



# FCC RF Test Report

**APPLICANT** : Fibocom Wireless Inc  
**EQUIPMENT** : LTE module  
**BRAND NAME** : Fibocom  
**MODEL NAME** : NL668-AM-00  
**FCC ID** : ZMONL668AM00  
**STANDARD** : 47 CFR Part 2, 22(H), 24(E), 27(L), 27(F), 27(H), 27(N)  
**CLASSIFICATION** : PCS Licensed Transmitter (PCB)

The product was received on Oct. 19, 2018 and completely tested on Dec. 12, 2018. We, Sporton International (Shenzhen) 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 (Shenzhen) Inc., the test report shall not be reproduced except in full.

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Approved by: Eric Shih / Manager



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## REVISION HISTORY

| REPORT NO.   | VERSION | DESCRIPTION             | ISSUED DATE   |
|--------------|---------|-------------------------|---------------|
| FG8O1914-01B | Rev. 01 | Initial issue of report | Dec. 19, 2018 |
|              |         |                         |               |
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|              |         |                         |               |



## SUMMARY OF TEST RESULT

| Report Section                                              | FCC Rule                                                                                   | Description                                                                                                  | Limit                               | Result   | Remark                                    |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------|----------|-------------------------------------------|
| 3.3                                                         | §2.1046                                                                                    | Conducted Output Power                                                                                       | Reporting Only                      | PASS     | -                                         |
|                                                             | §22.913(a)(5)                                                                              | Effective Radiated Power (Band 5)                                                                            | ERP < 7 Watt                        | PASS     | -                                         |
|                                                             | §27.50(b)(10)<br>§27.50(c)(10)                                                             | Effective Radiated Power (Band 12) (Band 13) (Band 17) (Band 71)                                             | ERP < 3 Watt                        | PASS     | -                                         |
|                                                             | §24.232(c)<br>§27.50(h)(2)                                                                 | Equivalent Isotropic Radiated Power (Band 2)                                                                 | EIRP < 2Watt                        | PASS     | -                                         |
|                                                             | §27.50(d)(4)                                                                               | Equivalent Isotropic Radiated Power (Band 4) (Band 66)                                                       | EIRP < 1Watt                        | PASS     | -                                         |
| -                                                           | §24.232(d)                                                                                 | Peak-to-Average Ratio                                                                                        | <13 dB                              | Not test | 1                                         |
| -                                                           | §2.1049                                                                                    | Occupied Bandwidth                                                                                           | Reporting Only                      | Not test | 1                                         |
| -                                                           | §2.1051<br>§22.917(a)<br>§24.238(a)<br>§27.53(c)(2)(4)<br>§27.53(g)<br>§27.53(h)           | Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 17) (Band 66) (Band 71) | $< 43+10\log_{10}(P[\text{Watts}])$ | Not test | 1                                         |
| -                                                           | §2.1051<br>§22.917(a)<br>§24.238(a)<br>§27.53(c)(2)<br>§27.53(g)<br>§27.53(h)              | Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 17) (Band 66) (Band 71)     | $< 43+10\log_{10}(P[\text{Watts}])$ | Not test | 1                                         |
| -                                                           | §2.1055<br>§22.355                                                                         | Frequency Stability<br>Temperature & Voltage                                                                 | < 2.5 ppm for Part 22               | Not test | 1                                         |
|                                                             | §2.1055<br>§24.235<br>§27.54                                                               |                                                                                                              | Within Authorized Band              |          |                                           |
| 4.4                                                         | §2.1053<br>§22.917(a)<br>§24.238(a)<br>§27.53(c)(2)<br>§27.53(f)<br>§27.53(g)<br>§27.53(h) | Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 17) (Band 66) (Band 71)      | $< 43+10\log_{10}(P[\text{Watts}])$ | PASS     | Under limit<br>21.90 dB at<br>1559.50 MHz |
| <b>Remark 1:</b> Test items are not necessary to carry out. |                                                                                            |                                                                                                              |                                     |          |                                           |



# 1 General Description

## 1.1 Applicant

**Fibocom Wireless Inc**

5/F, Tower A, Technology Building II, 1057 Nanhai Avenue, Shenzhen, China

## 1.2 Manufacturer

**Fibocom Wireless Inc**

5/F, Tower A, Technology Building II, 1057 Nanhai Avenue, Shenzhen, China

## 1.3 Product Feature of Equipment Under Test

| Product Feature                 |                                                                  |
|---------------------------------|------------------------------------------------------------------|
| Equipment                       | LTE module                                                       |
| Brand Name                      | Fibocom                                                          |
| Model Name                      | NL668-AM-00                                                      |
| FCC ID                          | ZMONL668AM00                                                     |
| EUT supports Radios application | WCDMA/HSPA/DC-HSDPA/<br>HSPA+(16QAM uplink is not supported)/LTE |
| IMEI Code                       | Radiation: 866857032754380                                       |
| HW Version                      | V1.0.1                                                           |
| SW Version                      | 19006.1000.00.02.77.07                                           |
| EUT Stage                       | Production Unit                                                  |

**Remark:**

The report is in accordance with C2PC and the product equality declaration as Appendix D. Based on the similarity between current and previous project, only the test items of Conducted Power / ERP / EIRP / RSE are verified from original test report (Sporton Report Number FG8O1914B) for the difference.

## 1.4 Product Specification of Equipment Under Test

| Standards-related Product Specification |                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tx Frequency</b>                     | LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz<br>LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz<br>LTE Band 5 : 824.7 MHz ~ 848.3 MHz<br>LTE Band 12 : 699.7 MHz ~ 715.3 MHz<br>LTE Band 13 : 779.5 MHz ~ 784.5 MHz<br>LTE Band 17 : 706.5 MHz ~ 713.5 MHz<br>LTE Band 66 : 1710.7 MHz ~ 1779.3 MHz<br>LTE Band 71 : 665.5 MHz ~ 695.5MHz                                                                    |
| <b>Rx Frequency</b>                     | LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz<br>LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz<br>LTE Band 5 : 869.7 MHz ~ 893.3 MHz<br>LTE Band 12 : 729.7 MHz ~ 745.3 MHz<br>LTE Band 13 : 748.5 MHz ~ 753.5 MHz<br>LTE Band 17 : 736.5 MHz ~ 743.5 MHz<br>LTE Band 66 : 2110.7 MHz~ 2199.3 MHz<br>LTE Band 71 : 619.5 MHz ~ 649.5MHz                                                                     |
| <b>Bandwidth</b>                        | LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz<br>LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz<br>LTE Band 5 : 1.4MHz / 3MHz / 5MHz / 10MHz<br>LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz<br>LTE Band 13 : 5MHz / 10MHz<br>LTE Band 17 : 5MHz / 10MHz<br>LTE Band 66 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz<br>LTE Band 71 : 5MHz / 10MHz / 15MHz / 20MHz |
| <b>Maximum Output Power to Antenna</b>  | LTE Band 2 : 23.31 dBm<br>LTE Band 4 : 23.07 dBm<br>LTE Band 5 : 22.86 dBm<br>LTE Band 12 : 23.54 dBm<br>LTE Band 13 : 23.24 dBm<br>LTE Band 17 : 23.50 dBm<br>LTE Band 66 : 23.63 dBm<br>LTE Band 71 : 23.87 dBm                                                                                                                                                                         |
| <b>Antenna Gain</b>                     | LTE Band 2 : 4.00 dBi<br>LTE Band 4 : 4.50 dBi<br>LTE Band 5 : 4.00 dBi<br>LTE Band 12 : 3.00 dBi<br>LTE Band 13 : 3.50 dBi<br>LTE Band 17 : 3.00 dBi<br>LTE Band 66 : 4.50 dBi<br>LTE Band 71 : 2.00 dBi                                                                                                                                                                                 |
| <b>Type of Modulation</b>               | QPSK / 16QAM                                                                                                                                                                                                                                                                                                                                                                              |

## 1.5 Modification of EUT

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

## 1.6 Maximum ERP/EIRP Power, Frequency Tolerance, and Emission Designator

| LTE Band 2  |                       | QPSK            | 16QAM           |
|-------------|-----------------------|-----------------|-----------------|
| BW (MHz)    | Frequency Range (MHz) | Maximum EIRP(W) | Maximum EIRP(W) |
| 1.4         | 1850.7 ~ 1909.3       | 0.5200          | 0.4102          |
| 3           | 1851.5 ~ 1908.5       | 0.5176          | 0.4246          |
| 5           | 1852.5 ~ 1907.5       | 0.5272          | 0.3899          |
| 10          | 1855.0 ~ 1905.0       | 0.5212          | 0.4266          |
| 15          | 1857.5 ~ 1902.5       | 0.5272          | 0.4315          |
| 20          | 1860.0 ~ 1900.0       | 0.5383          | 0.4102          |
| LTE Band 4  |                       | QPSK            | 16QAM           |
| BW (MHz)    | Frequency Range (MHz) | Maximum EIRP(W) | Maximum EIRP(W) |
| 1.4         | 1710.7 ~ 1754.3       | 0.5534          | 0.4446          |
| 3           | 1711.5 ~ 1753.5       | 0.5623          | 0.4150          |
| 5           | 1712.5 ~ 1752.5       | 0.5623          | 0.4140          |
| 10          | 1715.0 ~ 1750.0       | 0.5662          | 0.4560          |
| 15          | 1717.5 ~ 1747.5       | 0.5702          | 0.4169          |
| 20          | 1720.0 ~ 1745.0       | 0.5715          | 0.4355          |
| LTE Band 5  |                       | QPSK            | 16QAM           |
| BW (MHz)    | Frequency Range (MHz) | Maximum ERP(W)  | Maximum ERP(W)  |
| 1.4         | 824.7 ~ 848.3         | 0.2931          | 0.2388          |
| 3           | 825.5 ~ 847.5         | 0.2891          | 0.2163          |
| 5           | 826.5 ~ 846.5         | 0.2884          | 0.2360          |
| 10          | 829.0 ~ 844.0         | 0.2958          | 0.2270          |
| LTE Band 12 |                       | QPSK            | 16QAM           |
| BW (MHz)    | Frequency Range (MHz) | Maximum ERP(W)  | Maximum ERP(W)  |
| 1.4         | 699.7 ~ 715.3         | 0.2559          | 0.2075          |
| 3           | 700.5 ~ 714.5         | 0.2588          | 0.1954          |
| 5           | 701.5 ~ 713.5         | 0.2570          | 0.1897          |
| 10          | 704.0 ~ 711.0         | 0.2748          | 0.2193          |



| LTE Band 13 |                       | QPSK            | 16QAM           |
|-------------|-----------------------|-----------------|-----------------|
| BW (MHz)    | Frequency Range (MHz) | Maximum ERP(W)  | Maximum ERP(W)  |
| 5           | 779.5 ~ 784.5         | 0.2851          | 0.2307          |
| 10          | 782.0                 | 0.2877          | 0.2193          |
| LTE Band 17 |                       | QPSK            | 16QAM           |
| BW (MHz)    | Frequency Range (MHz) | Maximum ERP(W)  | Maximum ERP(W)  |
| 5           | 706.5 ~ 713.5         | 0.2710          | 0.2168          |
| 10          | 709.0 ~ 711.0         | 0.2723          | 0.2153          |
| LTE Band 66 |                       | QPSK            | 16QAM           |
| BW (MHz)    | Frequency Range (MHz) | Maximum EIRP(W) | Maximum EIRP(W) |
| 1.4         | 1710.7 ~ 1779.3       | 0.6109          | 0.4932          |
| 3           | 1711.5 ~ 1778.5       | 0.6209          | 0.4909          |
| 5           | 1712.5 ~ 1777.5       | 0.5970          | 0.4688          |
| 10          | 1715.0 ~ 1775.0       | 0.6109          | 0.5309          |
| 15          | 1717.5 ~ 1772.5       | 0.5861          | 0.4634          |
| 20          | 1720.0 ~ 1770.0       | 0.6501          | 0.4864          |
| LTE Band 71 |                       | QPSK            | 16QAM           |
| BW (MHz)    | Frequency Range (MHz) | Maximum EIRP(W) | Maximum EIRP(W) |
| 5           | 665.5 ~ 695.5         | 0.2123          | 0.1758          |
| 10          | 668.0 ~ 693.0         | 0.2270          | 0.1714          |
| 15          | 670.5 ~ 690.5         | 0.2239          | 0.1663          |
| 20          | 673.0 ~ 688.0         | 0.2355          | 0.1923          |



## 1.7 Testing Location

Sporton International (Shenzhen) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600156-0).

|                    |                                                                                                                                                                           |                     |                                |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------|
| Test Site          | Sporton International (Shenzhen) Inc.                                                                                                                                     |                     |                                |
| Test Site Location | No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan District, Shenzhen City, Guangdong Province 518055, China<br>TEL: +86-755- 3320-2398 |                     |                                |
| Test Site No.      | Sporton Site No.                                                                                                                                                          | FCC designation No. | FCC Test Firm Registration No. |
|                    | 03CH02-SZ                                                                                                                                                                 | CN5019              | 577730                         |

## 1.8 Applicable Standards

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

- ♦ 47 CFR Part 2, 22(H), 24(E), 27(L), 27(H), 27(F), 27(N)
- ♦ ANSI C63.26-2015
- ♦ FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP v01r01

### Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

## 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.

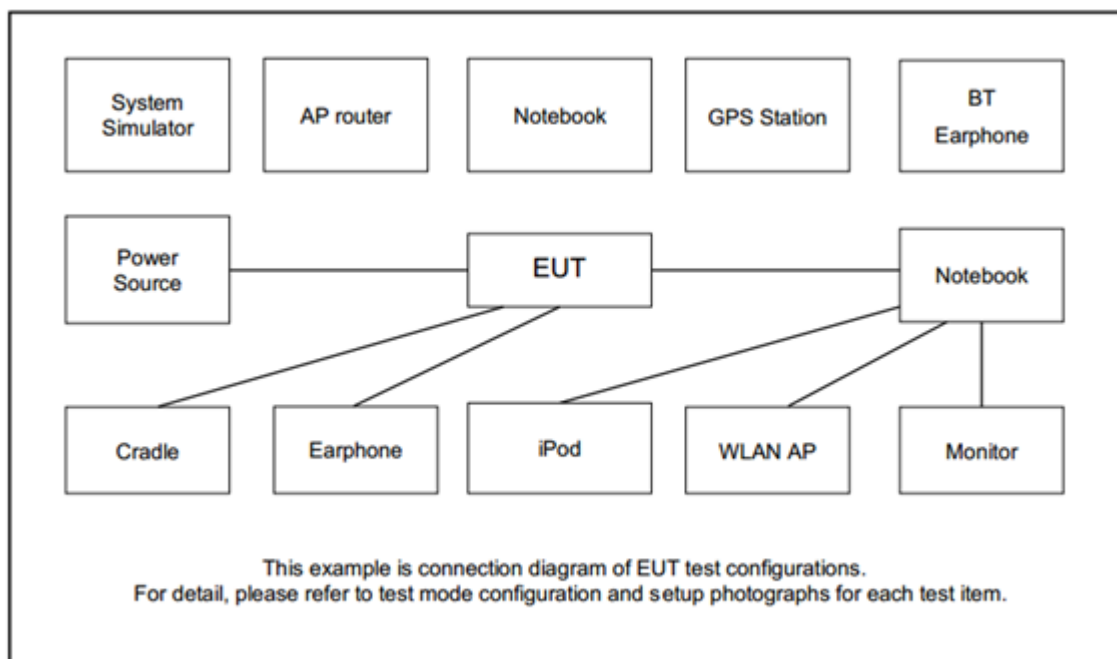
Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

| Test Items        | Band | Bandwidth (MHz) |   |   |    |    |    | Modulation |       |       | RB # |      |      | Test Channel |   |   |
|-------------------|------|-----------------|---|---|----|----|----|------------|-------|-------|------|------|------|--------------|---|---|
|                   |      | 1.4             | 3 | 5 | 10 | 15 | 20 | QPSK       | 16QAM | 64QAM | 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 |
|                   | 5    | 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 |
|                   | 13   | -               | - | v | v  | -  | -  | v          | v     |       | v    | v    | v    | v            | v | v |
|                   | 17   | -               | - | v | v  | -  | -  | v          | v     |       | v    | v    | v    | v            | v | v |
|                   | 66   | v               | v | v | v  | v  | v  | v          | v     |       | v    | v    | v    | v            | v | v |
|                   | 71   | -               | - | v | v  | v  | v  | v          | v     |       | v    | v    | v    | v            | v | v |



| Test Items                                | Band                                                                                                                                                                                                                                                                                                                                                                                                                                    | Bandwidth (MHz) |   |   |    |    |    | Modulation |       |       | RB # |      |      | Test Channel |   |   |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---|---|----|----|----|------------|-------|-------|------|------|------|--------------|---|---|
|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1.4             | 3 | 5 | 10 | 15 | 20 | QPSK       | 16QAM | 64QAM | 1    | Half | Full | L            | M | H |
| <b>E.R.P /<br/>E.I.R.P</b>                | 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 |
|                                           | 5                                                                                                                                                                                                                                                                                                                                                                                                                                       | v               | v | v | v  | -  | -  | v          | v     |       | v    |      |      | v            | v | v |
|                                           | 12                                                                                                                                                                                                                                                                                                                                                                                                                                      | v               | v | v | v  | -  | -  | v          | v     |       | v    |      |      | v            | v | v |
|                                           | 13                                                                                                                                                                                                                                                                                                                                                                                                                                      | -               | - | v | v  | -  | -  | v          | v     |       | v    |      |      | v            | v | v |
|                                           | 17                                                                                                                                                                                                                                                                                                                                                                                                                                      | -               | - | v | v  | -  | -  | v          | v     |       | v    |      |      | v            | v | v |
|                                           | 66                                                                                                                                                                                                                                                                                                                                                                                                                                      | v               | v | v | v  | v  | v  | v          | v     |       | v    |      |      | v            | v | v |
|                                           | 71                                                                                                                                                                                                                                                                                                                                                                                                                                      | -               | - | v | v  | v  | v  | v          | v     |       | v    |      |      | v            | v | v |
| <b>Radiated<br/>Spurious<br/>Emission</b> | 2                                                                                                                                                                                                                                                                                                                                                                                                                                       | v               | v | v | v  | v  | v  | v          |       |       | v    |      |      |              | v |   |
|                                           | 4                                                                                                                                                                                                                                                                                                                                                                                                                                       | v               | v | v | v  | v  | v  | v          |       |       | v    |      |      |              | v |   |
|                                           | 5                                                                                                                                                                                                                                                                                                                                                                                                                                       | v               | v | v | v  | -  | -  | v          |       |       | v    |      |      |              | v |   |
|                                           | 12                                                                                                                                                                                                                                                                                                                                                                                                                                      | v               | v | v | v  | -  | -  | v          |       |       | v    |      |      |              | v |   |
|                                           | 13                                                                                                                                                                                                                                                                                                                                                                                                                                      | -               | - | v | v  | -  | -  | v          |       |       | v    |      |      |              | v |   |
|                                           | 17                                                                                                                                                                                                                                                                                                                                                                                                                                      | -               | - | v | v  | -  | -  | v          |       |       | v    |      |      |              | v |   |
|                                           | 66                                                                                                                                                                                                                                                                                                                                                                                                                                      | v               | v | v | v  | v  | v  | v          |       |       | v    |      |      |              | v |   |
|                                           | 71                                                                                                                                                                                                                                                                                                                                                                                                                                      | -               | - | v | v  | v  | v  | v          |       |       | v    |      |      |              | v |   |
| <b>Note</b>                               | <ol style="list-style-type: none"> <li>The mark "v" means that this configuration is chosen for testing</li> <li>The mark "-" means that this bandwidth is not supported.</li> <li>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.</li> </ol> |                 |   |   |    |    |    |            |       |       |      |      |      |              |   |   |

## 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.   | DC Power Supply  | GW INSTEK  | GPS-3030D       | N/A    | N/A              | Unshielded, 1.8m |
| 2.   | LTE Base Station | Anritsu    | MT8820C         | N/A    | N/A              | Unshielded, 1.8m |
| 3.   | Adapter          | N/A        | N/A             | N/A    | Unshielded, 1.2m | N/A              |
| 4.   | Test Jig         | N/A        | N/A             | N/A    | N/A              | N/A              |
| 5.   | WWAN Antenna     | N/A        | HYT-690-2700H-3 | N/A    | N/A              | N/A              |



## 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 5 Channel and Frequency List |                        |        |        |         |
|---------------------------------------|------------------------|--------|--------|---------|
| BW [MHz]                              | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 10                                    | Channel                | 20450  | 20525  | 20600   |
|                                       | Frequency              | 829    | 836.5  | 844     |
| 5                                     | Channel                | 20425  | 20525  | 20625   |
|                                       | Frequency              | 826.5  | 836.5  | 846.5   |
| 3                                     | Channel                | 20415  | 20525  | 20635   |
|                                       | Frequency              | 825.5  | 836.5  | 847.5   |
| 1.4                                   | Channel                | 20407  | 20525  | 20643   |
|                                       | Frequency              | 824.7  | 836.5  | 848.3   |

| 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   |

| LTE Band 13 Channel and Frequency List |                        |        |        |         |
|----------------------------------------|------------------------|--------|--------|---------|
| BW [MHz]                               | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 10                                     | Channel                | -      | 23230  | -       |
|                                        | Frequency              | -      | 782    | -       |
| 5                                      | Channel                | 23205  | 23230  | 23255   |
|                                        | Frequency              | 779.5  | 782    | 784.5   |

| LTE Band 17 Channel and Frequency List |                        |        |        |         |
|----------------------------------------|------------------------|--------|--------|---------|
| BW [MHz]                               | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 10                                     | Channel                | 23780  | 23790  | 23800   |
|                                        | Frequency              | 709    | 710    | 711     |
| 5                                      | Channel                | 23755  | 23790  | 23825   |
|                                        | Frequency              | 706.5  | 710    | 713.5   |



| LTE Band 66 Channel and Frequency List |                        |        |        |         |
|----------------------------------------|------------------------|--------|--------|---------|
| BW [MHz]                               | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 20                                     | Channel                | 132072 | 132322 | 132572  |
|                                        | Frequency              | 1720   | 1745   | 1770    |
| 15                                     | Channel                | 132047 | 132322 | 132597  |
|                                        | Frequency              | 1717.5 | 1745   | 1772.5  |
| 10                                     | Channel                | 132022 | 132322 | 132622  |
|                                        | Frequency              | 1715   | 1745   | 1775    |
| 5                                      | Channel                | 131997 | 132322 | 132647  |
|                                        | Frequency              | 1712.5 | 1745   | 1777.5  |
| 3                                      | Channel                | 131987 | 132322 | 132657  |
|                                        | Frequency              | 1711.5 | 1745   | 1778.5  |
| 1.4                                    | Channel                | 131979 | 132322 | 132665  |
|                                        | Frequency              | 1710.7 | 1745   | 1779.3  |

| LTE Band 71 Channel and Frequency List |                        |        |        |         |
|----------------------------------------|------------------------|--------|--------|---------|
| BW [MHz]                               | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 20                                     | Channel                | 133372 | 133297 | 133447  |
|                                        | Frequency              | 665.5  | 680.5  | 695.5   |
| 15                                     | Channel                | 133622 | 133297 | 133422  |
|                                        | Frequency              | 668.0  | 680.5  | 693.0   |
| 10                                     | Channel                | 133872 | 133297 | 133397  |
|                                        | Frequency              | 670.5  | 680.5  | 690.5   |
| 5                                      | Channel                | 134122 | 133297 | 133372  |
|                                        | Frequency              | 673.0  | 680.5  | 688.0   |

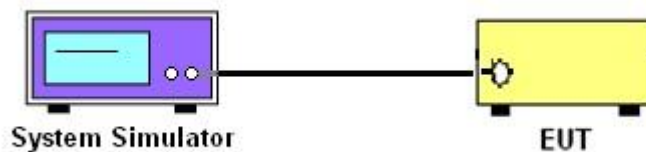
### 3 Conducted Test Items

#### 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 Conducted Output Power and ERP/EIRP

##### 3.3.1 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 7 Watts for LTE Band 5.

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 12, Band 13 and Band 17 and Band 71.

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 and Band 66.

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





### **3.3.2 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.

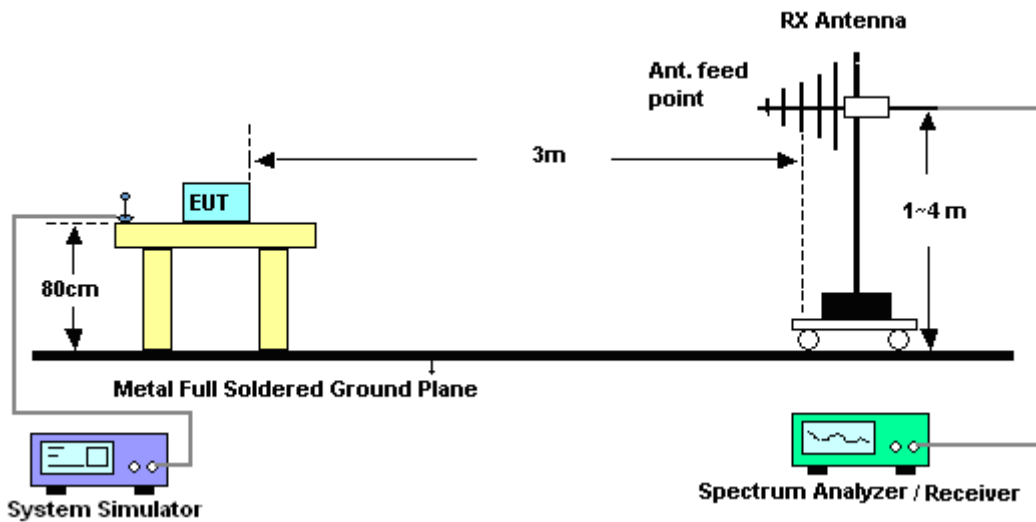
## 4 Radiated Test Items

### 4.1 Measuring Instruments

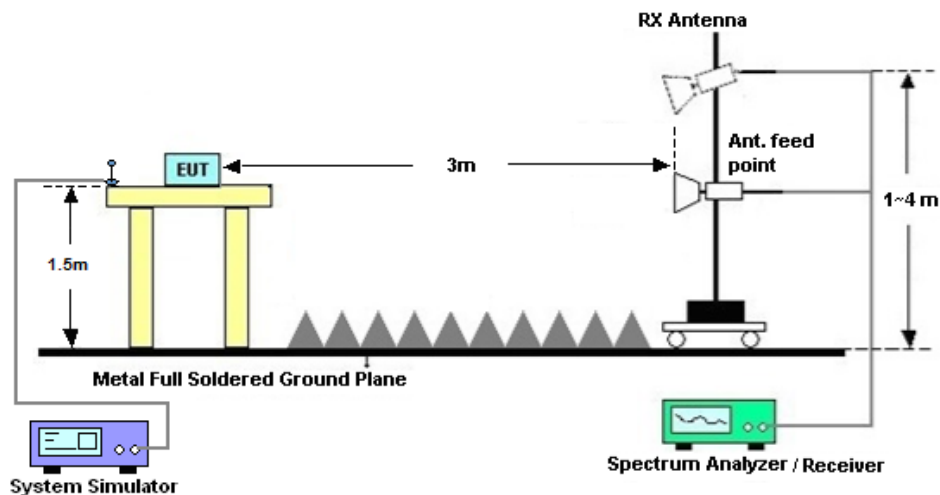
See list of measuring instruments of this test report.

### 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.

For LTE Band 13

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.

