

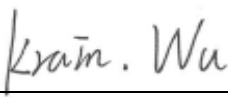
# FCC Radio Test Report

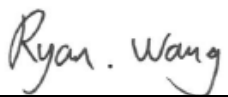
## FCC ID: XMR202005SC200RNA

This report concerns: Original Grant

**Project No.** : 2005H018  
**Equipment** : Multi-mode Smart LTE Module  
**Brand Name** : Quectel  
**Test Model** : SC200R-NA  
**Series Model** : N/A  
**Applicant** : Quectel Wireless Solutions Co., Ltd.  
**Address** : Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233.  
**Manufacturer** : Quectel Wireless Solutions Co., Ltd.  
**Address** : Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233.  
**Date of Receipt** : May 08, 2020  
**Date of Test** : May 08, 2020 ~ Jun. 05, 2020  
**Issued Date** : Aug. 10, 2020  
**Report Version** : R00  
**Test Sample** : Engineering Sample No.: SH2020050840, SH2020050840-1  
**Standard(s)** : 47 CFR FCC Part 27 Subpart L  
47 CFR FCC Part 27 Subpart M  
47 CFR FCC Part 27 Subpart H  
47 CFR FCC Part 27 Subpart F  
47 CFR FCC Part 27 Subpart E  
47 CFR FCC Part 27 Subpart N  
47 CFR FCC Part 2  
ANSI/TIA/EIA-603-E-2016  
FCC KDB 971168 D01 Power Meas License Digital Systems v03r01

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

  
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**Approved by** : Ryan Wang



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**Declaration**

**BTL** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

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**BTL** is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

**Limitation**

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and is not use in determining the Pass/Fail results.

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**REPORT ISSUED HISTORY**

| Report Version | Description     | Issued Date   |
|----------------|-----------------|---------------|
| R00            | Original Issue. | Aug. 10, 2020 |

## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

| FCC Part 27 Subpart L,M,H,F,E,N & Part 2                                 |                                                                   |          |        |
|--------------------------------------------------------------------------|-------------------------------------------------------------------|----------|--------|
| Standard(s) Section                                                      | Test Item                                                         | Judgment | Remark |
| 2.1046<br>27.50(d)(4)<br>27.50(h)(2)<br>27.50(b)(10)<br>27.50(c)(10)     | Effective Radiated Power & Equivalent<br>Isotropic Radiated Power | PASS     | -----  |
| 2.1049                                                                   | Occupied Bandwidth                                                | PASS     | -----  |
| 2.1051<br>27.53(c)(2)(4)<br>27.53(g)<br>27.53(h)<br>27.53(m)(4)          | Conducted Spurious Emissions                                      | PASS     | -----  |
| 2.1053<br>27.53(c)(2)<br>27.53(f)<br>27.53(g)<br>27.53(h)<br>27.53(m)(4) | Radiated Spurious Emissions                                       | PASS     | -----  |
| 2.1051<br>27.53(c)(2)(4)<br>27.53(g)<br>27.53(h)<br>27.53(m)(4)          | Band Edge Measurements                                            | PASS     | -----  |
| -                                                                        | Peak To Average Ratio                                             | PASS     | -----  |
| 2.1055<br>27.54                                                          | Frequency Stability                                               | PASS     | -----  |

Note:

For the verdict, the “N/A” denotes “not applicable”, the “N/T” denotes “not tested”.

## 1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210, China.

BTL's Test Firm Registration Number for FCC: 476765

BTL's Designation Number for FCC: CN1241

## 1.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty figures shall be calculated according the methods described in the ETSI TR 100 028 and shall correspond to an expansion factor (coverage factor)  $k=1.96$  or  $k=2$ (which provide confidence levels of respectively 90% and 95.45% in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Measurement Uncertainty for a Level of Confidence of 95 %,  $U=2 \times U_c(y)$ .

