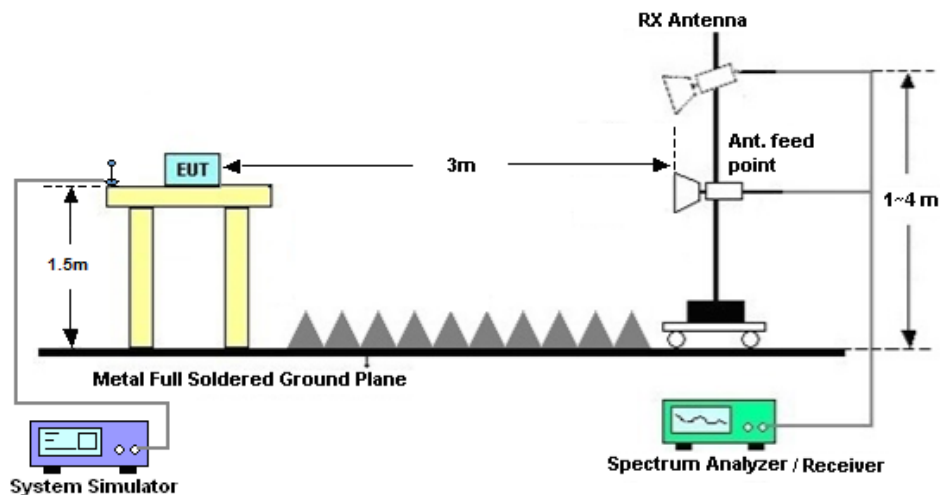
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
11. $ERP \text{ (dBm)} = EIRP - 2.15$
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$



5 List of Measuring Equipment

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Test Date | Due Date | Remark |
|---------------------------|--------------|-------------------|------------|-----------------|------------------|-------------------------------|---------------|--------------------------|
| EXA Spectrum Analyzer | Keysight | N9010B | MY57471084 | 10Hz-44GHz | Jun. 25, 2018 | May 03, 2019~ May 08, 2019 | Jun. 24, 2019 | Radiation (03CH06-KS) |
| Bilog Antenna | TeseQ | CBL6111D | 44483 | 30MHz-1GHz | Dec. 28, 2018 | May 03, 2019~ May 08, 2019 | Dec. 27, 2019 | Radiation (03CH06-KS) |
| Double Ridge Horn Antenna | ETS-Lindgren | 3117 | 75957 | 1GHz~18GHz | Oct. 20, 2018 | May 03, 2019~ May 08, 2019 | Oct. 19, 2019 | Radiation (03CH06-KS) |
| SHF-EHF Horn | Com-power | AH-840 | 101070 | 18GHz~40GHz | Jan. 05, 2019 | May 03, 2019~ May 08, 2019 | Jan. 04, 2020 | Radiation (03CH06-KS) |
| Amplifier | SONOMA | 310N | 187289 | 9KHz ~1GHZ | Aug. 06, 2018 | May 03, 2019~ May 08, 2019 | Aug. 05, 2019 | Radiation (03CH06-KS) |
| Amplifier | Keysight | 83017A | MY53270203 | 500MHz~26.5GHz | Apr. 15, 2019 | May 03, 2019~ May 08, 2019 | Apr. 14, 2020 | Radiation (03CH06-KS) |
| Amplifier | MITEQ | TTA1840-35 -HG | 2014749 | 18~40GHz | Jan. 14, 2019 | May 03, 2019~ May 08, 2019 | Jan. 13, 2020 | Radiation (03CH06-KS) |
| AC Power Source | Chroma | 61601 | F104090004 | N/A | NCR | May 03, 2019~ May 08, 2019 | NCR | Radiation (03CH06-KS) |
| Turn Table | ChamPro | EM 1000-T | 060762-T | 0~360 degree | NCR | May 03, 2019~ May 08, 2019 | NCR | Radiation (03CH06-KS) |
| Antenna Mast | ChamPro | EM 1000-A | 060762-A | 1 m~4 m | NCR | May 03, 2019~ May 08, 2019 | NCR | Radiation (03CH06-KS) |

NCR: No Calibration Required

6 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage $K=2$ to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

| | |
|---|--------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$) | 2.5 dB |
|---|--------|

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

| | |
|---|--------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$) | 2.0 dB |
|---|--------|

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

| | |
|---|--------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$) | 2.0 dB |
|---|--------|