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.  $\text{EIRP (dBm)} = \text{S.G. Power} - \text{Tx Cable Loss} + \text{Tx Antenna Gain}$
11.  $\text{ERP (dBm)} = \text{EIRP} - 2.15$
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                |
|---------------------------|--------------|---------------|--------------|-----------------|------------------|---------------|---------------|-----------------------|
| Spectrum Analyzer         | R&S          | FSV40         | 101041       | 10Hz~40GHz      | Oct. 20, 2018    | Dec. 12, 2018 | Oct. 19, 2019 | Radiation (03CH02-SZ) |
| Bilog Antenna             | TeseQ        | CBL6112D      | 35407        | 30MHz-2GHz      | May 10, 2018     | Dec. 12, 2018 | May 09, 2019  | Radiation (03CH02-SZ) |
| Double Ridge Horn Antenna | SCHWARZBECK  | BBHA 9120D    | 9120D-1285   | 1GHz~18GHz      | Dec. 13, 2017    | Dec. 12, 2018 | Dec. 12, 2018 | Radiation (03CH02-SZ) |
| SHF-EHF Horn              | com-power    | AH-840        | 101071       | 18GHz-40GHz     | Mar. 30, 2018    | Dec. 12, 2018 | Mar. 29, 2019 | Radiation (03CH02-SZ) |
| LF Amplifier              | Burgeon      | BPA-530       | 102211       | 0.01~3000Mhz    | Oct. 20, 2018    | Dec. 12, 2018 | Oct. 19, 2019 | Radiation (03CH02-SZ) |
| HF Amplifier              | Agilent      | 8449B         | 3008A01023   | 1GHz~26.5GHz    | Oct. 20, 2018    | Dec. 12, 2018 | Oct. 19, 2019 | Radiation (03CH02-SZ) |
| HF Amplifier              | MITEQ        | TTA1840-35-HG | 1871923      | 18GHz~40GHz     | Jul. 30, 2018    | Dec. 12, 2018 | Jul. 29, 2019 | Radiation (03CH02-SZ) |
| AC Power Source           | Chroma       | 61601         | 616010002470 | N/A             | NCR              | Dec. 12, 2018 | NCR           | Radiation (03CH02-SZ) |
| Turn Table                | Chaintek     | T-200         | N/A          | 0~360 degree    | NCR              | Dec. 12, 2018 | NCR           | Radiation (03CH02-SZ) |
| Antenna Mast              | Chaintek     | MBS-400       | N/A          | 1 m~4 m         | NCR              | Dec. 12, 2018 | NCR           | Radiation (03CH02-SZ) |

NCR: No Calibration Required



## 6 Uncertainty of Evaluation

### 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% ( $U = 2Uc(y)$ ) | 3.3 dB |
|-------------------------------------------------------------------------|--------|

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

|                                                                         |        |
|-------------------------------------------------------------------------|--------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 3.7 dB |
|-------------------------------------------------------------------------|--------|



## Appendix A. Test Results of Conducted Test

### Conducted Output Power(Average power)

| LTE Band 2 Maximum Average Power [dBm] |         |           |        |        |        |         |
|----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                               | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 20                                     | 1       | 0         | QPSK   | 23.08  | 23.17  | 23.11   |
| 20                                     | 1       | 49        |        | 23.01  | 23.31  | 23.06   |
| 20                                     | 1       | 99        |        | 22.95  | 23.12  | 22.91   |
| 20                                     | 50      | 0         |        | 22.06  | 22.17  | 22.10   |
| 20                                     | 50      | 24        |        | 22.00  | 22.10  | 22.02   |
| 20                                     | 50      | 50        |        | 21.85  | 22.05  | 21.86   |
| 20                                     | 100     | 0         |        | 21.92  | 22.11  | 21.95   |
| 20                                     | 1       | 0         | 16-QAM | 22.10  | 22.10  | 21.89   |
| 20                                     | 1       | 49        |        | 21.91  | 22.13  | 21.96   |
| 20                                     | 1       | 99        |        | 21.83  | 21.78  | 21.84   |
| 20                                     | 50      | 0         |        | 20.98  | 21.18  | 21.04   |
| 20                                     | 50      | 24        |        | 20.93  | 21.14  | 21.15   |
| 20                                     | 50      | 50        |        | 20.88  | 21.17  | 20.98   |
| 20                                     | 100     | 0         |        | 21.03  | 21.22  | 21.16   |
| 15                                     | 1       | 0         | QPSK   | 23.21  | 23.22  | 23.14   |
| 15                                     | 1       | 37        |        | 23.16  | 23.22  | 23.04   |
| 15                                     | 1       | 74        |        | 22.85  | 23.04  | 22.61   |
| 15                                     | 36      | 0         |        | 22.09  | 21.94  | 22.11   |
| 15                                     | 36      | 20        |        | 21.94  | 22.13  | 21.91   |
| 15                                     | 36      | 39        |        | 22.01  | 22.10  | 21.86   |
| 15                                     | 75      | 0         |        | 22.08  | 22.08  | 21.94   |
| 15                                     | 1       | 0         | 16-QAM | 22.34  | 22.23  | 21.90   |
| 15                                     | 1       | 37        |        | 22.19  | 22.35  | 21.60   |
| 15                                     | 1       | 74        |        | 21.89  | 21.94  | 21.96   |
| 15                                     | 36      | 0         |        | 21.09  | 21.05  | 21.11   |
| 15                                     | 36      | 20        |        | 21.04  | 21.15  | 21.03   |
| 15                                     | 36      | 39        |        | 21.02  | 21.22  | 21.00   |
| 15                                     | 75      | 0         |        | 21.08  | 21.28  | 21.05   |



| LTE Band 2 Maximum Average Power [dBm] |         |           |        |        |        |         |
|----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                               | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 10                                     | 1       | 0         | QPSK   | 22.98  | 23.17  | 23.16   |
| 10                                     | 1       | 25        |        | 22.91  | 23.10  | 23.02   |
| 10                                     | 1       | 49        |        | 22.83  | 22.91  | 22.71   |
| 10                                     | 25      | 0         |        | 22.14  | 22.00  | 21.99   |
| 10                                     | 25      | 12        |        | 21.93  | 22.16  | 22.02   |
| 10                                     | 25      | 25        |        | 21.93  | 22.09  | 21.88   |
| 10                                     | 50      | 0         |        | 21.99  | 22.00  | 21.91   |
| 10                                     | 1       | 0         | 16-QAM | 22.30  | 22.04  | 22.11   |
| 10                                     | 1       | 25        |        | 22.23  | 21.98  | 21.93   |
| 10                                     | 1       | 49        |        | 21.91  | 21.98  | 21.99   |
| 10                                     | 25      | 0         |        | 21.19  | 21.12  | 21.11   |
| 10                                     | 25      | 12        |        | 20.99  | 21.24  | 21.14   |
| 10                                     | 25      | 25        |        | 21.05  | 21.22  | 21.33   |
| 10                                     | 50      | 0         |        | 21.14  | 21.28  | 21.04   |
| 5                                      | 1       | 0         | QPSK   | 23.05  | 22.99  | 23.11   |
| 5                                      | 1       | 12        |        | 23.08  | 23.22  | 23.11   |
| 5                                      | 1       | 24        |        | 22.91  | 22.96  | 23.02   |
| 5                                      | 12      | 0         |        | 22.05  | 21.91  | 21.97   |
| 5                                      | 12      | 7         |        | 21.93  | 21.92  | 21.93   |
| 5                                      | 12      | 13        |        | 21.87  | 21.96  | 21.94   |
| 5                                      | 25      | 0         |        | 22.00  | 22.02  | 21.95   |
| 5                                      | 1       | 0         | 16-QAM | 21.88  | 21.84  | 21.67   |
| 5                                      | 1       | 12        |        | 21.91  | 21.65  | 21.67   |
| 5                                      | 1       | 24        |        | 21.75  | 21.82  | 21.91   |
| 5                                      | 12      | 0         |        | 21.07  | 20.84  | 20.95   |
| 5                                      | 12      | 7         |        | 20.94  | 20.94  | 21.16   |
| 5                                      | 12      | 13        |        | 20.87  | 20.88  | 20.99   |
| 5                                      | 25      | 0         |        | 21.12  | 21.15  | 20.95   |



| LTE Band 2 Maximum Average Power [dBm] |         |           |        |        |        |         |
|----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                               | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 3                                      | 1       | 0         | QPSK   | 23.00  | 22.78  | 23.14   |
| 3                                      | 1       | 8         |        | 23.03  | 22.90  | 22.97   |
| 3                                      | 1       | 14        |        | 22.92  | 22.95  | 23.05   |
| 3                                      | 8       | 0         |        | 21.95  | 21.81  | 22.07   |
| 3                                      | 8       | 4         |        | 21.97  | 21.91  | 21.95   |
| 3                                      | 8       | 7         |        | 21.92  | 21.84  | 21.97   |
| 3                                      | 15      | 0         |        | 21.89  | 21.92  | 21.94   |
| 3                                      | 1       | 0         | 16-QAM | 21.68  | 21.73  | 21.84   |
| 3                                      | 1       | 8         |        | 21.65  | 21.49  | 21.77   |
| 3                                      | 1       | 14        |        | 22.28  | 21.80  | 21.88   |
| 3                                      | 8       | 0         |        | 21.03  | 21.01  | 21.09   |
| 3                                      | 8       | 4         |        | 20.86  | 21.09  | 21.07   |
| 3                                      | 8       | 7         |        | 21.00  | 21.14  | 21.09   |
| 3                                      | 15      | 0         |        | 21.05  | 21.00  | 20.80   |
| 1.4                                    | 1       | 0         | QPSK   | 23.02  | 22.88  | 23.05   |
| 1.4                                    | 1       | 3         |        | 22.79  | 22.91  | 22.99   |
| 1.4                                    | 1       | 5         |        | 22.70  | 22.70  | 23.16   |
| 1.4                                    | 3       | 0         |        | 22.95  | 22.92  | 22.94   |
| 1.4                                    | 3       | 1         |        | 22.99  | 23.05  | 22.94   |
| 1.4                                    | 3       | 3         |        | 22.97  | 23.03  | 23.10   |
| 1.4                                    | 6       | 0         |        | 21.88  | 21.92  | 21.88   |
| 1.4                                    | 1       | 0         | 16-QAM | 21.88  | 21.84  | 21.85   |
| 1.4                                    | 1       | 3         |        | 21.83  | 21.76  | 21.83   |
| 1.4                                    | 1       | 5         |        | 21.76  | 21.74  | 21.88   |
| 1.4                                    | 3       | 0         |        | 21.77  | 21.84  | 21.83   |
| 1.4                                    | 3       | 1         |        | 21.91  | 22.13  | 21.97   |
| 1.4                                    | 3       | 3         |        | 21.91  | 22.13  | 21.86   |
| 1.4                                    | 6       | 0         |        | 20.81  | 21.06  | 21.05   |





| LTE Band 4 Maximum Average Power [dBm] |         |           |        |        |        |         |
|----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                               | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 20                                     | 1       | 0         | QPSK   | 22.59  | 22.87  | 22.78   |
| 20                                     | 1       | 49        |        | 22.77  | 23.07  | 22.87   |
| 20                                     | 1       | 99        |        | 22.63  | 22.82  | 22.71   |
| 20                                     | 50      | 0         |        | 21.81  | 21.98  | 21.93   |
| 20                                     | 50      | 24        |        | 21.71  | 21.86  | 21.80   |
| 20                                     | 50      | 50        |        | 21.52  | 21.68  | 21.53   |
| 20                                     | 100     | 0         |        | 21.70  | 21.83  | 21.74   |
| 20                                     | 1       | 0         | 16-QAM | 21.62  | 21.80  | 21.89   |
| 20                                     | 1       | 49        |        | 21.51  | 21.75  | 21.54   |
| 20                                     | 1       | 99        |        | 21.65  | 21.55  | 21.51   |
| 20                                     | 50      | 0         |        | 20.90  | 20.87  | 20.95   |
| 20                                     | 50      | 24        |        | 20.91  | 20.85  | 20.78   |
| 20                                     | 50      | 50        |        | 20.82  | 20.77  | 20.64   |
| 20                                     | 100     | 0         |        | 20.81  | 20.81  | 20.74   |
| 15                                     | 1       | 0         | QPSK   | 22.87  | 23.06  | 22.87   |
| 15                                     | 1       | 37        |        | 22.89  | 22.89  | 22.89   |
| 15                                     | 1       | 74        |        | 22.70  | 22.49  | 22.71   |
| 15                                     | 36      | 0         |        | 21.70  | 21.78  | 21.63   |
| 15                                     | 36      | 20        |        | 21.73  | 21.66  | 21.54   |
| 15                                     | 36      | 39        |        | 21.72  | 21.64  | 21.60   |
| 15                                     | 75      | 0         |        | 21.73  | 21.72  | 21.52   |
| 15                                     | 1       | 0         | 16-QAM | 21.70  | 21.57  | 21.70   |
| 15                                     | 1       | 37        |        | 21.67  | 21.61  | 21.67   |
| 15                                     | 1       | 74        |        | 21.53  | 21.50  | 21.53   |
| 15                                     | 36      | 0         |        | 20.79  | 20.88  | 20.64   |
| 15                                     | 36      | 20        |        | 20.80  | 20.71  | 20.66   |
| 15                                     | 36      | 39        |        | 20.85  | 20.85  | 20.55   |
| 15                                     | 75      | 0         |        | 20.87  | 20.84  | 20.62   |