The BTL measurement uncertainty as below table:

### A. Radiated Measurement :

| Test Site       | Method | Measurement Frequency Range | Ant.<br>H / V | U,(dB) |
|-----------------|--------|-----------------------------|---------------|--------|
| SH-CB01<br>(3m) | CISPR  | 9KHz ~ 30MHz                | V             | 3.79   |
|                 |        | 9KHz ~ 30MHz                | H             | 3.57   |
|                 |        | 30MHz ~ 200MHz              | V             | 4.12   |
|                 |        | 30MHz ~ 200MHz              | H             | 3.20   |
|                 |        | 200MHz ~ 1,000MHz           | V             | 3.12   |
|                 |        | 200MHz ~ 1,000MHz           | H             | 3.18   |

| Test Site       | Method | Measurement Frequency Range | U,(dB) |
|-----------------|--------|-----------------------------|--------|
| SH-CB01<br>(3m) | CISPR  | 1GHz ~ 6GHz                 | 4.40   |
|                 |        | 6GHz ~ 18GHz                | 4.86   |

| Test Site       | Method | Measurement Frequency Range | U,(dB) |
|-----------------|--------|-----------------------------|--------|
| SH-CB01<br>(3m) | CISPR  | 18 ~ 26.5 GHz               | 3.64   |
|                 |        | 26.5 ~ 40 GHz               | 3.78   |

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

## 1.3 TEST ENVIRONMENT CONDITIONS

| Test Item                    | Temperature        | Humidity | Test Voltage | Tested By |
|------------------------------|--------------------|----------|--------------|-----------|
| Output Power & ERP           | 23 °C              | 60%      | DC 3.8V      | Forest Li |
| Occupied Bandwidth           | 23 °C              | 60%      | DC 3.8V      | Forest Li |
| Conducted Spurious Emissions | 23 °C              | 60%      | DC 3.8V      | Forest Li |
| Radiated Spurious Emissions  | 23 °C              | 46%      | DC 3.8V      | Forest Li |
| Band Edge                    | 23 °C              | 60%      | DC 3.8V      | Forest Li |
| Peak to Average Ratio        | 23 °C              | 60%      | DC 3.8V      | Forest Li |
| Frequency Stability          | Normal and Extreme |          |              | Forest Li |

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

|                     |                                         |                                  |
|---------------------|-----------------------------------------|----------------------------------|
| Equipment           | Multi-mode Smart LTE Module             |                                  |
| Brand Name          | Quectel                                 |                                  |
| Test Model          | SC200R-NA                               |                                  |
| Series Model        | N/A                                     |                                  |
| Model Difference(s) | N/A                                     |                                  |
| Software Version    | SC200RNANAR04A01                        |                                  |
| Hardware Version    | R1.0                                    |                                  |
| Power Source        | DC power supply.                        |                                  |
| Power Rating        | DC 3.8V                                 |                                  |
| Antenna Type        | Dipole                                  |                                  |
| Antenna Gain        | WCDMA Band IV                           | 2 dBi                            |
|                     | LTE Band 4 & 66                         |                                  |
|                     | LTE Band 7&41                           | 3 dBi                            |
|                     | LTE Band 12/17                          | 3.95 dBi                         |
|                     | LTE Band 13                             | 4.45 dBi                         |
|                     | LTE Band 71                             | 1.66 dBi                         |
| Modulation Type     | WCDMA                                   | UL: QPSK                         |
|                     | LTE                                     | UL: QPSK,16QAM<br>DL: QPSK,16QAM |
| Operation Frequency | WCDMA Band IV                           | 1712.4MHz ~1752.6MHz             |
|                     | LTE Band 4 (Channel Bandwidth: 1.4MHz)  | 1710.7MHz ~ 1754.3MHz            |
|                     | LTE Band 4 (Channel Bandwidth: 3MHz)    | 1711.5MHz ~ 1753.5MHz            |
|                     | LTE Band 4 (Channel Bandwidth: 5MHz)    | 1712.5MHz ~ 1752.5MHz            |
|                     | LTE Band 4 (Channel Bandwidth: 10MHz)   | 1715.0MHz ~ 1750.0MHz            |
|                     | LTE Band 4 (Channel Bandwidth: 15MHz)   | 1717.5MHz ~ 1747.5MHz            |
|                     | LTE Band 4 (Channel Bandwidth: 20MHz)   | 1720.0MHz ~ 1745.0MHz            |
|                     | LTE Band 7 (Channel Bandwidth: 5MHz)    | 2502.5MHz ~ 2567.5MHz            |
|                     | LTE Band 7 (Channel Bandwidth: 10MHz)   | 2505.0MHz ~ 2565.0MHz            |
|                     | LTE Band 7 (Channel Bandwidth: 15MHz)   | 2507.5MHz ~ 2562.5MHz            |
|                     | LTE Band 7 (Channel Bandwidth: 20MHz)   | 2510.0MHz ~ 2560.0MHz            |
|                     | LTE Band 12 (Channel Bandwidth: 1.4MHz) | 699.7MHz ~ 715.3MHz              |
|                     | LTE Band 12 (Channel Bandwidth: 3MHz)   | 700.5MHz ~ 714.5MHz              |
|                     | LTE Band 12 (Channel Bandwidth: 5MHz)   | 701.5MHz ~ 713.5MHz              |
|                     | LTE Band 12 (Channel Bandwidth: 10MHz)  | 704.0MHz ~ 711.0MHz              |
|                     | LTE Band 13 (Channel Bandwidth: 5MHz)   | 779.5MHz ~ 784.5MHz              |
|                     | LTE Band 13 (Channel Bandwidth: 10MHz)  | 782.0MHz                         |