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

| LTE Band 2 Maximum Average Power [dBm] | | | | | | | | | |
|--|--------|---------|-----------|-------|---|----|--------|--------|---------|
| BW [MHz] | Mod | RB Size | RB Offset | Index | | | Lowest | Middle | Highest |
| | | | | L | M | H | | | |
| 20 | QPSK | 1 | 0 | 0 | 0 | 15 | 23.60 | 23.34 | 23.74 |
| 20 | | 1 | 5 | 0 | 0 | 15 | 23.74 | 23.37 | 23.65 |
| 20 | | 6 | 0 | 0 | 0 | 15 | 23.72 | 23.33 | 23.64 |
| 20 | 16-QAM | 1 | 0 | 0 | 0 | 15 | 23.78 | 23.68 | 23.75 |
| 20 | | 1 | 5 | 0 | 0 | 15 | 23.76 | 23.64 | 23.76 |
| 20 | | 6 | 0 | 0 | 0 | 15 | 23.74 | 23.70 | 23.80 |
| 15 | QPSK | 1 | 0 | 0 | 0 | 11 | 23.66 | 23.67 | 23.65 |
| 15 | | 1 | 5 | 0 | 0 | 11 | 23.65 | 23.70 | 23.60 |
| 15 | | 6 | 0 | 0 | 0 | 11 | 23.66 | 23.68 | 23.55 |
| 15 | 16-QAM | 1 | 0 | 0 | 0 | 11 | 23.79 | 23.80 | 23.71 |
| 15 | | 1 | 5 | 0 | 0 | 11 | 23.81 | 23.80 | 23.79 |
| 15 | | 6 | 0 | 0 | 0 | 11 | 23.70 | 23.75 | 23.68 |
| 10 | QPSK | 1 | 0 | 0 | 0 | 7 | 23.54 | 23.53 | 23.53 |
| 10 | | 1 | 5 | 0 | 0 | 7 | 23.45 | 23.55 | 23.49 |
| 10 | | 6 | 0 | 0 | 0 | 7 | 22.80 | 22.89 | 22.80 |
| 10 | 16-QAM | 1 | 0 | 0 | 0 | 7 | 23.80 | 23.73 | 23.83 |
| 10 | | 1 | 5 | 0 | 0 | 7 | 23.81 | 23.75 | 23.79 |
| 10 | | 6 | 0 | 0 | 0 | 7 | 22.23 | 22.17 | 22.16 |
| 5 | QPSK | 1 | 0 | 0 | 0 | 3 | 23.50 | 23.53 | 23.53 |
| 5 | | 1 | 5 | 0 | 0 | 3 | 23.49 | 23.54 | 23.45 |
| 5 | | 6 | 0 | 0 | 0 | 3 | 23.00 | 22.91 | 22.87 |
| 5 | 16-QAM | 1 | 0 | 0 | 0 | 3 | 23.46 | 23.84 | 23.75 |
| 5 | | 1 | 5 | 0 | 0 | 3 | 23.65 | 23.78 | 23.71 |
| 5 | | 6 | 0 | 0 | 0 | 3 | 22.30 | 22.18 | 22.17 |



| LTE Band 2 Maximum Average Power [dBm] | | | | | | | | | |
|--|--------|---------|-----------|-------|---|---|--------|--------|---------|
| BW [MHz] | Mod | RB Size | RB Offset | Index | | | Lowest | Middle | Highest |
| | | | | L | M | H | | | |
| 3 | QPSK | 1 | 0 | 0 | 0 | 1 | 23.82 | 23.40 | 23.57 |
| 3 | | 1 | 5 | 0 | 0 | 1 | 23.79 | 23.35 | 23.80 |
| 3 | | 6 | 0 | 0 | 0 | 1 | 21.59 | 21.42 | 21.13 |
| 3 | | 1 | 0 | 0 | 0 | 1 | 22.47 | 22.36 | 22.20 |
| 3 | 16-QAM | 1 | 5 | 0 | 0 | 1 | 22.48 | 22.32 | 22.25 |
| 3 | | 6 | 0 | 0 | 0 | 1 | 21.51 | 21.58 | 21.05 |
| 1.4 | QPSK | 1 | 0 | 0 | 0 | 0 | 23.83 | 23.55 | 23.83 |
| 1.4 | | 1 | 5 | 0 | 0 | 0 | 23.82 | 23.54 | 23.82 |
| 1.4 | | 6 | 0 | 0 | 0 | 0 | 22.80 | 21.57 | 22.80 |
| 1.4 | 16-QAM | 1 | 0 | 0 | 0 | 0 | 22.63 | 22.72 | 22.63 |
| 1.4 | | 1 | 5 | 0 | 0 | 0 | 22.44 | 22.58 | 22.44 |
| 1.4 | | 6 | 0 | 0 | 0 | 0 | 21.85 | 21.66 | 21.85 |