| LTE Band 4 Maximum Average Power [dBm] |         |           |        |        |        |         |
|----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                               | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 10                                     | 1       | 0         | QPSK   | 22.58  | 22.81  | 22.80   |
| 10                                     | 1       | 25        |        | 22.85  | 22.60  | 23.03   |
| 10                                     | 1       | 49        |        | 22.46  | 22.49  | 22.71   |
| 10                                     | 25      | 0         |        | 21.64  | 21.72  | 21.61   |
| 10                                     | 25      | 12        |        | 21.74  | 21.64  | 21.74   |
| 10                                     | 25      | 25        |        | 21.71  | 21.73  | 21.58   |
| 10                                     | 50      | 0         |        | 21.73  | 21.82  | 21.67   |
| 10                                     | 1       | 0         | 16-QAM | 21.89  | 21.89  | 21.57   |
| 10                                     | 1       | 25        |        | 21.56  | 21.89  | 22.09   |
| 10                                     | 1       | 49        |        | 21.46  | 21.72  | 21.96   |
| 10                                     | 25      | 0         |        | 20.69  | 20.80  | 20.74   |
| 10                                     | 25      | 12        |        | 20.81  | 20.75  | 20.87   |
| 10                                     | 25      | 25        |        | 20.73  | 20.68  | 20.71   |
| 10                                     | 50      | 0         |        | 20.72  | 20.82  | 20.91   |
| 5                                      | 1       | 0         | QPSK   | 22.58  | 22.91  | 22.79   |
| 5                                      | 1       | 12        |        | 22.75  | 22.88  | 23.00   |
| 5                                      | 1       | 24        |        | 22.75  | 22.73  | 22.70   |
| 5                                      | 12      | 0         |        | 21.56  | 21.73  | 21.75   |
| 5                                      | 12      | 7         |        | 21.63  | 21.77  | 21.71   |
| 5                                      | 12      | 13        |        | 21.64  | 21.66  | 21.72   |
| 5                                      | 25      | 0         |        | 21.65  | 21.62  | 21.64   |
| 5                                      | 1       | 0         | 16-QAM | 21.48  | 21.57  | 21.57   |
| 5                                      | 1       | 12        |        | 21.56  | 21.43  | 21.41   |
| 5                                      | 1       | 24        |        | 21.54  | 21.63  | 21.67   |
| 5                                      | 12      | 0         |        | 20.52  | 20.75  | 20.72   |
| 5                                      | 12      | 7         |        | 20.66  | 20.65  | 20.74   |
| 5                                      | 12      | 13        |        | 20.67  | 20.85  | 20.92   |
| 5                                      | 25      | 0         |        | 20.82  | 20.82  | 20.78   |



| LTE Band 4 Maximum Average Power [dBm] |         |           |        |        |        |         |
|----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                               | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 3                                      | 1       | 0         | QPSK   | 22.72  | 22.85  | 22.69   |
| 3                                      | 1       | 8         |        | 23.00  | 22.81  | 22.84   |
| 3                                      | 1       | 14        |        | 22.78  | 22.84  | 22.58   |
| 3                                      | 8       | 0         |        | 21.67  | 21.80  | 21.79   |
| 3                                      | 8       | 4         |        | 21.53  | 21.80  | 21.68   |
| 3                                      | 8       | 7         |        | 21.66  | 21.78  | 21.64   |
| 3                                      | 15      | 0         |        | 21.77  | 21.76  | 21.63   |
| 3                                      | 1       | 0         | 16-QAM | 21.45  | 21.61  | 21.48   |
| 3                                      | 1       | 8         |        | 21.65  | 21.53  | 21.28   |
| 3                                      | 1       | 14        |        | 21.51  | 21.68  | 21.62   |
| 3                                      | 8       | 0         |        | 20.83  | 20.84  | 20.71   |
| 3                                      | 8       | 4         |        | 20.82  | 20.74  | 20.74   |
| 3                                      | 8       | 7         |        | 20.73  | 20.81  | 20.76   |
| 3                                      | 15      | 0         |        | 20.61  | 20.78  | 20.77   |
| 1.4                                    | 1       | 0         | QPSK   | 22.48  | 22.73  | 22.63   |
| 1.4                                    | 1       | 3         |        | 22.77  | 22.77  | 22.78   |
| 1.4                                    | 1       | 5         |        | 22.66  | 22.70  | 22.83   |
| 1.4                                    | 3       | 0         |        | 22.70  | 22.93  | 22.80   |
| 1.4                                    | 3       | 1         |        | 22.73  | 22.83  | 22.83   |
| 1.4                                    | 3       | 3         |        | 22.72  | 22.74  | 22.82   |
| 1.4                                    | 6       | 0         |        | 21.68  | 21.79  | 21.80   |
| 1.4                                    | 1       | 0         | 16-QAM | 21.71  | 21.93  | 21.48   |
| 1.4                                    | 1       | 3         |        | 21.81  | 21.98  | 21.57   |
| 1.4                                    | 1       | 5         |        | 21.68  | 21.56  | 21.50   |
| 1.4                                    | 3       | 0         |        | 21.54  | 21.75  | 21.85   |
| 1.4                                    | 3       | 1         |        | 21.64  | 21.94  | 21.84   |
| 1.4                                    | 3       | 3         |        | 21.64  | 21.94  | 21.86   |
| 1.4                                    | 6       | 0         |        | 20.64  | 20.66  | 20.90   |



| LTE Band 5 Maximum Average Power [dBm] |         |           |        |        |        |         |
|----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                               | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 10                                     | 1       | 0         | QPSK   | 22.45  | 22.54  | 22.50   |
| 10                                     | 1       | 25        |        | 22.59  | 22.81  | 22.64   |
| 10                                     | 1       | 49        |        | 22.67  | 22.86  | 22.70   |
| 10                                     | 25      | 0         |        | 21.54  | 21.61  | 21.58   |
| 10                                     | 25      | 12        |        | 21.61  | 21.73  | 21.71   |
| 10                                     | 25      | 25        |        | 21.51  | 21.57  | 21.52   |
| 10                                     | 50      | 0         |        | 21.57  | 21.59  | 21.57   |
| 10                                     | 1       | 0         | 16-QAM | 21.58  | 21.71  | 21.29   |
| 10                                     | 1       | 25        |        | 21.28  | 21.26  | 21.60   |
| 10                                     | 1       | 49        |        | 21.25  | 21.25  | 21.46   |
| 10                                     | 25      | 0         |        | 20.58  | 20.60  | 20.83   |
| 10                                     | 25      | 12        |        | 20.66  | 20.51  | 20.75   |
| 10                                     | 25      | 25        |        | 20.66  | 20.55  | 20.76   |
| 10                                     | 50      | 0         |        | 20.72  | 20.65  | 20.57   |
| 5                                      | 1       | 0         | QPSK   | 22.39  | 22.46  | 22.52   |
| 5                                      | 1       | 12        |        | 22.68  | 22.70  | 22.75   |
| 5                                      | 1       | 24        |        | 22.75  | 22.74  | 22.32   |
| 5                                      | 12      | 0         |        | 21.46  | 21.63  | 21.62   |
| 5                                      | 12      | 7         |        | 21.72  | 21.57  | 21.65   |
| 5                                      | 12      | 13        |        | 21.58  | 21.59  | 21.68   |
| 5                                      | 25      | 0         |        | 21.72  | 21.72  | 21.67   |
| 5                                      | 1       | 0         | 16-QAM | 21.66  | 21.42  | 21.34   |
| 5                                      | 1       | 12        |        | 21.88  | 21.37  | 21.21   |
| 5                                      | 1       | 24        |        | 21.34  | 21.34  | 21.45   |
| 5                                      | 12      | 0         |        | 20.66  | 20.71  | 20.65   |
| 5                                      | 12      | 7         |        | 20.57  | 20.65  | 20.76   |
| 5                                      | 12      | 13        |        | 20.62  | 20.67  | 20.54   |
| 5                                      | 25      | 0         |        | 20.76  | 20.61  | 20.53   |



| LTE Band 5 Maximum Average Power [dBm] |         |           |        |        |        |         |
|----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                               | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 3                                      | 1       | 0         | QPSK   | 22.47  | 22.64  | 22.44   |
| 3                                      | 1       | 8         |        | 22.69  | 22.76  | 22.63   |
| 3                                      | 1       | 14        |        | 22.72  | 22.41  | 22.36   |
| 3                                      | 8       | 0         |        | 21.49  | 21.66  | 21.66   |
| 3                                      | 8       | 4         |        | 21.61  | 21.65  | 21.72   |
| 3                                      | 8       | 7         |        | 21.74  | 21.64  | 21.68   |
| 3                                      | 15      | 0         |        | 21.76  | 21.65  | 21.67   |
| 3                                      | 1       | 0         | 16-QAM | 21.39  | 21.43  | 21.40   |
| 3                                      | 1       | 8         |        | 21.32  | 21.35  | 21.43   |
| 3                                      | 1       | 14        |        | 21.43  | 21.35  | 21.50   |
| 3                                      | 8       | 0         |        | 20.61  | 20.68  | 20.66   |
| 3                                      | 8       | 4         |        | 20.79  | 20.69  | 20.64   |
| 3                                      | 8       | 7         |        | 20.92  | 20.76  | 20.69   |
| 3                                      | 15      | 0         |        | 20.82  | 20.75  | 20.74   |
| 1.4                                    | 1       | 0         | QPSK   | 22.75  | 22.59  | 22.78   |
| 1.4                                    | 1       | 3         |        | 22.64  | 22.66  | 22.68   |
| 1.4                                    | 1       | 5         |        | 22.69  | 22.66  | 22.55   |
| 1.4                                    | 3       | 0         |        | 22.65  | 22.63  | 22.74   |
| 1.4                                    | 3       | 1         |        | 22.73  | 22.81  | 22.82   |
| 1.4                                    | 3       | 3         |        | 22.80  | 22.82  | 22.69   |
| 1.4                                    | 6       | 0         |        | 21.57  | 21.67  | 21.63   |
| 1.4                                    | 1       | 0         | 16-QAM | 21.39  | 21.50  | 21.39   |
| 1.4                                    | 1       | 3         |        | 21.41  | 21.57  | 21.50   |
| 1.4                                    | 1       | 5         |        | 21.38  | 21.43  | 21.29   |
| 1.4                                    | 3       | 0         |        | 21.77  | 21.93  | 21.80   |
| 1.4                                    | 3       | 1         |        | 21.63  | 21.75  | 21.89   |
| 1.4                                    | 3       | 3         |        | 21.67  | 21.72  | 21.89   |
| 1.4                                    | 6       | 0         |        | 20.64  | 20.71  | 20.61   |



| LTE Band 12 Maximum Average Power [dBm] |         |           |        |        |        |         |
|-----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                                | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 10                                      | 1       | 0         | QPSK   | 23.10  | 23.24  | 23.16   |
| 10                                      | 1       | 25        |        | 23.21  | 23.54  | 23.45   |
| 10                                      | 1       | 49        |        | 23.07  | 23.17  | 23.12   |
| 10                                      | 25      | 0         |        | 22.07  | 22.14  | 22.10   |
| 10                                      | 25      | 12        |        | 22.14  | 22.25  | 22.18   |
| 10                                      | 25      | 25        |        | 22.31  | 22.46  | 22.36   |
| 10                                      | 50      | 0         |        | 22.15  | 22.35  | 22.17   |
| 10                                      | 1       | 0         | 16-QAM | 22.56  | 22.18  | 22.37   |
| 10                                      | 1       | 25        |        | 22.20  | 22.10  | 22.02   |
| 10                                      | 1       | 49        |        | 22.15  | 22.28  | 22.10   |
| 10                                      | 25      | 0         |        | 21.12  | 21.28  | 21.13   |
| 10                                      | 25      | 12        |        | 21.20  | 21.19  | 21.22   |
| 10                                      | 25      | 25        |        | 21.14  | 21.20  | 21.17   |
| 10                                      | 50      | 0         |        | 21.22  | 21.09  | 21.22   |
| 5                                       | 1       | 0         | QPSK   | 23.24  | 22.87  | 22.83   |
| 5                                       | 1       | 12        |        | 23.08  | 23.25  | 23.00   |
| 5                                       | 1       | 24        |        | 22.63  | 22.83  | 22.68   |
| 5                                       | 12      | 0         |        | 22.09  | 22.04  | 22.06   |
| 5                                       | 12      | 7         |        | 22.11  | 22.05  | 22.02   |
| 5                                       | 12      | 13        |        | 22.12  | 22.05  | 21.99   |
| 5                                       | 25      | 0         |        | 22.07  | 22.07  | 22.07   |
| 5                                       | 1       | 0         | 16-QAM | 21.93  | 21.91  | 21.77   |
| 5                                       | 1       | 12        |        | 21.71  | 21.79  | 21.62   |
| 5                                       | 1       | 24        |        | 21.57  | 21.68  | 21.62   |
| 5                                       | 12      | 0         |        | 21.01  | 20.89  | 21.00   |
| 5                                       | 12      | 7         |        | 20.99  | 20.91  | 20.89   |
| 5                                       | 12      | 13        |        | 21.00  | 21.00  | 20.98   |
| 5                                       | 25      | 0         |        | 21.04  | 21.22  | 21.04   |



| LTE Band 12 Maximum Average Power [dBm] |         |           |        |        |        |         |
|-----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                                | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 3                                       | 1       | 0         | QPSK   | 22.98  | 23.14  | 23.16   |
| 3                                       | 1       | 8         |        | 22.99  | 23.28  | 22.97   |
| 3                                       | 1       | 14        |        | 22.80  | 22.81  | 23.05   |
| 3                                       | 8       | 0         |        | 22.15  | 22.17  | 22.16   |
| 3                                       | 8       | 4         |        | 22.19  | 22.18  | 22.10   |
| 3                                       | 8       | 7         |        | 22.15  | 22.10  | 22.11   |
| 3                                       | 15      | 0         |        | 22.10  | 22.13  | 22.19   |
| 3                                       | 1       | 0         | 16-QAM | 21.93  | 21.68  | 22.06   |
| 3                                       | 1       | 8         |        | 21.61  | 21.72  | 21.83   |
| 3                                       | 1       | 14        |        | 21.76  | 21.90  | 21.92   |
| 3                                       | 8       | 0         |        | 21.23  | 21.16  | 21.28   |
| 3                                       | 8       | 4         |        | 21.20  | 20.88  | 21.22   |
| 3                                       | 8       | 7         |        | 21.25  | 21.27  | 21.33   |
| 3                                       | 15      | 0         |        | 20.97  | 21.09  | 21.18   |
| 1.4                                     | 1       | 0         | QPSK   | 23.09  | 23.02  | 22.74   |
| 1.4                                     | 1       | 3         |        | 23.12  | 23.14  | 22.96   |
| 1.4                                     | 1       | 5         |        | 22.96  | 23.00  | 22.85   |
| 1.4                                     | 3       | 0         |        | 23.13  | 23.23  | 23.03   |
| 1.4                                     | 3       | 1         |        | 23.13  | 23.12  | 23.12   |
| 1.4                                     | 3       | 3         |        | 23.03  | 23.07  | 23.09   |
| 1.4                                     | 6       | 0         |        | 22.11  | 22.08  | 22.13   |
| 1.4                                     | 1       | 0         | 16-QAM | 22.08  | 22.25  | 22.29   |
| 1.4                                     | 1       | 3         |        | 21.93  | 21.91  | 21.91   |
| 1.4                                     | 1       | 5         |        | 21.98  | 21.89  | 22.32   |
| 1.4                                     | 3       | 0         |        | 22.10  | 22.00  | 22.12   |
| 1.4                                     | 3       | 1         |        | 22.19  | 22.17  | 22.16   |
| 1.4                                     | 3       | 3         |        | 21.94  | 22.03  | 22.26   |
| 1.4                                     | 6       | 0         |        | 21.14  | 20.90  | 21.00   |