|                     |                                         |                       |       |     |
|---------------------|-----------------------------------------|-----------------------|-------|-----|
| Operation Frequency | LTE Band 17 (Channel Bandwidth: 5MHz)   | 706.5MHz ~ 713.5MHz   |       |     |
|                     | LTE Band 17 (Channel Bandwidth: 10MHz)  | 709.0MHz ~ 711.0MHz   |       |     |
|                     | LTE Band 41 (Channel Bandwidth: 5MHz)   | 2498.5MHz ~ 2687.5MHz |       |     |
|                     | LTE Band 41 (Channel Bandwidth: 10MHz)  | 2501.0MHz ~ 2685.0MHz |       |     |
|                     | LTE Band 41 (Channel Bandwidth: 15MHz)  | 2503.5MHz ~ 2682.5MHz |       |     |
|                     | LTE Band 41 (Channel Bandwidth: 20MHz)  | 2506.0MHz ~ 2680.0MHz |       |     |
|                     | LTE Band 66 (Channel Bandwidth: 1.4MHz) | 1710.7MHz ~ 1779.5MHz |       |     |
|                     | LTE Band 66 (Channel Bandwidth: 3MHz)   | 1711.5MHz ~ 1778.5MHz |       |     |
|                     | LTE Band 66 (Channel Bandwidth: 5MHz)   | 1712.5MHz ~ 1777.5MHz |       |     |
|                     | LTE Band 66 (Channel Bandwidth: 10MHz)  | 1715.0MHz ~ 1775.0MHz |       |     |
|                     | LTE Band 66 (Channel Bandwidth: 15MHz)  | 1717.5MHz ~ 1772.5MHz |       |     |
|                     | LTE Band 66 (Channel Bandwidth: 20MHz)  | 1720.0MHz ~ 1770.0MHz |       |     |
|                     | LTE Band 71 (Channel Bandwidth: 5MHz)   | 665.5MHz ~ 695.5MHz   |       |     |
|                     | LTE Band 71 (Channel Bandwidth: 10MHz)  | 668.0MHz ~ 693.0MHz   |       |     |
|                     | LTE Band 71 (Channel Bandwidth: 15MHz)  | 670.5MHz ~ 690.5MHz   |       |     |
|                     | LTE Band 71 (Channel Bandwidth: 20MHz)  | 673.0MHz ~ 688.0MHz   |       |     |
| Max. EIRP Power     | WCDMA Band IV                           | QPSK                  | 24.79 | dBm |
|                     | LTE Band 4 (Channel Bandwidth: 1.4MHz)  | QPSK                  | 25.57 | dBm |
|                     |                                         | 16QAM                 | 24.51 | dBm |
|                     | LTE Band 4 (Channel Bandwidth: 3MHz)    | QPSK                  | 25.58 | dBm |
|                     |                                         | 16QAM                 | 24.79 | dBm |
|                     | LTE Band 4 (Channel Bandwidth: 5MHz)    | QPSK                  | 25.40 | dBm |
|                     |                                         | 16QAM                 | 24.12 | dBm |
|                     | LTE Band 4 (Channel Bandwidth: 10MHz)   | QPSK                  | 25.74 | dBm |
|                     |                                         | 16QAM                 | 24.50 | dBm |
|                     | LTE Band 4 (Channel Bandwidth: 15MHz)   | QPSK                  | 25.52 | dBm |
|                     |                                         | 16QAM                 | 24.96 | dBm |
|                     | LTE Band 4 (Channel Bandwidth: 20MHz)   | QPSK                  | 25.59 | dBm |
|                     |                                         | 16QAM                 | 24.67 | dBm |
|                     | LTE Band 7 (Channel Bandwidth: 5MHz)    | QPSK                  | 27.48 | dBm |
|                     |                                         | 16QAM                 | 26.08 | dBm |
|                     | LTE Band 7 (Channel Bandwidth: 10MHz)   | QPSK                  | 27.55 | dBm |
|                     |                                         | 16QAM                 | 26.87 | dBm |
|                     | LTE Band 7 (Channel Bandwidth: 15MHz)   | QPSK                  | 27.36 | dBm |
|                     |                                         | 16QAM                 | 26.88 | dBm |
|                     | LTE Band 7 (Channel Bandwidth: 20MHz)   | QPSK                  | 27.45 | dBm |
|                     |                                         | 16QAM                 | 26.36 | dBm |
|                     | LTE Band 66 (Channel Bandwidth: 1.4MHz) | QPSK                  | 26.54 | dBm |
|                     |                                         | 16QAM                 | 25.40 | dBm |
|                     | LTE Band 66 (Channel Bandwidth: 3MHz)   | QPSK                  | 26.59 | dBm |
|                     |                                         | 16QAM                 | 25.43 | dBm |
|                     | LTE Band 66 (Channel Bandwidth: 5MHz)   | QPSK                  | 26.27 | dBm |
|                     |                                         | 16QAM                 | 24.71 | dBm |