| LTE Band 4 Maximum Average Power [dBm] | | | | | | | | | |
|--|--------|---------|-----------|-------|---|----|--------|--------|---------|
| BW [MHz] | Mod | RB Size | RB Offset | Index | | | Lowest | Middle | Highest |
| | | | | L | M | H | | | |
| 20 | QPSK | 1 | 0 | 0 | 0 | 15 | 23.30 | 23.26 | 23.19 |
| 20 | | 1 | 5 | 0 | 0 | 15 | 23.28 | 23.29 | 23.24 |
| 20 | | 6 | 0 | 0 | 0 | 15 | 23.21 | 23.28 | 23.21 |
| 20 | | 1 | 0 | 0 | 0 | 15 | 23.64 | 23.57 | 23.54 |
| 20 | 16-QAM | 1 | 5 | 0 | 0 | 15 | 23.60 | 23.58 | 23.57 |
| 20 | | 6 | 0 | 0 | 0 | 15 | 23.34 | 23.35 | 23.31 |
| 15 | QPSK | 1 | 0 | 0 | 0 | 11 | 23.37 | 23.30 | 23.31 |
| 15 | | 1 | 5 | 0 | 0 | 11 | 23.27 | 23.28 | 23.27 |
| 15 | | 6 | 0 | 0 | 0 | 11 | 23.40 | 23.31 | 23.31 |
| 15 | 16-QAM | 1 | 0 | 0 | 0 | 11 | 23.63 | 23.60 | 23.54 |
| 15 | | 1 | 5 | 0 | 0 | 11 | 23.57 | 23.63 | 23.57 |
| 15 | | 6 | 0 | 0 | 0 | 11 | 23.21 | 23.36 | 23.29 |
| 10 | QPSK | 1 | 0 | 0 | 0 | 7 | 23.10 | 23.13 | 23.14 |
| 10 | | 1 | 5 | 0 | 0 | 7 | 23.16 | 23.12 | 23.13 |
| 10 | | 6 | 0 | 0 | 0 | 7 | 22.64 | 22.50 | 22.66 |
| 10 | 16-QAM | 1 | 0 | 0 | 0 | 7 | 23.51 | 23.44 | 23.50 |
| 10 | | 1 | 5 | 0 | 0 | 7 | 23.46 | 23.44 | 23.49 |
| 10 | | 6 | 0 | 0 | 0 | 7 | 21.92 | 21.90 | 22.00 |
| 5 | QPSK | 1 | 0 | 0 | 0 | 3 | 23.10 | 23.13 | 23.10 |
| 5 | | 1 | 5 | 0 | 0 | 3 | 23.19 | 23.13 | 23.15 |
| 5 | | 6 | 0 | 0 | 0 | 3 | 22.50 | 22.50 | 22.65 |
| 5 | 16-QAM | 1 | 0 | 0 | 0 | 3 | 23.44 | 23.44 | 23.43 |
| 5 | | 1 | 5 | 0 | 0 | 3 | 23.41 | 23.45 | 23.40 |
| 5 | | 6 | 0 | 0 | 0 | 3 | 21.85 | 21.97 | 21.83 |



| LTE Band 4 Maximum Average Power [dBm] | | | | | | | | | |
|--|--------|---------|-----------|-------|---|---|--------|--------|---------|
| BW [MHz] | Mod | RB Size | RB Offset | Index | | | Lowest | Middle | Highest |
| | | | | L | M | H | | | |
| 3 | QPSK | 1 | 0 | 0 | 0 | 1 | 23.22 | 23.11 | 23.34 |
| 3 | | 1 | 5 | 0 | 0 | 1 | 23.25 | 23.10 | 23.28 |
| 3 | | 6 | 0 | 0 | 0 | 1 | 21.22 | 21.09 | 21.24 |
| 3 | | 1 | 0 | 0 | 0 | 1 | 22.33 | 22.11 | 22.01 |
| 3 | 16-QAM | 1 | 5 | 0 | 0 | 1 | 22.28 | 22.11 | 22.02 |
| 3 | | 6 | 0 | 0 | 0 | 1 | 21.25 | 21.22 | 21.33 |
| 1.4 | QPSK | 1 | 0 | 0 | 0 | 0 | 23.63 | 23.51 | 23.40 |
| 1.4 | | 1 | 5 | 0 | 0 | 0 | 23.68 | 23.35 | 23.30 |
| 1.4 | | 6 | 0 | 0 | 0 | 0 | 21.65 | 21.33 | 21.45 |
| 1.4 | 16-QAM | 1 | 0 | 0 | 0 | 0 | 22.22 | 22.53 | 22.32 |
| 1.4 | | 1 | 5 | 0 | 0 | 0 | 22.34 | 22.41 | 22.20 |
| 1.4 | | 6 | 0 | 0 | 0 | 0 | 21.61 | 21.44 | 21.48 |