| LTE Band 13    Maximum Average Power [dBm] |         |           |        |        |        |         |
|--------------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                                   | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 10                                         | 1       | 0         | QPSK   |        | 23.02  |         |
| 10                                         | 1       | 25        |        |        | 22.79  |         |
| 10                                         | 1       | 49        |        |        | 23.24  |         |
| 10                                         | 25      | 0         |        |        | 22.11  |         |
| 10                                         | 25      | 12        |        |        | 21.99  |         |
| 10                                         | 25      | 25        |        |        | 22.05  |         |
| 10                                         | 50      | 0         |        |        | 22.00  |         |
| 10                                         | 1       | 0         | 16-QAM |        | 22.06  |         |
| 10                                         | 1       | 25        |        |        | 21.95  |         |
| 10                                         | 1       | 49        |        |        | 21.69  |         |
| 10                                         | 25      | 0         |        |        | 21.12  |         |
| 10                                         | 25      | 12        |        |        | 20.99  |         |
| 10                                         | 25      | 25        |        |        | 21.06  |         |
| 10                                         | 50      | 0         |        |        | 21.02  |         |
| 5                                          | 1       | 0         | QPSK   | 22.97  | 23.05  | 22.88   |
| 5                                          | 1       | 12        |        | 22.89  | 23.07  | 23.00   |
| 5                                          | 1       | 24        |        | 22.64  | 23.20  | 22.61   |
| 5                                          | 12      | 0         |        | 22.08  | 22.05  | 21.91   |
| 5                                          | 12      | 7         |        | 22.15  | 21.96  | 22.05   |
| 5                                          | 12      | 13        |        | 22.07  | 21.96  | 22.03   |
| 5                                          | 25      | 0         |        | 22.03  | 21.94  | 21.98   |
| 5                                          | 1       | 0         | 16-QAM | 22.04  | 21.92  | 21.89   |
| 5                                          | 1       | 12        |        | 21.78  | 21.62  | 21.65   |
| 5                                          | 1       | 24        |        | 21.91  | 21.81  | 22.28   |
| 5                                          | 12      | 0         |        | 20.81  | 20.91  | 20.98   |
| 5                                          | 12      | 7         |        | 20.97  | 20.81  | 21.04   |
| 5                                          | 12      | 13        |        | 20.96  | 20.83  | 20.82   |
| 5                                          | 25      | 0         |        | 21.07  | 21.09  | 20.97   |





| LTE Band 17 Maximum Average Power [dBm] |         |           |        |        |        |         |
|-----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                                | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 10                                      | 1       | 0         | QPSK   | 23.03  | 22.97  | 23.06   |
| 10                                      | 1       | 25        |        | 23.38  | 23.50  | 23.31   |
| 10                                      | 1       | 49        |        | 23.18  | 23.07  | 23.05   |
| 10                                      | 25      | 0         |        | 22.55  | 22.48  | 22.38   |
| 10                                      | 25      | 12        |        | 22.44  | 22.32  | 22.24   |
| 10                                      | 25      | 25        |        | 22.38  | 22.25  | 22.26   |
| 10                                      | 50      | 0         |        | 22.47  | 22.32  | 22.35   |
| 10                                      | 1       | 0         | 16-QAM | 22.29  | 22.01  | 22.27   |
| 10                                      | 1       | 25        |        | 22.12  | 22.47  | 22.26   |
| 10                                      | 1       | 49        |        | 22.48  | 22.17  | 21.69   |
| 10                                      | 25      | 0         |        | 21.51  | 21.30  | 21.40   |
| 10                                      | 25      | 12        |        | 21.66  | 21.33  | 21.29   |
| 10                                      | 25      | 25        |        | 21.54  | 21.46  | 21.33   |
| 10                                      | 50      | 0         |        | 21.27  | 21.29  | 21.36   |
| 5                                       | 1       | 0         | QPSK   | 23.10  | 23.18  | 23.10   |
| 5                                       | 1       | 12        |        | 23.38  | 23.25  | 23.22   |
| 5                                       | 1       | 24        |        | 23.48  | 23.26  | 23.02   |
| 5                                       | 12      | 0         |        | 22.25  | 22.31  | 22.32   |
| 5                                       | 12      | 7         |        | 22.31  | 22.21  | 22.28   |
| 5                                       | 12      | 13        |        | 22.41  | 22.25  | 22.16   |
| 5                                       | 25      | 0         |        | 22.40  | 22.26  | 22.21   |
| 5                                       | 1       | 0         | 16-QAM | 22.05  | 21.98  | 21.99   |
| 5                                       | 1       | 12        |        | 22.51  | 22.09  | 21.94   |
| 5                                       | 1       | 24        |        | 21.99  | 22.27  | 21.87   |
| 5                                       | 12      | 0         |        | 21.01  | 21.38  | 21.23   |
| 5                                       | 12      | 7         |        | 21.13  | 21.29  | 21.22   |
| 5                                       | 12      | 13        |        | 21.56  | 21.23  | 21.19   |
| 5                                       | 25      | 0         |        | 21.31  | 21.51  | 21.35   |



| LTE Band 66 Maximum Average Power [dBm] |         |           |        |        |        |         |
|-----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                                | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 20                                      | 1       | 0         | QPSK   | 22.86  | 23.11  | 23.00   |
| 20                                      | 1       | 49        |        | 23.02  | 22.86  | 23.63   |
| 20                                      | 1       | 99        |        | 22.88  | 22.75  | 22.85   |
| 20                                      | 50      | 0         |        | 21.78  | 22.45  | 22.16   |
| 20                                      | 50      | 24        |        | 22.03  | 22.12  | 22.16   |
| 20                                      | 50      | 50        |        | 22.10  | 22.29  | 22.09   |
| 20                                      | 100     | 0         |        | 22.14  | 22.02  | 22.17   |
| 20                                      | 1       | 0         | 16-QAM | 22.09  | 22.36  | 22.37   |
| 20                                      | 1       | 49        |        | 21.92  | 21.90  | 22.24   |
| 20                                      | 1       | 99        |        | 21.66  | 21.89  | 22.31   |
| 20                                      | 50      | 0         |        | 20.85  | 21.17  | 21.16   |
| 20                                      | 50      | 24        |        | 21.11  | 21.10  | 21.17   |
| 20                                      | 50      | 50        |        | 21.20  | 21.06  | 21.20   |
| 20                                      | 100     | 0         |        | 21.25  | 21.07  | 20.81   |
| 15                                      | 1       | 0         | QPSK   | 22.85  | 23.16  | 23.15   |
| 15                                      | 1       | 37        |        | 22.86  | 23.07  | 23.18   |
| 15                                      | 1       | 74        |        | 22.90  | 23.02  | 23.10   |
| 15                                      | 36      | 0         |        | 21.99  | 22.28  | 21.89   |
| 15                                      | 36      | 20        |        | 21.98  | 22.03  | 22.03   |
| 15                                      | 36      | 39        |        | 21.90  | 22.07  | 22.14   |
| 15                                      | 75      | 0         |        | 21.95  | 22.14  | 22.15   |
| 15                                      | 1       | 0         | 16-QAM | 21.91  | 21.98  | 21.93   |
| 15                                      | 1       | 37        |        | 21.95  | 21.74  | 22.16   |
| 15                                      | 1       | 74        |        | 21.93  | 21.57  | 21.92   |
| 15                                      | 36      | 0         |        | 20.89  | 21.21  | 20.96   |
| 15                                      | 36      | 20        |        | 20.99  | 21.06  | 21.17   |
| 15                                      | 36      | 39        |        | 20.92  | 21.04  | 21.13   |
| 15                                      | 75      | 0         |        | 21.00  | 21.09  | 21.20   |



| LTE Band 66 Maximum Average Power [dBm] |         |           |        |        |        |         |
|-----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                                | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 10                                      | 1       | 0         | QPSK   | 22.97  | 23.12  | 23.00   |
| 10                                      | 1       | 25        |        | 23.34  | 23.08  | 23.36   |
| 10                                      | 1       | 49        |        | 23.30  | 23.00  | 22.94   |
| 10                                      | 25      | 0         |        | 22.22  | 22.27  | 22.19   |
| 10                                      | 25      | 12        |        | 22.31  | 22.07  | 22.18   |
| 10                                      | 25      | 25        |        | 22.17  | 22.21  | 22.24   |
| 10                                      | 50      | 0         |        | 22.17  | 22.25  | 22.32   |
| 10                                      | 1       | 0         | 16-QAM | 22.26  | 22.75  | 22.32   |
| 10                                      | 1       | 25        |        | 22.31  | 22.58  | 22.25   |
| 10                                      | 1       | 49        |        | 22.23  | 21.93  | 21.80   |
| 10                                      | 25      | 0         |        | 21.30  | 21.37  | 21.30   |
| 10                                      | 25      | 12        |        | 21.36  | 21.10  | 21.14   |
| 10                                      | 25      | 25        |        | 21.41  | 21.36  | 21.16   |
| 10                                      | 50      | 0         |        | 21.32  | 20.97  | 21.22   |
| 5                                       | 1       | 0         | QPSK   | 22.88  | 22.90  | 23.26   |
| 5                                       | 1       | 12        |        | 23.09  | 23.11  | 23.17   |
| 5                                       | 1       | 24        |        | 23.00  | 22.93  | 23.04   |
| 5                                       | 12      | 0         |        | 21.94  | 21.91  | 22.16   |
| 5                                       | 12      | 7         |        | 22.02  | 21.97  | 22.09   |
| 5                                       | 12      | 13        |        | 22.03  | 21.85  | 22.02   |
| 5                                       | 25      | 0         |        | 22.00  | 21.90  | 22.21   |
| 5                                       | 1       | 0         | 16-QAM | 21.31  | 21.92  | 22.21   |
| 5                                       | 1       | 12        |        | 21.29  | 21.39  | 22.03   |
| 5                                       | 1       | 24        |        | 21.63  | 21.90  | 22.10   |
| 5                                       | 12      | 0         |        | 20.98  | 21.00  | 21.27   |
| 5                                       | 12      | 7         |        | 20.86  | 20.83  | 21.24   |
| 5                                       | 12      | 13        |        | 21.02  | 20.78  | 21.10   |
| 5                                       | 25      | 0         |        | 21.01  | 20.96  | 21.20   |



| LTE Band 66 Maximum Average Power [dBm] |         |           |        |        |        |         |
|-----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                                | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 3                                       | 1       | 0         | QPSK   | 23.01  | 23.27  | 23.20   |
| 3                                       | 1       | 8         |        | 22.95  | 23.12  | 23.33   |
| 3                                       | 1       | 14        |        | 22.98  | 23.04  | 23.43   |
| 3                                       | 8       | 0         |        | 21.84  | 21.86  | 22.04   |
| 3                                       | 8       | 4         |        | 22.00  | 21.90  | 22.03   |
| 3                                       | 8       | 7         |        | 21.91  | 21.86  | 22.00   |
| 3                                       | 15      | 0         |        | 21.95  | 21.85  | 22.04   |
| 3                                       | 1       | 0         | 16-QAM | 22.41  | 22.08  | 22.20   |
| 3                                       | 1       | 8         |        | 22.38  | 21.89  | 22.07   |
| 3                                       | 1       | 14        |        | 22.34  | 21.92  | 22.21   |
| 3                                       | 8       | 0         |        | 20.72  | 20.75  | 21.21   |
| 3                                       | 8       | 4         |        | 20.85  | 20.99  | 21.01   |
| 3                                       | 8       | 7         |        | 20.77  | 21.09  | 21.06   |
| 3                                       | 15      | 0         |        | 20.77  | 20.70  | 21.01   |
| 1.4                                     | 1       | 0         | QPSK   | 23.08  | 22.90  | 23.36   |
| 1.4                                     | 1       | 3         |        | 23.21  | 22.89  | 23.31   |
| 1.4                                     | 1       | 5         |        | 23.04  | 22.84  | 23.17   |
| 1.4                                     | 3       | 0         |        | 23.25  | 23.14  | 23.34   |
| 1.4                                     | 3       | 1         |        | 23.28  | 23.22  | 23.26   |
| 1.4                                     | 3       | 3         |        | 23.19  | 23.22  | 23.26   |
| 1.4                                     | 6       | 0         |        | 22.18  | 22.13  | 22.16   |
| 1.4                                     | 1       | 0         | 16-QAM | 21.80  | 21.80  | 21.76   |
| 1.4                                     | 1       | 3         |        | 21.93  | 22.04  | 22.32   |
| 1.4                                     | 1       | 5         |        | 21.74  | 21.66  | 21.56   |
| 1.4                                     | 3       | 0         |        | 21.71  | 22.04  | 22.43   |
| 1.4                                     | 3       | 1         |        | 21.89  | 21.98  | 22.43   |
| 1.4                                     | 3       | 3         |        | 22.12  | 22.06  | 22.39   |
| 1.4                                     | 6       | 0         |        | 20.87  | 20.79  | 20.90   |