|                 |                                         |       |       |     |
|-----------------|-----------------------------------------|-------|-------|-----|
| Max. EIRP Power | LTE Band 66 (Channel Bandwidth: 10MHz)  | QPSK  | 26.67 | dBm |
|                 |                                         | 16QAM | 25.70 | dBm |
|                 | LTE Band 66 (Channel Bandwidth: 15MHz)  | QPSK  | 26.53 | dBm |
|                 |                                         | 16QAM | 25.50 | dBm |
|                 | LTE Band 66 (Channel Bandwidth: 20MHz)  | QPSK  | 25.90 | dBm |
|                 |                                         | 16QAM | 24.86 | dBm |
| Max. ERP Power  | LTE Band 12 (Channel Bandwidth: 1.4MHz) | QPSK  | 26.17 | dBm |
|                 |                                         | 16QAM | 25.64 | dBm |
|                 | LTE Band 12 (Channel Bandwidth: 3MHz)   | QPSK  | 26.24 | dBm |
|                 |                                         | 16QAM | 25.44 | dBm |
|                 | LTE Band 12 (Channel Bandwidth: 5MHz)   | QPSK  | 26.43 | dBm |
|                 |                                         | 16QAM | 25.57 | dBm |
|                 | LTE Band 12 (Channel Bandwidth: 10MHz)  | QPSK  | 26.34 | dBm |
|                 |                                         | 16QAM | 25.48 | dBm |
|                 | LTE Band 13 (Channel Bandwidth: 5MHz)   | QPSK  | 26.87 | dBm |
|                 |                                         | 16QAM | 25.39 | dBm |
|                 | LTE Band 13 (Channel Bandwidth: 10MHz)  | QPSK  | 26.82 | dBm |
|                 |                                         | 16QAM | 25.59 | dBm |
|                 | LTE Band 17 (Channel Bandwidth: 5MHz)   | QPSK  | 26.51 | dBm |
|                 |                                         | 16QAM | 25.45 | dBm |
|                 | LTE Band 17 (Channel Bandwidth: 10MHz)  | QPSK  | 26.62 | dBm |
|                 |                                         | 16QAM | 25.70 | dBm |
|                 | LTE Band 41 (Channel Bandwidth: 5MHz)   | QPSK  | 26.79 | dBm |
|                 |                                         | 16QAM | 25.61 | dBm |
|                 | LTE Band 41 (Channel Bandwidth: 10MHz)  | QPSK  | 26.86 | dBm |
|                 |                                         | 16QAM | 26.79 | dBm |
|                 | LTE Band 41 (Channel Bandwidth: 15MHz)  | QPSK  | 26.71 | dBm |
|                 |                                         | 16QAM | 26.13 | dBm |
|                 | LTE Band 41 (Channel Bandwidth: 20MHz)  | QPSK  | 27.00 | dBm |
|                 |                                         | 16QAM | 26.28 | dBm |
|                 | LTE Band 71 (Channel Bandwidth: 5MHz)   | QPSK  | 23.12 | dBm |
|                 |                                         | 16QAM | 21.84 | dBm |
|                 | LTE Band 71 (Channel Bandwidth: 10MHz)  | QPSK  | 23.32 | dBm |
|                 |                                         | 16QAM | 22.59 | dBm |
|                 | LTE Band 71 (Channel Bandwidth: 15MHz)  | QPSK  | 23.24 | dBm |
|                 |                                         | 16QAM | 22.63 | dBm |
|                 | LTE Band 71 (Channel Bandwidth: 20MHz)  | QPSK  | 23.29 | dBm |
|                 |                                         | 16QAM | 22.49 | dBm |