| LTE Band 12 Maximum Average Power [dBm] | | | | | | | | | |
|---|--------|---------|-----------|-------|---|---|--------|--------|---------|
| BW [MHz] | Mod | RB Size | RB Offset | Index | | | Lowest | Middle | Highest |
| | | | | L | M | H | | | |
| 10 | QPSK | 1 | 0 | 0 | 0 | 7 | 23.39 | 23.40 | 23.40 |
| 10 | | 1 | 5 | 0 | 0 | 7 | 23.40 | 23.41 | 23.39 |
| 10 | | 6 | 0 | 0 | 0 | 7 | 22.77 | 22.73 | 23.77 |
| 10 | | 1 | 0 | 0 | 0 | 7 | 23.44 | 23.71 | 23.57 |
| 10 | 16-QAM | 1 | 5 | 0 | 0 | 7 | 23.70 | 23.74 | 23.74 |
| 10 | | 6 | 0 | 0 | 0 | 7 | 23.01 | 23.06 | 23.05 |
| 5 | QPSK | 1 | 0 | 0 | 0 | 3 | 23.31 | 23.35 | 23.30 |
| 5 | | 1 | 5 | 0 | 0 | 3 | 23.64 | 23.37 | 23.30 |
| 5 | | 6 | 0 | 0 | 0 | 3 | 22.65 | 22.75 | 22.43 |
| 5 | 16-QAM | 1 | 0 | 0 | 0 | 3 | 23.66 | 23.65 | 23.60 |
| 5 | | 1 | 5 | 0 | 0 | 3 | 23.54 | 23.69 | 23.54 |
| 5 | | 6 | 0 | 0 | 0 | 3 | 22.09 | 22.10 | 23.09 |
| 3 | QPSK | 1 | 0 | 0 | 0 | 1 | 23.15 | 23.38 | 23.30 |
| 3 | | 1 | 5 | 0 | 0 | 1 | 23.25 | 23.30 | 23.18 |
| 3 | | 6 | 0 | 0 | 0 | 1 | 21.34 | 21.29 | 21.13 |
| 3 | 16-QAM | 1 | 0 | 0 | 0 | 1 | 21.88 | 23.60 | 22.20 |
| 3 | | 1 | 5 | 0 | 0 | 1 | 21.98 | 23.31 | 22.23 |
| 3 | | 6 | 0 | 0 | 0 | 1 | 21.43 | 21.29 | 21.06 |
| 1.4 | QPSK | 1 | 0 | 0 | 0 | 0 | 23.42 | 23.55 | 23.18 |
| 1.4 | | 1 | 5 | 0 | 0 | 0 | 23.27 | 23.50 | 23.23 |
| 1.4 | | 6 | 0 | 0 | 0 | 0 | 21.20 | 21.61 | 21.32 |
| 1.4 | 16-QAM | 1 | 0 | 0 | 0 | 0 | 22.04 | 22.58 | 22.19 |
| 1.4 | | 1 | 5 | 0 | 0 | 0 | 22.15 | 22.49 | 22.25 |
| 1.4 | | 6 | 0 | 0 | 0 | 0 | 21.27 | 21.60 | 21.21 |

ERP/EIRP

| LTE Band 2 (GT - LC = 1.34 dB) QPSK | | | | | | | | | |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth | 1.4M | | | 3M | | | 5M | | |
| Channel | 18607 | 18900 | 19193 | 18615 | 18900 | 19185 | 18625 | 18900 | 19175 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency | 1850.7 | 1880 | 1909.3 | 1851.5 | 1880 | 1908.5 | 1852.5 | 1880 | 1907.5 |
| (MHz) | | | | | | | | | |
| Conducted Power (dBm) | 23.83 | 23.55 | 23.83 | 23.82 | 23.40 | 23.57 | 23.49 | 23.54 | 23.45 |
| Conducted Power (Watts) | 0.2415 | 0.2265 | 0.2415 | 0.2410 | 0.2188 | 0.2275 | 0.2234 | 0.2259 | 0.2213 |
| EIRP(dBm) | 25.17 | 24.89 | 25.17 | 25.16 | 24.74 | 24.91 | 24.83 | 24.88 | 24.79 |
| EIRP(Watts) | 0.3289 | 0.3083 | 0.3289 | 0.3282 | 0.2979 | 0.3097 | 0.3041 | 0.3076 | 0.3013 |