| LTE Band 71 Maximum Average Power [dBm] |         |           |        |        |        |         |
|-----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                                | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 20                                      | 1       | 0         | QPSK   | 23.53  | 23.67  | 23.59   |
| 20                                      | 1       | 49        |        | 23.64  | 23.87  | 23.84   |
| 20                                      | 1       | 99        |        | 23.50  | 23.60  | 23.55   |
| 20                                      | 50      | 0         |        | 22.50  | 22.57  | 22.53   |
| 20                                      | 50      | 24        |        | 22.57  | 22.68  | 22.61   |
| 20                                      | 50      | 50        |        | 22.74  | 22.89  | 22.79   |
| 20                                      | 100     | 0         |        | 22.58  | 22.78  | 22.60   |
| 20                                      | 1       | 0         | 16-QAM | 22.99  | 22.61  | 22.80   |
| 20                                      | 1       | 49        |        | 22.63  | 22.53  | 22.44   |
| 20                                      | 1       | 99        |        | 22.58  | 22.71  | 22.53   |
| 20                                      | 50      | 0         |        | 21.55  | 21.71  | 21.56   |
| 20                                      | 50      | 24        |        | 21.63  | 21.62  | 21.65   |
| 20                                      | 50      | 50        |        | 21.57  | 21.63  | 21.60   |
| 20                                      | 100     | 0         |        | 21.65  | 21.52  | 21.65   |
| 15                                      | 1       | 0         | QPSK   | 23.65  | 23.30  | 23.26   |
| 15                                      | 1       | 37        |        | 23.51  | 23.64  | 23.43   |
| 15                                      | 1       | 74        |        | 23.16  | 23.26  | 23.16   |
| 15                                      | 36      | 0         |        | 22.52  | 22.47  | 22.49   |
| 15                                      | 36      | 20        |        | 22.54  | 22.48  | 22.45   |
| 15                                      | 36      | 39        |        | 22.55  | 22.48  | 22.42   |
| 15                                      | 75      | 0         |        | 22.50  | 22.50  | 22.50   |
| 15                                      | 1       | 0         | 16-QAM | 22.36  | 22.34  | 22.20   |
| 15                                      | 1       | 37        |        | 22.14  | 22.22  | 22.05   |
| 15                                      | 1       | 74        |        | 22.00  | 22.11  | 22.05   |
| 15                                      | 36      | 0         |        | 21.44  | 21.32  | 21.43   |
| 15                                      | 36      | 20        |        | 21.42  | 21.34  | 21.32   |
| 15                                      | 36      | 39        |        | 21.43  | 21.43  | 21.41   |
| 15                                      | 75      | 0         |        | 21.47  | 21.65  | 21.47   |



| LTE Band 71 Maximum Average Power [dBm] |         |           |        |        |        |         |
|-----------------------------------------|---------|-----------|--------|--------|--------|---------|
| BW [MHz]                                | RB Size | RB Offset | Mod    | Lowest | Middle | Highest |
| 10                                      | 1       | 0         | QPSK   | 23.41  | 23.57  | 23.59   |
| 10                                      | 1       | 25        |        | 23.42  | 23.71  | 23.40   |
| 10                                      | 1       | 49        |        | 23.23  | 23.24  | 23.48   |
| 10                                      | 25      | 0         |        | 22.58  | 22.60  | 22.59   |
| 10                                      | 25      | 12        |        | 22.62  | 22.61  | 22.53   |
| 10                                      | 25      | 25        |        | 22.58  | 22.53  | 22.54   |
| 10                                      | 50      | 0         |        | 22.53  | 22.56  | 22.62   |
| 10                                      | 1       | 0         | 16-QAM | 22.36  | 22.11  | 22.49   |
| 10                                      | 1       | 25        |        | 22.04  | 22.15  | 22.26   |
| 10                                      | 1       | 49        |        | 22.19  | 22.33  | 22.35   |
| 10                                      | 25      | 0         |        | 21.66  | 21.59  | 21.71   |
| 10                                      | 25      | 12        |        | 21.63  | 21.31  | 21.65   |
| 10                                      | 25      | 25        |        | 21.68  | 21.70  | 21.76   |
| 10                                      | 50      | 0         |        | 21.40  | 21.52  | 21.61   |
| 5                                       | 1       | 0         | QPSK   | 23.37  | 23.30  | 23.02   |
| 5                                       | 1       | 12        |        | 23.40  | 23.42  | 23.24   |
| 5                                       | 1       | 24        |        | 23.24  | 23.28  | 23.13   |
| 5                                       | 12      | 0         |        | 22.85  | 22.95  | 22.75   |
| 5                                       | 12      | 7         |        | 22.85  | 22.84  | 22.84   |
| 5                                       | 12      | 13        |        | 22.75  | 22.79  | 22.81   |
| 5                                       | 25      | 0         |        | 22.39  | 22.36  | 22.41   |
| 5                                       | 1       | 0         | 16-QAM | 22.36  | 22.53  | 22.57   |
| 5                                       | 1       | 12        |        | 22.21  | 22.19  | 22.19   |
| 5                                       | 1       | 24        |        | 22.26  | 22.17  | 22.60   |
| 5                                       | 12      | 0         |        | 21.82  | 21.72  | 21.84   |
| 5                                       | 12      | 7         |        | 21.91  | 21.89  | 21.88   |
| 5                                       | 12      | 13        |        | 21.66  | 21.75  | 21.98   |
| 5                                       | 25      | 0         |        | 21.42  | 21.18  | 21.28   |

**ERP/EIRP**

| LTE Band 2 (GT - LC = 4.0 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)              | 22.70  | 22.70  | 23.16  | 23.00  | 22.78  | 23.14  | 23.08  | 23.22  | 23.11  |
| Conducted Power (Watts)            | 0.1862 | 0.1862 | 0.2070 | 0.1995 | 0.1897 | 0.2061 | 0.2032 | 0.2099 | 0.2046 |
| EIRP(dBm)                          | 26.70  | 26.70  | 27.16  | 27.00  | 26.78  | 27.14  | 27.08  | 27.22  | 27.11  |
| EIRP(Watts)                        | 0.4677 | 0.4677 | 0.5200 | 0.5012 | 0.4764 | 0.5176 | 0.5105 | 0.5272 | 0.5140 |

| LTE Band 2 (GT - LC = 4.0 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)              | 22.98  | 23.17  | 23.16  | 23.21  | 23.22  | 23.14  | 23.01  | 23.31  | 23.06  |
| Conducted Power (Watts)            | 0.1986 | 0.2075 | 0.2070 | 0.2094 | 0.2099 | 0.2061 | 0.2000 | 0.2143 | 0.2023 |
| EIRP(dBm)                          | 26.98  | 27.17  | 27.16  | 27.21  | 27.22  | 27.14  | 27.01  | 27.31  | 27.06  |
| EIRP(Watts)                        | 0.4989 | 0.5212 | 0.5200 | 0.5260 | 0.5272 | 0.5176 | 0.5023 | 0.5383 | 0.5082 |



| LTE Band 2 (GT - LC = 4.0 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                           | 1850.7 | 1880   | 1909.3 | 1851.5 | 1880   | 1908.5 | 1852.5 | 1880   | 1907.5 |
| (MHz)                               |        |        |        |        |        |        |        |        |        |
| Conducted Power (dBm)               | 21.91  | 22.13  | 21.97  | 22.28  | 21.80  | 21.88  | 21.91  | 21.65  | 21.67  |
| Conducted Power (Watts)             | 0.1552 | 0.1633 | 0.1574 | 0.1690 | 0.1514 | 0.1542 | 0.1552 | 0.1462 | 0.1469 |
| EIRP(dBm)                           | 25.91  | 26.13  | 25.97  | 26.28  | 25.80  | 25.88  | 25.91  | 25.65  | 25.67  |
| EIRP(Watts)                         | 0.3899 | 0.4102 | 0.3954 | 0.4246 | 0.3802 | 0.3873 | 0.3899 | 0.3673 | 0.3690 |

| LTE Band 2 (GT - LC = 4.0 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                           | 1855   | 1880   | 1905   | 1857.5 | 1880   | 1902.5 | 1860   | 1880   | 1900   |
| (MHz)                               |        |        |        |        |        |        |        |        |        |
| Conducted Power (dBm)               | 22.30  | 22.04  | 22.11  | 22.19  | 22.35  | 21.60  | 21.91  | 22.13  | 21.96  |
| Conducted Power (Watts)             | 0.1698 | 0.1600 | 0.1626 | 0.1656 | 0.1718 | 0.1445 | 0.1552 | 0.1633 | 0.1570 |
| EIRP(dBm)                           | 26.30  | 26.04  | 26.11  | 26.19  | 26.35  | 25.60  | 25.91  | 26.13  | 25.96  |
| EIRP(Watts)                         | 0.4266 | 0.4018 | 0.4083 | 0.4159 | 0.4315 | 0.3631 | 0.3899 | 0.4102 | 0.3945 |





| LTE Band 4 (GT - LC = 4.50 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)               | 22.70  | 22.93  | 22.80  | 23.00  | 22.81  | 22.84  | 22.75  | 22.88  | 23.00  |
| Conducted Power (Watts)             | 0.1862 | 0.1963 | 0.1905 | 0.1995 | 0.1910 | 0.1923 | 0.1884 | 0.1941 | 0.1995 |
| EIRP(dBm)                           | 27.20  | 27.43  | 27.30  | 27.50  | 27.31  | 27.34  | 27.25  | 27.38  | 27.50  |
| EIRP(Watts)                         | 0.5248 | 0.5534 | 0.5370 | 0.5623 | 0.5383 | 0.5420 | 0.5309 | 0.5470 | 0.5623 |

| LTE Band 4 (GT - LC = 4.50 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)               | 22.85  | 22.60  | 23.03  | 22.87  | 23.06  | 22.87  | 22.77  | 23.07  | 22.87  |
| Conducted Power (Watts)             | 0.1928 | 0.1820 | 0.2009 | 0.1936 | 0.2023 | 0.1936 | 0.1892 | 0.2028 | 0.1936 |
| EIRP(dBm)                           | 27.35  | 27.10  | 27.53  | 27.37  | 27.56  | 27.37  | 27.27  | 27.57  | 27.37  |
| EIRP(Watts)                         | 0.5433 | 0.5129 | 0.5662 | 0.5458 | 0.5702 | 0.5458 | 0.5333 | 0.5715 | 0.5458 |



| LTE Band 4 (GT - LC = 4.50 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)                | 21.81  | 21.98  | 21.57  | 21.51  | 21.68  | 21.62  | 21.54  | 21.63  | 21.67  |
| Conducted Power (Watts)              | 0.1517 | 0.1578 | 0.1435 | 0.1416 | 0.1472 | 0.1452 | 0.1426 | 0.1455 | 0.1469 |
| EIRP(dBm)                            | 26.31  | 26.48  | 26.07  | 26.01  | 26.18  | 26.12  | 26.04  | 26.13  | 26.17  |
| EIRP(Watts)                          | 0.4276 | 0.4446 | 0.4046 | 0.3990 | 0.4150 | 0.4093 | 0.4018 | 0.4102 | 0.4140 |

| LTE Band 4 (GT - LC = 4.50 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)                | 21.56  | 21.89  | 22.09  | 21.70  | 21.57  | 21.70  | 21.62  | 21.80  | 21.89  |
| Conducted Power (Watts)              | 0.1432 | 0.1545 | 0.1618 | 0.1479 | 0.1435 | 0.1479 | 0.1452 | 0.1514 | 0.1545 |
| EIRP(dBm)                            | 26.06  | 26.39  | 26.59  | 26.20  | 26.07  | 26.20  | 26.12  | 26.30  | 26.39  |
| EIRP(Watts)                          | 0.4036 | 0.4355 | 0.4560 | 0.4169 | 0.4046 | 0.4169 | 0.4093 | 0.4266 | 0.4355 |

| LTE Band 5 (GT - LC = 4.00 dB) QPSK |        |        |        |        |        |        |        |        |        |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth                           | 1.4M   |        |        | 3M     |        |        | 5M     |        |        |
| Channel                             | 20407  | 20525  | 20643  | 20415  | 20525  | 20635  | 20425  | 20525  | 20625  |
|                                     | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) |
| Frequency                           | 824.7  | 836.5  | 848.3  | 825.5  | 836.5  | 847.5  | 826.5  | 836.5  | 846.5  |
| (MHz)                               |        |        |        |        |        |        |        |        |        |
| Conducted Power (dBm)               | 22.80  | 22.82  | 22.69  | 22.69  | 22.76  | 22.63  | 22.68  | 22.70  | 22.75  |
| Conducted Power (Watts)             | 0.1905 | 0.1914 | 0.1858 | 0.1858 | 0.1888 | 0.1832 | 0.1854 | 0.1862 | 0.1884 |
| ERP(dBm)                            | 24.65  | 24.67  | 24.54  | 24.54  | 24.61  | 24.48  | 24.53  | 24.55  | 24.60  |
| ERP(Watts)                          | 0.2917 | 0.2931 | 0.2844 | 0.2844 | 0.2891 | 0.2805 | 0.2838 | 0.2851 | 0.2884 |

| LTE Band 5 (GT - LC = 4.00 dB) QPSK |        |        |        |
|-------------------------------------|--------|--------|--------|
| Bandwidth                           | 10M    |        |        |
| Channel                             | 20450  | 20525  | 20600  |
|                                     | (Low)  | (Mid)  | (High) |
| Frequency                           | 829    | 836.5  | 844    |
| (MHz)                               |        |        |        |
| Conducted Power (dBm)               | 22.67  | 22.86  | 22.70  |
| Conducted Power (Watts)             | 0.1849 | 0.1932 | 0.1862 |
| ERP(dBm)                            | 24.52  | 24.71  | 24.55  |
| ERP(Watts)                          | 0.2831 | 0.2958 | 0.2851 |



| LTE Band 5 (GT - LC = 4.00 dB) 16QAM |        |        |        |        |        |        |        |        |        |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth                            | 1.4M   |        |        | 3M     |        |        | 5M     |        |        |
| Channel                              | 20407  | 20525  | 20643  | 20415  | 20525  | 20635  | 20425  | 20525  | 20625  |
|                                      | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) |
| Frequency                            | 824.7  | 836.5  | 848.3  | 825.5  | 836.5  | 847.5  | 826.5  | 836.5  | 846.5  |
| (MHz)                                |        |        |        |        |        |        |        |        |        |
| Conducted Power (dBm)                | 21.77  | 21.93  | 21.80  | 21.43  | 21.35  | 21.50  | 21.88  | 21.37  | 21.21  |
| Conducted Power (Watts)              | 0.1503 | 0.1560 | 0.1514 | 0.1390 | 0.1365 | 0.1413 | 0.1542 | 0.1371 | 0.1321 |
| ERP(dBm)                             | 23.62  | 23.78  | 23.65  | 23.28  | 23.20  | 23.35  | 23.73  | 23.22  | 23.06  |
| ERP(Watts)                           | 0.2301 | 0.2388 | 0.2317 | 0.2128 | 0.2089 | 0.2163 | 0.2360 | 0.2099 | 0.2023 |