Note:

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

## 2.2 DESCRIPTION OF TEST MODES AND TEST CONDITION

Following channel(s) was (were) selected for the final test as listed below:

| WCDMA MODE                   |                   |                  |       |
|------------------------------|-------------------|------------------|-------|
| Test Item                    | Available Channel | Tested Channel   | Mode  |
| Output Power & EIRP          | 1312 to 1513      | 1312, 1413, 1513 | WCDMA |
| Occupied Bandwidth           | 1312 to 1513      | 1312, 1413, 1513 | WCDMA |
| Conducted Spurious Emissions | 1312 to 1513      | 1413             | WCDMA |
| Radiated Spurious Emissions  | 1312 to 1513      | 1413             | WCDMA |
| Band Edge                    | 1312 to 1513      | 1312, 1513       | WCDMA |
| Peak to Average Ratio        | 1312 to 1513      | 1312, 1413, 1513 | WCDMA |
| Frequency Stability          | 1312 to 1513      | 1413             | WCDMA |

| LTE BAND 4 MODE             |                   |                     |                   |             |                |
|-----------------------------|-------------------|---------------------|-------------------|-------------|----------------|
| Test Item                   | Available Channel | Tested Channel      | Channel Bandwidth | Modulation  | Mode           |
| Output Power & EIRP         | 19957 to 20393    | 19957, 20175, 20393 | 1.4MHz            | QPSK, 16QAM | 1RB/3RB/6RB    |
|                             | 19965 to 20385    | 19965, 20175, 20385 | 3MHz              | QPSK, 16QAM | 1RB/8RB/15RB   |
|                             | 19975 to 20375    | 19975, 20175, 20375 | 5MHz              | QPSK, 16QAM | 1RB/12RB/25RB  |
|                             | 20000 to 20350    | 20000, 20175, 20350 | 10MHz             | QPSK, 16QAM | 1RB/25RB/50RB  |
|                             | 20025 to 20325    | 20025, 20175, 20325 | 15MHz             | QPSK, 16QAM | 1RB/36RB/75RB  |
|                             | 20050 to 20300    | 20050, 20175, 20300 | 20MHz             | QPSK, 16QAM | 1RB/50RB/100RB |
| Occupied Bandwidth          | 19957 to 20393    | 19957, 20175, 20393 | 1.4MHz            | QPSK, 16QAM | 6RB            |
|                             | 19965 to 20385    | 19965, 20175, 20385 | 3MHz              | QPSK, 16QAM | 15RB           |
|                             | 19975 to 20375    | 19975, 20175, 20375 | 5MHz              | QPSK, 16QAM | 25RB           |
|                             | 20000 to 20350    | 20000, 20175, 20350 | 10MHz             | QPSK, 16QAM | 50RB           |
|                             | 20025 to 20325    | 20025, 20175, 20325 | 15MHz             | QPSK, 16QAM | 75 RB          |
|                             | 20050 to 20300    | 20050, 20175, 20300 | 20MHz             | QPSK, 16QAM | 100RB          |
| Conducted Spurious Emission | 19957 to 20393    | 20175               | 1.4MHz            | QPSK        | 1RB            |
|                             | 19975 to 20375    | 20175               | 5MHz              | QPSK        | 1RB            |
|                             | 20050 to 20300    | 20175               | 20MHz             | QPSK        | 1RB            |
| Radiated Spurious Emission  | 19957 to 20393    | 20175               | 1.4MHz            | QPSK        | 1RB            |
|                             | 19975 to 20375    | 20175               | 5MHz              | QPSK        | 1RB            |
|                             | 20050 to 20300    | 20175               | 20MHz             | QPSK        | 1RB            |