| LTE Band 2 (GT - LC = 1.34 dB) QPSK | | | | | | | | | |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth | 10M | | | 15M | | | 20M | | |
| Channel | 18650 | 18900 | 19150 | 18675 | 18900 | 19125 | 18650 | 18900 | 19100 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency | 1855 | 1880 | 1905 | 1857.5 | 1880 | 1902.5 | 1860 | 1880 | 1900 |
| (MHz) | | | | | | | | | |
| Conducted Power (dBm) | 23.45 | 23.55 | 23.49 | 23.65 | 23.70 | 23.60 | 23.60 | 23.34 | 23.74 |
| Conducted Power (Watts) | 0.2213 | 0.2265 | 0.2234 | 0.2317 | 0.2344 | 0.2291 | 0.2291 | 0.2158 | 0.2366 |
| EIRP(dBm) | 24.79 | 24.89 | 24.83 | 24.99 | 25.04 | 24.94 | 24.94 | 24.68 | 25.08 |
| EIRP(Watts) | 0.3013 | 0.3083 | 0.3041 | 0.3155 | 0.3192 | 0.3119 | 0.3119 | 0.2938 | 0.3221 |



| LTE Band 2 (GT - LC = 1.34 dB) 16QAM | | | | | | | | | |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth | 1.4M | | | 3M | | | 5M | | |
| Channel | 18607 | 18900 | 19193 | 18615 | 18900 | 19185 | 18625 | 18900 | 19175 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency (MHz) | 1850.7 | 1880 | 1909.3 | 1851.5 | 1880 | 1908.5 | 1852.5 | 1880 | 1907.5 |
| Conducted Power (dBm) | 22.63 | 22.72 | 22.63 | 22.48 | 22.32 | 22.25 | 23.46 | 23.84 | 23.75 |
| Conducted Power (Watts) | 0.1832 | 0.1871 | 0.1832 | 0.1770 | 0.1706 | 0.1679 | 0.2218 | 0.2421 | 0.2371 |
| EIRP(dBm) | 23.97 | 24.06 | 23.97 | 23.82 | 23.66 | 23.59 | 24.80 | 25.18 | 25.09 |
| EIRP(Watts) | 0.2495 | 0.2547 | 0.2495 | 0.2410 | 0.2323 | 0.2286 | 0.3020 | 0.3296 | 0.3228 |

| LTE Band 2 (GT - LC = 1.34 dB) 16QAM | | | | | | | | | |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth | 10M | | | 15M | | | 20M | | |
| Channel | 18650 | 18900 | 19150 | 18675 | 18900 | 19125 | 18650 | 18900 | 19100 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency (MHz) | 1855 | 1880 | 1905 | 1857.5 | 1880 | 1902.5 | 1860 | 1880 | 1900 |
| Conducted Power (dBm) | 23.80 | 23.73 | 23.83 | 23.81 | 23.80 | 23.79 | 23.74 | 23.70 | 23.80 |
| Conducted Power (Watts) | 0.2399 | 0.2360 | 0.2415 | 0.2404 | 0.2399 | 0.2393 | 0.2366 | 0.2344 | 0.2399 |
| EIRP(dBm) | 25.14 | 25.07 | 25.17 | 25.15 | 25.14 | 25.13 | 25.08 | 25.04 | 25.14 |
| EIRP(Watts) | 0.3266 | 0.3214 | 0.3289 | 0.3273 | 0.3266 | 0.3258 | 0.3221 | 0.3192 | 0.3266 |



| LTE Band 4 (GT - LC = 0.47 dB) QPSK | | | | | | | | | |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth | 1.4M | | | 3M | | | 5M | | |
| Channel | 19957 | 20175 | 20393 | 19965 | 20175 | 20385 | 19975 | 20175 | 20375 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency | 1710.7 | 1732.5 | 1754.3 | 1711.5 | 1732.5 | 1753.5 | 1712.5 | 1732.5 | 1752.5 |
| (MHz) | | | | | | | | | |
| Conducted Power (dBm) | 23.68 | 23.35 | 23.30 | 23.22 | 23.11 | 23.34 | 23.19 | 23.13 | 23.15 |
| Conducted Power (Watts) | 0.2333 | 0.2163 | 0.2138 | 0.2099 | 0.2046 | 0.2158 | 0.2084 | 0.2056 | 0.2065 |
| EIRP(dBm) | 24.15 | 23.82 | 23.77 | 23.69 | 23.58 | 23.81 | 23.66 | 23.60 | 23.62 |
| EIRP(Watts) | 0.2600 | 0.2410 | 0.2382 | 0.2339 | 0.2280 | 0.2404 | 0.2323 | 0.2291 | 0.2301 |