| LTE Band 5 (GT - LC = 4.00 dB) 16QAM |        |        |        |
|--------------------------------------|--------|--------|--------|
| Bandwidth                            | 10M    |        |        |
| Channel                              | 20450  | 20525  | 20600  |
|                                      | (Low)  | (Mid)  | (High) |
| Frequency                            | 829    | 836.5  | 844    |
| (MHz)                                |        |        |        |
| Conducted Power (dBm)                | 21.58  | 21.71  | 21.29  |
| Conducted Power (Watts)              | 0.1439 | 0.1483 | 0.1346 |
| ERP(dBm)                             | 23.43  | 23.56  | 23.14  |
| ERP(Watts)                           | 0.2203 | 0.2270 | 0.2061 |

| LTE Band 12 (GT - LC = 3.00dB) 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)               | 23.13  | 23.23  | 23.03  | 22.99  | 23.28  | 22.97  | 23.08  | 23.25  | 23.00  |
| Conducted Power (Watts)             | 0.2056 | 0.2104 | 0.2009 | 0.1991 | 0.2128 | 0.1982 | 0.2032 | 0.2113 | 0.1995 |
| ERP(dBm)                            | 23.98  | 24.08  | 23.88  | 23.84  | 24.13  | 23.82  | 23.93  | 24.10  | 23.85  |
| ERP(Watts)                          | 0.2500 | 0.2559 | 0.2443 | 0.2421 | 0.2588 | 0.2410 | 0.2472 | 0.2570 | 0.2427 |

| LTE Band 12 (GT - LC = 3.00 dB) QPSK |        |        |        |
|--------------------------------------|--------|--------|--------|
| Bandwidth                            | 10M    |        |        |
| Channel                              | 23060  | 23095  | 23130  |
|                                      | (Low)  | (Mid)  | (High) |
| Frequency                            | 704    | 707.5  | 711    |
| (MHz)                                |        |        |        |
| Conducted Power (dBm)                | 23.21  | 23.54  | 23.45  |
| Conducted Power (Watts)              | 0.2094 | 0.2259 | 0.2213 |
| ERP(dBm)                             | 24.06  | 24.39  | 24.30  |
| ERP(Watts)                           | 0.2547 | 0.2748 | 0.2692 |



| LTE Band 12 (GT - LC = 3.00 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                             | 699.7  | 707.5  | 715.3  | 700.5  | 707.5  | 714.5  | 701.5  | 707.5  | 713.5  |
| (MHz)                                 |        |        |        |        |        |        |        |        |        |
| Conducted Power (dBm)                 | 21.98  | 21.89  | 22.32  | 21.93  | 21.68  | 22.06  | 21.93  | 21.91  | 21.77  |
| Conducted Power (Watts)               | 0.1578 | 0.1545 | 0.1706 | 0.1560 | 0.1472 | 0.1607 | 0.1560 | 0.1552 | 0.1503 |
| ERP(dBm)                              | 22.83  | 22.74  | 23.17  | 22.78  | 22.53  | 22.91  | 22.78  | 22.76  | 22.62  |
| ERP(Watts)                            | 0.1919 | 0.1879 | 0.2075 | 0.1897 | 0.1791 | 0.1954 | 0.1897 | 0.1888 | 0.1828 |

| LTE Band 12 (GT - LC = 3.00 dB) 16QAM |        |        |        |
|---------------------------------------|--------|--------|--------|
| Bandwidth                             | 10M    |        |        |
| Channel                               | 23060  | 23095  | 23130  |
|                                       | (Low)  | (Mid)  | (High) |
| Frequency                             | 704    | 707.5  | 711    |
| (MHz)                                 |        |        |        |
| Conducted Power (dBm)                 | 22.56  | 22.18  | 22.37  |
| Conducted Power (Watts)               | 0.1803 | 0.1652 | 0.1726 |
| ERP(dBm)                              | 23.41  | 23.03  | 23.22  |
| ERP(Watts)                            | 0.2193 | 0.2009 | 0.2099 |



| LTE Band 13 (GT - LC = 3.5 dB) QPSK |        |        |        |       |        |   |
|-------------------------------------|--------|--------|--------|-------|--------|---|
| Bandwidth                           | 5M     |        |        | 10M   |        |   |
| Channel                             | 23205  | 23230  | 23255  | 23230 |        |   |
|                                     | (Low)  | (Mid)  | (High) | -     | (Mid)  | - |
| Frequency                           | 779.5  | 782    | 784.5  | -     | 782    | - |
| (MHz)                               |        |        |        |       |        |   |
| Conducted Power (dBm)               | 22.64  | 23.20  | 22.61  |       | 23.24  | - |
| Conducted Power (Watts)             | 0.1837 | 0.2089 | 0.1824 |       | 0.2109 | - |
| ERP(dBm)                            | 23.99  | 24.55  | 23.96  |       | 24.59  | - |
| ERP(Watts)                          | 0.2506 | 0.2851 | 0.2489 |       | 0.2877 | - |

| LTE Band 13 (GT - LC = 3.5 dB) 16QAM |        |        |        |       |        |   |
|--------------------------------------|--------|--------|--------|-------|--------|---|
| Bandwidth                            | 5M     |        |        | 10M   |        |   |
| Channel                              | 23205  | 23230  | 23255  | 23230 |        |   |
|                                      | (Low)  | (Mid)  | (High) | -     | (Mid)  | - |
| Frequency                            | 779.5  | 782    | 784.5  | -     | 782    | - |
| (MHz)                                |        |        |        |       |        |   |
| Conducted Power (dBm)                | 21.91  | 21.81  | 22.28  |       | 22.06  | - |
| Conducted Power (Watts)              | 0.1552 | 0.1517 | 0.1690 |       | 0.1607 | - |
| ERP(dBm)                             | 23.26  | 23.16  | 23.63  |       | 23.41  | - |
| ERP(Watts)                           | 0.2118 | 0.2070 | 0.2307 |       | 0.2193 | - |



| LTE Band 17 (GT - LC = 3.00 dB) QPSK |        |        |        |        |        |        |
|--------------------------------------|--------|--------|--------|--------|--------|--------|
| Bandwidth                            | 5M     |        |        | 10M    |        |        |
| Channel                              | 23755  | 23790  | 23825  | 23780  | 23790  | 23800  |
|                                      | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) |
| Frequency                            | 706.5  | 710    | 713.5  | 709    | 710    | 711    |
| (MHz)                                |        |        |        |        |        |        |
| Conducted Power (dBm)                | 23.48  | 23.26  | 23.02  | 23.38  | 23.50  | 23.31  |
| Conducted Power (Watts)              | 0.2228 | 0.2118 | 0.2004 | 0.2178 | 0.2239 | 0.2143 |
| ERP(dBm)                             | 24.33  | 24.11  | 23.87  | 24.23  | 24.35  | 24.16  |
| ERP(Watts)                           | 0.2710 | 0.2576 | 0.2438 | 0.2649 | 0.2723 | 0.2606 |

| LTE Band 17 (GT - LC = 3.00 dB) 16QAM |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|
| Bandwidth                             | 5M     |        |        | 10M    |        |        |
| Channel                               | 23755  | 23790  | 23825  | 23780  | 23790  | 23800  |
|                                       | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) |
| Frequency                             | 706.5  | 710    | 713.5  | 709    | 710    | 711    |
| (MHz)                                 |        |        |        |        |        |        |
| Conducted Power (dBm)                 | 22.51  | 22.09  | 21.94  | 22.48  | 22.17  | 21.69  |
| Conducted Power (Watts)               | 0.1782 | 0.1618 | 0.1563 | 0.1770 | 0.1648 | 0.1476 |
| ERP(dBm)                              | 23.36  | 22.94  | 22.79  | 23.33  | 23.02  | 22.54  |
| ERP(Watts)                            | 0.2168 | 0.1968 | 0.1901 | 0.2153 | 0.2004 | 0.1795 |





| LTE Band 66 (GT - LC = 4.50 dB) QPSK |        |        |        |        |        |        |        |        |        |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth                            | 1.4M   |        |        | 3M     |        |        | 5M     |        |        |
| Channel                              | 131979 | 132322 | 132665 | 131987 | 132322 | 132657 | 131997 | 132322 | 132647 |
|                                      | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) |
| Frequency                            | 1710.7 | 1745   | 1779.3 | 1711.5 | 1745   | 1778.5 | 1712.5 | 1745   | 1777.5 |
| (MHz)                                |        |        |        |        |        |        |        |        |        |
| Conducted Power (dBm)                | 23.08  | 22.90  | 23.36  | 22.98  | 23.04  | 23.43  | 22.88  | 22.90  | 23.26  |
| Conducted Power (Watts)              | 0.2032 | 0.1950 | 0.2168 | 0.1986 | 0.2014 | 0.2203 | 0.1941 | 0.1950 | 0.2118 |
| EIRP(dBm)                            | 27.58  | 27.40  | 27.86  | 27.48  | 27.54  | 27.93  | 27.38  | 27.40  | 27.76  |
| EIRP(Watts)                          | 0.5728 | 0.5495 | 0.6109 | 0.5598 | 0.5675 | 0.6209 | 0.5470 | 0.5495 | 0.5970 |

| LTE Band 66 (GT - LC = 4.50 dB) QPSK |        |        |        |        |        |        |        |        |        |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth                            | 10M    |        |        | 15M    |        |        | 20M    |        |        |
| Channel                              | 132022 | 132322 | 132622 | 132047 | 132322 | 132597 | 132072 | 132322 | 132572 |
|                                      | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (Mid)  |
| Frequency                            | 1715   | 1745   | 1775   | 1717.5 | 1745   | 1772.5 | 1720   | 1745   | 1770   |
| (MHz)                                |        |        |        |        |        |        |        |        |        |
| Conducted Power (dBm)                | 23.34  | 23.08  | 23.36  | 22.86  | 23.07  | 23.18  | 23.02  | 22.86  | 23.63  |
| Conducted Power (Watts)              | 0.2158 | 0.2032 | 0.2168 | 0.1932 | 0.2028 | 0.2080 | 0.2004 | 0.1932 | 0.2307 |
| EIRP(dBm)                            | 27.84  | 27.58  | 27.86  | 27.36  | 27.57  | 27.68  | 27.52  | 27.36  | 28.13  |
| EIRP(Watts)                          | 0.6081 | 0.5728 | 0.6109 | 0.5445 | 0.5715 | 0.5861 | 0.5649 | 0.5445 | 0.6501 |

| LTE Band 66 (GT - LC = 4.50 dB) 16QAM |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth                             | 1.4M   |        |        | 3M     |        |        | 5M     |        |        |
| Channel                               | 131979 | 132322 | 132665 | 131987 | 132322 | 132657 | 131997 | 132322 | 132647 |
|                                       | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) |
| Frequency                             | 1710.7 | 1745   | 1779.3 | 1711.5 | 1745   | 1778.5 | 1712.5 | 1745   | 1777.5 |
| (MHz)                                 |        |        |        |        |        |        |        |        |        |
| Conducted Power (dBm)                 | 21.71  | 22.04  | 22.43  | 22.41  | 22.08  | 22.20  | 21.31  | 21.92  | 22.21  |
| Conducted Power (Watts)               | 0.1483 | 0.1600 | 0.1750 | 0.1742 | 0.1614 | 0.1660 | 0.1352 | 0.1556 | 0.1663 |
| EIRP(dBm)                             | 26.21  | 26.54  | 26.93  | 26.91  | 26.58  | 26.70  | 25.81  | 26.42  | 26.71  |
| EIRP(Watts)                           | 0.4178 | 0.4508 | 0.4932 | 0.4909 | 0.4550 | 0.4677 | 0.3811 | 0.4385 | 0.4688 |

| LTE Band 66 (GT - LC = 4.50 dB) 16QAM |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth                             | 10M    |        |        | 15M    |        |        | 20M    |        |        |
| Channel                               | 132022 | 132322 | 132622 | 132047 | 132322 | 132597 | 132072 | 132322 | 132572 |
|                                       | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (Mid)  |
| Frequency                             | 1715   | 1745   | 1775   | 1717.5 | 1745   | 1772.5 | 1720   | 1745   | 1770   |
| (MHz)                                 |        |        |        |        |        |        |        |        |        |
| Conducted Power (dBm)                 | 22.26  | 22.75  | 22.32  | 21.95  | 21.74  | 22.16  | 22.09  | 22.36  | 22.37  |
| Conducted Power (Watts)               | 0.1683 | 0.1884 | 0.1706 | 0.1567 | 0.1493 | 0.1644 | 0.1618 | 0.1722 | 0.1726 |
| EIRP(dBm)                             | 26.76  | 27.25  | 26.82  | 26.45  | 26.24  | 26.66  | 26.59  | 26.86  | 26.87  |
| EIRP(Watts)                           | 0.4742 | 0.5309 | 0.4808 | 0.4416 | 0.4207 | 0.4634 | 0.4560 | 0.4853 | 0.4864 |

| LTE Band 71 (GT - LC = 2.00 dB) QPSK |        |        |        |        |        |        |        |        |        |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth                            | 5M     |        |        | 10M    |        |        | 15M    |        |        |
| Channel                              | 133147 | 133297 | 133447 | 133172 | 133297 | 133422 | 133197 | 133297 | 133397 |
|                                      | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) |
| Frequency                            | 665.5  | 680.5  | 695.5  | 668    | 680.5  | 693    | 670.5  | 680.5  | 690.5  |
| (MHz)                                |        |        |        |        |        |        |        |        |        |
| Conducted Power (dBm)                | 23.40  | 23.42  | 23.24  | 23.42  | 23.71  | 23.40  | 23.65  | 23.30  | 23.26  |
| Conducted Power (Watts)              | 0.2188 | 0.2198 | 0.2109 | 0.2198 | 0.2350 | 0.2188 | 0.2317 | 0.2138 | 0.2118 |
| ERP(dBm)                             | 23.25  | 23.27  | 23.09  | 23.27  | 23.56  | 23.25  | 23.50  | 23.15  | 23.11  |
| ERP(Watts)                           | 0.2113 | 0.2123 | 0.2037 | 0.2123 | 0.2270 | 0.2113 | 0.2239 | 0.2065 | 0.2046 |