| LTE Band 4 (GT - LC = 0.47 dB) QPSK | | | | | | | | | |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth | 10M | | | 15M | | | 20M | | |
| Channel | 20000 | 20175 | 20350 | 20025 | 20175 | 20325 | 20050 | 20175 | 20300 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency | 1715 | 1732.5 | 1750 | 1717.5 | 1732.5 | 1747.5 | 1720 | 1732.5 | 1745 |
| (MHz) | | | | | | | | | |
| Conducted Power (dBm) | 23.16 | 23.12 | 23.13 | 23.40 | 23.31 | 23.31 | 23.30 | 23.26 | 23.19 |
| Conducted Power (Watts) | 0.2070 | 0.2051 | 0.2056 | 0.2188 | 0.2143 | 0.2143 | 0.2138 | 0.2118 | 0.2084 |
| EIRP(dBm) | 23.63 | 23.59 | 23.60 | 23.87 | 23.78 | 23.78 | 23.77 | 23.73 | 23.66 |
| EIRP(Watts) | 0.2307 | 0.2286 | 0.2291 | 0.2438 | 0.2388 | 0.2388 | 0.2382 | 0.2360 | 0.2323 |



| LTE Band 4 (GT - LC = 0.47 dB) 16QAM | | | | | | | | | |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth | 1.4M | | | 3M | | | 5M | | |
| Channel | 19957 | 20175 | 20393 | 19965 | 20175 | 20385 | 19975 | 20175 | 20375 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency | 1710.7 | 1732.5 | 1754.3 | 1711.5 | 1732.5 | 1753.5 | 1712.5 | 1732.5 | 1752.5 |
| (MHz) | | | | | | | | | |
| Conducted Power (dBm) | 22.22 | 22.53 | 22.32 | 22.33 | 22.11 | 22.01 | 23.41 | 23.45 | 23.40 |
| Conducted Power (Watts) | 0.1667 | 0.1791 | 0.1706 | 0.1708 | 0.1626 | 0.1589 | 0.2193 | 0.2213 | 0.2188 |
| EIRP(dBm) | 22.69 | 23.00 | 22.79 | 22.80 | 22.58 | 22.48 | 23.88 | 23.92 | 23.87 |
| EIRP(Watts) | 0.1858 | 0.1995 | 0.1901 | 0.1903 | 0.1811 | 0.1770 | 0.2443 | 0.2466 | 0.2438 |

| LTE Band 4 (GT - LC = 0.47 dB) 16QAM | | | | | | | | | |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth | 10M | | | 15M | | | 20M | | |
| Channel | 20000 | 20175 | 20350 | 20025 | 20175 | 20325 | 20050 | 20175 | 20300 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency | 1715 | 1732.5 | 1750 | 1717.5 | 1732.5 | 1747.5 | 1720 | 1732.5 | 1745 |
| (MHz) | | | | | | | | | |
| Conducted Power (dBm) | 23.51 | 23.44 | 23.50 | 23.63 | 23.60 | 23.54 | 23.64 | 23.57 | 23.54 |
| Conducted Power (Watts) | 0.2244 | 0.2208 | 0.2239 | 0.2307 | 0.2291 | 0.2259 | 0.2312 | 0.2275 | 0.2259 |
| EIRP(dBm) | 23.98 | 23.91 | 23.97 | 24.10 | 24.07 | 24.01 | 24.11 | 24.04 | 24.01 |
| EIRP(Watts) | 0.2500 | 0.2460 | 0.2495 | 0.2570 | 0.2553 | 0.2518 | 0.2576 | 0.2535 | 0.2518 |

| LTE Band 12 (GT - LC = 0.63 dB) QPSK | | | | | | | | | |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth | 1.4M | | | 3M | | | 5M | | |
| Channel | 23017 | 23095 | 23173 | 23025 | 23095 | 23165 | 23035 | 23095 | 23155 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency | 699.7 | 707.5 | 715.3 | 700.5 | 707.5 | 714.5 | 701.5 | 707.5 | 713.5 |
| (MHz) | | | | | | | | | |
| Conducted Power (dBm) | 23.42 | 23.55 | 23.18 | 23.15 | 23.38 | 23.30 | 23.64 | 23.37 | 23.30 |
| Conducted Power (Watts) | 0.2198 | 0.2265 | 0.2080 | 0.2065 | 0.2178 | 0.2138 | 0.2312 | 0.2173 | 0.2138 |
| ERP(dBm) | 21.90 | 22.03 | 21.66 | 21.63 | 21.86 | 21.78 | 22.12 | 21.85 | 21.78 |
| ERP(Watts) | 0.1549 | 0.1596 | 0.1466 | 0.1455 | 0.1535 | 0.1507 | 0.1629 | 0.1531 | 0.1507 |

| LTE Band 12 (GT - LC = 0.63 dB) QPSK | | | |
|--------------------------------------|--------|--------|--------|
| Bandwidth | 10M | | |
| Channel | 23060 | 23095 | 23130 |
| | (Low) | (Mid) | (High) |
| Frequency | 704 | 707.5 | 711 |
| (MHz) | | | |
| Conducted Power (dBm) | 22.77 | 22.73 | 23.77 |
| Conducted Power (Watts) | 0.1892 | 0.1875 | 0.2382 |
| ERP(dBm) | 21.25 | 21.21 | 22.25 |
| ERP(Watts) | 0.1334 | 0.1321 | 0.1679 |



| LTE Band 12 (GT - LC = 0.63 dB) 16QAM | | | | | | | | | |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth | 1.4M | | | 3M | | | 5M | | |
| Channel | 23017 | 23095 | 23173 | 23025 | 23095 | 23165 | 23035 | 23095 | 23155 |
| | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) | (Low) | (Mid) | (High) |
| Frequency (MHz) | 699.7 | 707.5 | 715.3 | 700.5 | 707.5 | 714.5 | 701.5 | 707.5 | 713.5 |
| Conducted Power (dBm) | 22.04 | 22.58 | 22.19 | 21.88 | 23.60 | 22.20 | 23.54 | 23.69 | 23.54 |
| Conducted Power (Watts) | 0.1600 | 0.1811 | 0.1656 | 0.1542 | 0.2291 | 0.1660 | 0.2259 | 0.2339 | 0.2259 |
| ERP(dBm) | 20.52 | 21.06 | 20.67 | 20.36 | 22.08 | 20.68 | 22.02 | 22.17 | 22.02 |
| ERP(Watts) | 0.1127 | 0.1276 | 0.1167 | 0.1086 | 0.1614 | 0.1169 | 0.1592 | 0.1648 | 0.1592 |

| LTE Band 12 (GT - LC = 0.63 dB) 16QAM | | | |
|---------------------------------------|--------|--------|--------|
| Bandwidth | 10M | | |
| Channel | 23060 | 23095 | 23130 |
| | (Low) | (Mid) | (High) |
| Frequency (MHz) | 704 | 707.5 | 711 |
| Conducted Power (dBm) | 23.70 | 23.74 | 23.74 |
| Conducted Power (Watts) | 0.2344 | 0.2366 | 0.2366 |
| ERP(dBm) | 22.18 | 22.22 | 22.22 |
| ERP(Watts) | 0.1652 | 0.1667 | 0.1667 |



Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

| LTE Band 2 / 20MHz / QPSK | | | | | | | | |
|---------------------------|----------------------|-----------------|------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Over Limit (dB) | S.G. Power (dBm) | TX Cable loss (dB) | TX Antenna Gain (dBi) | Polarization (H/V) |
| Lowest | 3702 | -41.08 | -13 | -28.08 | -47.34 | 1.843 | 8.10 | H |
| | 5553 | -51.84 | -13 | -38.84 | -60.15 | 2.19 | 10.50 | H |
| | 7404 | -43.40 | -13 | -30.40 | -52.32 | 2.58 | 11.50 | H |
| | 3705 | -46.35 | -13 | -33.35 | -52.61 | 1.84 | 8.10 | V |
| | 5553 | -49.51 | -13 | -36.51 | -57.82 | 2.19 | 10.50 | V |
| | 7404 | -43.72 | -13 | -30.72 | -52.64 | 2.58 | 11.50 | V |
| Middle | 3744 | -40.64 | -13 | -27.64 | -46.90 | 1.843 | 8.10 | H |
| | 5613 | -51.56 | -13 | -38.56 | -59.87 | 2.19 | 10.50 | H |
| | 7488 | -44.06 | -13 | -31.06 | -52.98 | 2.58 | 11.50 | H |
| | 3744 | -46.45 | -13 | -33.45 | -52.71 | 1.84 | 8.10 | V |
| | 5613 | -50.06 | -13 | -37.06 | -58.37 | 2.19 | 10.50 | V |
| | 7488 | -43.64 | -13 | -30.64 | -52.56 | 2.58 | 11.50 | V |
| Highest | 3783 | -42.13 | -13 | -29.13 | -48.39 | 1.843 | 8.10 | H |
| | 5673 | -51.24 | -13 | -38.24 | -59.55 | 2.19 | 10.50 | H |
| | 7566 | -42.69 | -13 | -29.69 | -51.61 | 2.58 | 11.50 | H |
| | 3783 | -46.29 | -13 | -33.29 | -52.55 | 1.84 | 8.10 | V |
| | 5673 | -51.75 | -13 | -38.75 | -60.06 | 2.19 | 10.50 | V |
| | 7566 | -45.15 | -13 | -32.15 | -54.07 | 2.58 | 11.50 | V |