| LTE Band 71 (GT - LC = 2.00 dB) QPSK |        |        |        |
|--------------------------------------|--------|--------|--------|
| Bandwidth                            | 20M    |        |        |
| Channel                              | 133222 | 133297 | 133372 |
|                                      | (Low)  | (Mid)  | (High) |
| Frequency                            | 673    | 680.5  | 688    |
| (MHz)                                |        |        |        |
| Conducted Power (dBm)                | 23.64  | 23.87  | 23.84  |
| Conducted Power (Watts)              | 0.2312 | 0.2438 | 0.2421 |
| ERP(dBm)                             | 23.49  | 23.72  | 23.69  |
| ERP(Watts)                           | 0.2234 | 0.2355 | 0.2339 |



| LTE Band 71 (GT - LC = 2.00 dB) 16QAM |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Bandwidth                             | 5M     |        |        | 10M    |        |        | 15M    |        |        |
| Channel                               | 133147 | 133297 | 133447 | 133172 | 133297 | 133422 | 133197 | 133297 | 133397 |
|                                       | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) | (Low)  | (Mid)  | (High) |
| Frequency                             | 665.5  | 680.5  | 695.5  | 668    | 680.5  | 693    | 670.5  | 680.5  | 690.5  |
| (MHz)                                 |        |        |        |        |        |        |        |        |        |
| Conducted Power (dBm)                 | 22.26  | 22.17  | 22.60  | 22.36  | 22.11  | 22.49  | 22.36  | 22.34  | 22.20  |
| Conducted Power (Watts)               | 0.1683 | 0.1648 | 0.1820 | 0.1722 | 0.1626 | 0.1774 | 0.1722 | 0.1714 | 0.1660 |
| ERP(dBm)                              | 22.11  | 22.02  | 22.45  | 22.21  | 21.96  | 22.34  | 22.21  | 22.19  | 22.05  |
| ERP(Watts)                            | 0.1626 | 0.1592 | 0.1758 | 0.1663 | 0.1570 | 0.1714 | 0.1663 | 0.1656 | 0.1603 |

| LTE Band 71 (GT - LC = 2.00 dB) 16QAM |        |        |        |
|---------------------------------------|--------|--------|--------|
| Bandwidth                             | 20M    |        |        |
| Channel                               | 133222 | 133297 | 133372 |
|                                       | (Low)  | (Mid)  | (High) |
| Frequency                             | 673    | 680.5  | 688    |
| (MHz)                                 |        |        |        |
| Conducted Power (dBm)                 | 22.99  | 22.61  | 22.80  |
| Conducted Power (Watts)               | 0.1991 | 0.1824 | 0.1905 |
| ERP(dBm)                              | 22.84  | 22.46  | 22.65  |
| ERP(Watts)                            | 0.1923 | 0.1762 | 0.1841 |



## Radiated Spurious Emission

| LTE Band 2 / 1.4MHz / QPSK |                      |                 |                  |                         |                         |                          |                            |                             |                       |
|----------------------------|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel                    | Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) |
| Middle                     | 3758.92              | -61.80          | -13              | -48.80                  | -80.30                  | -68.55                   | 5.85                       | 12.60                       | H                     |
|                            | 5638.38              | -52.81          | -13              | -39.81                  | -74.98                  | -58.61                   | 7.30                       | 13.10                       | H                     |
|                            | 7517.84              | -54.73          | -13              | -41.73                  | -82.57                  | -57.88                   | 8.35                       | 11.50                       | H                     |
|                            | 3758.92              | -57.46          | -13              | -44.46                  | -76.00                  | -64.21                   | 5.85                       | 12.60                       | V                     |
|                            | 5638.38              | -51.46          | -13              | -38.46                  | -74.03                  | -57.26                   | 7.30                       | 13.10                       | V                     |
|                            | 7517.84              | -55.24          | -13              | -42.24                  | -82.86                  | -58.39                   | 8.35                       | 11.50                       | V                     |

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

| LTE Band 4 / 20MHz / QPSK |                      |                 |                  |                         |                         |                          |                            |                             |                       |
|---------------------------|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel                   | Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) |
| Middle                    | 3447.18              | -42.62          | -13              | -29.62                  | -59.59                  | -49.47                   | 5.65                       | 12.50                       | H                     |
|                           | 5170.77              | -53.11          | -13              | -40.11                  | -74.74                  | -58.78                   | 7.13                       | 12.80                       | H                     |
|                           | 6894.36              | -56.59          | -13              | -43.59                  | -83.22                  | -59.99                   | 8.40                       | 11.80                       | H                     |
|                           | 3447.18              | -42.64          | -13              | -29.64                  | -59.64                  | -49.49                   | 5.65                       | 12.50                       | V                     |
|                           | 5170.77              | -53.18          | -13              | -40.18                  | -75.26                  | -58.85                   | 7.13                       | 12.80                       | V                     |
|                           | 6894.36              | -57.00          | -13              | -44.00                  | -83.79                  | -60.40                   | 8.40                       | 11.80                       | V                     |

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



| LTE Band 5 / 5MHz / QPSK |                      |                 |                  |                         |                         |                          |                            |                             |                       |
|--------------------------|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel                  | Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) |
| Middle                   | 1668.68              | -59.06          | -13              | -46.06                  | -69.55                  | -62.31                   | 4.00                       | 9.40                        | H                     |
|                          | 2503.02              | -61.48          | -13              | -48.48                  | -76.48                  | -65.05                   | 4.88                       | 10.60                       | H                     |
|                          | 3337.36              | -63.99          | -13              | -50.99                  | -80.99                  | -68.92                   | 5.52                       | 12.60                       | H                     |
|                          | 1668.68              | -65.69          | -13              | -52.69                  | -75.90                  | -68.94                   | 4.00                       | 9.40                        | V                     |
|                          | 2503.02              | -64.45          | -13              | -51.45                  | -79.34                  | -68.02                   | 4.88                       | 10.60                       | V                     |
|                          | 3337.36              | -63.77          | -13              | -50.77                  | -80.80                  | -68.70                   | 5.52                       | 12.60                       | V                     |

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

| LTE Band 12 / 10MHz / QPSK |                      |                 |                  |                         |                         |                          |                            |                             |                       |
|----------------------------|----------------------|-----------------|------------------|-------------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel                    | Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | SPA<br>Reading<br>(dBm) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) |
| Middle                     | 1406                 | -48.35          | -13              | -35.35                  | -59.36                  | -51.60                   | 4.00                       | 9.40                        | H                     |
|                            | 2109                 | -65.12          | -13              | -52.12                  | -79.35                  | -68.69                   | 4.88                       | 10.60                       | H                     |
|                            | 2812                 | -64.45          | -13              | -51.45                  | -79.86                  | -69.38                   | 5.52                       | 12.60                       | H                     |
|                            | 1406                 | -50.93          | -13              | -37.93                  | -61.90                  | -54.18                   | 4.00                       | 9.40                        | V                     |
|                            | 2109                 | -60.94          | -13              | -47.94                  | -75.10                  | -64.51                   | 4.88                       | 10.60                       | V                     |
|                            | 2812                 | -64.31          | -13              | -51.31                  | -80.33                  | -69.24                   | 5.52                       | 12.60                       | V                     |

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



| LTE Band 13 / 5MHz / QPSK |                   |              |               |                   |                   |                    |                      |                       |                    |
|---------------------------|-------------------|--------------|---------------|-------------------|-------------------|--------------------|----------------------|-----------------------|--------------------|
| Channel                   | Frequency ( MHz ) | EIRP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | SPA Reading (dBm) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain (dBi) | Polarization (H/V) |
| Middle                    | 1559.5            | -61.90       | -40           | -21.90            | -72.87            | -65.15             | 4.00                 | 9.40                  | H                  |
|                           | 2339.25           | -61.75       | -13           | -48.75            | -76.96            | -65.32             | 4.88                 | 10.60                 | H                  |
|                           | 3119              | -63.71       | -13           | -50.71            | -80.97            | -68.64             | 5.52                 | 12.60                 | H                  |
|                           | 1559.5            | -66.23       | -40           | -26.23            | -76.70            | -69.48             | 4.00                 | 9.40                  | V                  |
|                           | 2339.25           | -64.67       | -13           | -51.67            | -79.93            | -68.24             | 4.88                 | 10.60                 | V                  |
|                           | 3119              | -63.71       | -13           | -50.71            | -80.90            | -68.64             | 5.52                 | 12.60                 | V                  |

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

| LTE Band 17 / 10MHz / QPSK |                   |              |               |                   |                   |                    |                      |                       |                    |
|----------------------------|-------------------|--------------|---------------|-------------------|-------------------|--------------------|----------------------|-----------------------|--------------------|
| Channel                    | Frequency ( MHz ) | EIRP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | SPA Reading (dBm) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain (dBi) | Polarization (H/V) |
| Middle                     | 1411.18           | -57.82       | -13           | -44.82            | -68.83            | -61.07             | 4.00                 | 9.40                  | H                  |
|                            | 2116.77           | -61.57       | -13           | -48.57            | -76.03            | -65.14             | 4.88                 | 10.60                 | H                  |
|                            | 2822.36           | -64.96       | -13           | -51.96            | -80.37            | -69.89             | 5.52                 | 12.60                 | H                  |
|                            | 3528.00           | -62.57       | -13           | -49.57            | -80.26            | -67.04             | 6.00                 | 12.62                 | H                  |
|                            | 4232.00           | -59.67       | -13           | -46.67            | -79.31            | -63.08             | 7.14                 | 12.70                 | H                  |
|                            | 1411.18           | -58.06       | -13           | -45.06            | -69.03            | -61.31             | 4.00                 | 9.40                  | V                  |
|                            | 2116.77           | -61.52       | -13           | -48.52            | -75.89            | -65.09             | 4.88                 | 10.60                 | V                  |
|                            | 2822.36           | -64.15       | -13           | -51.15            | -80.17            | -69.08             | 5.52                 | 12.60                 | V                  |
|                            | 3528.00           | -62.82       | -13           | -49.82            | -80.55            | -67.29             | 6.00                 | 12.62                 | V                  |
|                            | 4232.00           | -59.40       | -13           | -46.40            | -78.98            | -62.81             | 7.14                 | 12.70                 | V                  |

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



| LTE Band 66 / 3MHz / QPSK |                   |              |               |                   |                   |                    |                      |                       |                    |
|---------------------------|-------------------|--------------|---------------|-------------------|-------------------|--------------------|----------------------|-----------------------|--------------------|
| Channel                   | Frequency ( MHz ) | EIRP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | SPA Reading (dBm) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain (dBi) | Polarization (H/V) |
| Middle                    | 3487.3            | -40.27       | -13           | -27.27            | -57.53            | -47.12             | 5.65                 | 12.50                 | H                  |
|                           | 5230.95           | -57.40       | -13           | -44.40            | -78.72            | -63.07             | 7.13                 | 12.80                 | H                  |
|                           | 6974.6            | -56.75       | -13           | -43.75            | -83.70            | -60.15             | 8.40                 | 11.80                 | H                  |
|                           | 3487.3            | -50.93       | -13           | -37.93            | -68.23            | -57.78             | 5.65                 | 12.50                 | V                  |
|                           | 5230.95           | -51.12       | -13           | -38.12            | -72.6             | -56.79             | 7.13                 | 12.80                 | V                  |
|                           | 6974.6            | -56.47       | -13           | -43.47            | -83.49            | -59.87             | 8.40                 | 11.80                 | V                  |

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

| LTE Band 71 / 15MHz / QPSK |                   |              |               |                   |                   |                    |                      |                       |                    |
|----------------------------|-------------------|--------------|---------------|-------------------|-------------------|--------------------|----------------------|-----------------------|--------------------|
| Channel                    | Frequency ( MHz ) | EIRP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | SPA Reading (dBm) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain (dBi) | Polarization (H/V) |
| Middle                     | 1347.5            | -53.74       | -13           | -40.74            | -64.43            | -56.97             | 3.98                 | 9.36                  | H                  |
|                            | 2021.25           | -45.84       | -13           | -32.84            | -58.88            | -49.39             | 4.85                 | 10.55                 | H                  |
|                            | 2695              | -61.21       | -13           | -48.21            | -76.21            | -66.14             | 5.50                 | 12.58                 | H                  |
|                            | 3368.75           | -61.37       | -13           | -48.37            | -78.19            | -65.84             | 5.98                 | 12.60                 | H                  |
|                            | 1347.5            | -51.03       | -13           | -38.03            | -61.53            | -54.26             | 3.98                 | 9.36                  | V                  |
|                            | 2021.25           | -44.94       | -13           | -31.94            | -57.97            | -48.49             | 4.85                 | 10.55                 | V                  |
|                            | 2695              | -59.85       | -13           | -46.85            | -75.19            | -64.78             | 5.50                 | 12.58                 | V                  |
|                            | 3368.75           | -57.70       | -13           | -44.70            | -74.53            | -62.17             | 5.98                 | 12.60                 | V                  |

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





## **Appendix D. Product Equality Declaration**

# Fibocom Wireless Inc.

5/F, Tower A, Technology Building II, 1057# Nanhai Avenue, Shenzhen

**Date: December 19, 2018**

## Product Equality Declaration

We, Fibocom Wireless Inc., declare on our sole responsibility for the product of NL668-AM-00 as below:

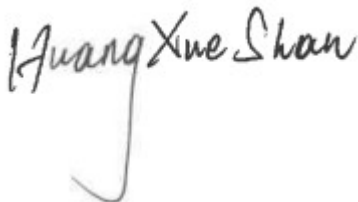
The differences between LCC and previous model, LCC are as below:

- 1, The power supply is different between LCC and previous model, LCC's power supply is DC power source by the ADP substrate, previous model's power supply is MiniPCIe interface
- 2, The I/O interface is different between LCC and previous model, LCC's I/O interface is ADP substrate. previous model's I/O interface is MiniPCIe interface
- 3, The RF antenna trace is different between LCC and previous model, LCC's RF antenna trace is ADP substrate. previous model's RF antenna trace is MiniPCIe RF antenna trace

Except listings above, the others are all the same as previous version.

Should you have any questions or comments regarding this matter, please have my best attention.

Sincerely yours,



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