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



| LTE Band 4 / 20MHz / QPSK | | | | | | | | |
|---------------------------|----------------------|-----------------|------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Over Limit (dB) | S.G. Power (dBm) | TX Cable loss (dB) | TX Antenna Gain (dBi) | Polarization (H/V) |
| Lowest | 3423 | -36.44 | -13 | -23.44 | -43.13 | 1.75 | 8.44 | H |
| | 5136 | -48.87 | -13 | -35.87 | -57.29 | 1.94 | 10.36 | H |
| | 6840 | -50.66 | -13 | -37.66 | -59.90 | 2.47 | 11.71 | H |
| | 3423 | -45.18 | -13 | -32.18 | -51.87 | 1.75 | 8.44 | V |
| | 5136 | -49.23 | -13 | -36.23 | -57.65 | 1.94 | 10.36 | V |
| | 6840 | -50.07 | -13 | -37.07 | -59.31 | 2.47 | 11.71 | V |
| Middle | 3447 | -35.19 | -13 | -22.19 | -41.88 | 1.75 | 8.44 | H |
| | 5172 | -50.02 | -13 | -37.02 | -58.44 | 1.94 | 10.36 | H |
| | 6894 | -50.77 | -13 | -37.77 | -60.01 | 2.47 | 11.71 | H |
| | 3447 | -46.88 | -13 | -33.88 | -53.57 | 1.75 | 8.44 | V |
| | 5172 | -50.72 | -13 | -37.72 | -59.14 | 1.94 | 10.36 | V |
| | 6894 | -51.76 | -13 | -38.76 | -61.00 | 2.47 | 11.71 | V |
| Highest | 3474 | -34.88 | -13 | -21.88 | -41.57 | 1.75 | 8.44 | H |
| | 5208 | -49.46 | -13 | -36.46 | -57.88 | 1.94 | 10.36 | H |
| | 6948 | -48.68 | -13 | -35.68 | -57.92 | 2.47 | 11.71 | H |
| | 3474 | -42.59 | -13 | -29.59 | -49.28 | 1.75 | 8.44 | V |
| | 5208 | -48.76 | -13 | -35.76 | -57.18 | 1.94 | 10.36 | V |
| | 6948 | -49.36 | -13 | -36.36 | -58.60 | 2.47 | 11.71 | V |

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



| LTE Band 12 / 10MHz / QPSK | | | | | | | | |
|----------------------------|----------------------|----------------|------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel | Frequency (MHz) | ERP (dBm) | Limit (dBm) | Over Limit (dB) | S.G. Power (dBm) | TX Cable loss (dB) | TX Antenna Gain (dBi) | Polarization (H/V) |
| Lowest | 1400 | -55.27 | -13 | -42.27 | -58.51 | 1.11 | 6.50 | H |
| | 2100 | -58.60 | -13 | -45.60 | -61.22 | 1.43 | 6.20 | H |
| | 2798 | -59.62 | -13 | -46.62 | -64.06 | 1.71 | 8.30 | H |
| | 1400 | -64.31 | -13 | -51.31 | -67.55 | 1.11 | 6.50 | V |
| | 2098 | -60.34 | -13 | -47.34 | -62.96 | 1.43 | 6.20 | V |
| | 2798 | -59.48 | -13 | -46.48 | -63.92 | 1.71 | 8.30 | V |
| Middle | 1406 | -54.99 | -13 | -41.99 | -58.23 | 1.11 | 6.50 | H |
| | 2110 | -58.58 | -13 | -45.58 | -61.20 | 1.43 | 6.20 | H |
| | 2812 | -59.63 | -13 | -46.63 | -64.07 | 1.71 | 8.30 | H |
| | 1406 | -63.48 | -13 | -50.48 | -66.72 | 1.11 | 6.50 | V |
| | 2110 | -60.23 | -13 | -47.23 | -62.85 | 1.43 | 6.20 | V |
| | 2812 | -59.29 | -13 | -46.29 | -63.73 | 1.71 | 8.30 | V |
| Highest | 1414 | -55.22 | -13 | -42.22 | -58.46 | 1.11 | 6.50 | H |
| | 2120 | -59.97 | -13 | -46.97 | -62.59 | 1.43 | 6.20 | H |
| | 2826 | -59.81 | -13 | -46.81 | -64.25 | 1.71 | 8.30 | H |
| | 1414 | -64.37 | -13 | -51.37 | -67.61 | 1.11 | 6.50 | V |
| | 2120 | -60.40 | -13 | -47.40 | -63.02 | 1.43 | 6.20 | V |
| | 2826 | -59.44 | -13 | -46.44 | -63.88 | 1.71 | 8.30 | V |

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.