| LTE BAND 4 MODE       |                   |                     |                   |             |           |
|-----------------------|-------------------|---------------------|-------------------|-------------|-----------|
| Test Item             | Available Channel | Tested Channel      | Channel Bandwidth | Modulation  | Mode      |
| Band Edge             | 19957 to 20393    | 19957               | 1.4MHz            | QPSK        | 1RB/6RB   |
|                       |                   | 20393               | 1.4MHz            | QPSK        |           |
|                       | 19965 to 20385    | 19965               | 3MHz              | QPSK        | 1RB/15RB  |
|                       |                   | 20385               | 3MHz              | QPSK        |           |
|                       | 19975 to 20375    | 19975               | 5MHz              | QPSK        | 1RB/25RB  |
|                       |                   | 20375               | 5MHz              | QPSK        |           |
|                       | 20000 to 20350    | 20000               | 10MHz             | QPSK        | 1RB/50RB  |
|                       |                   | 20350               | 10MHz             | QPSK        |           |
|                       | 20025 to 20325    | 20025               | 15MHz             | QPSK        | 1RB/75RB  |
|                       |                   | 20325               | 15MHz             | QPSK        |           |
|                       | 20050 to 20300    | 20050               | 20MHz             | QPSK        | 1RB/100RB |
|                       |                   | 20300               | 20MHz             | QPSK        |           |
| Peak To Average Ratio | 19957 to 20393    | 19957, 20175, 20393 | 1.4MHz            | QPSK, 16QAM | 6RB       |
|                       | 19965 to 20385    | 19965, 20175, 20385 | 3MHz              | QPSK, 16QAM | 15RB      |
|                       | 19975 to 20375    | 19975, 20175, 20375 | 5MHz              | QPSK, 16QAM | 25RB      |
|                       | 20000 to 20350    | 20000, 20175, 20350 | 10MHz             | QPSK, 16QAM | 50RB      |
|                       | 20025 to 20325    | 20025, 20175, 20325 | 15MHz             | QPSK, 16QAM | 75 RB     |
|                       | 20050 to 20300    | 20050, 20175, 20300 | 20MHz             | QPSK, 16QAM | 100RB     |
| Frequency Stability   | 19957 to 20393    | 20175               | 1.4MHz            | QPSK        | 1RB       |
|                       | 19965 to 20385    | 20175               | 3MHz              | QPSK        | 1RB       |
|                       | 19975 to 20375    | 20175               | 5MHz              | QPSK        | 1RB       |
|                       | 20000 to 20350    | 20175               | 10MHz             | QPSK        | 1RB       |
|                       | 20025 to 20325    | 20175               | 15MHz             | QPSK        | 1RB       |
|                       | 20050 to 20300    | 20175               | 20MHz             | QPSK        | 1RB       |

| LTE BAND 7 MODE             |                   |                     |                   |             |                |
|-----------------------------|-------------------|---------------------|-------------------|-------------|----------------|
| Test Item                   | Available Channel | Tested Channel      | Channel Bandwidth | Modulation  | Mode           |
| Output Power & EIRP         | 20775 to 21425    | 20775, 21100, 21425 | 5MHz              | QPSK, 16QAM | 1RB/12RB/25RB  |
|                             | 20800 to 21400    | 20800, 21100, 21400 | 10MHz             | QPSK, 16QAM | 1RB/25RB/50RB  |
|                             | 20825 to 21375    | 20825, 21100, 21375 | 15MHz             | QPSK, 16QAM | 1RB/36RB/75RB  |
|                             | 20850 to 21350    | 20850, 21100, 21350 | 20MHz             | QPSK, 16QAM | 1RB/50RB/100RB |
| Occupied Bandwidth          | 20775 to 21425    | 20775, 21100, 21425 | 5MHz              | QPSK, 16QAM | 25RB           |
|                             | 20800 to 21400    | 20800, 21100, 21400 | 10MHz             | QPSK, 16QAM | 50RB           |
|                             | 20825 to 21375    | 20825, 21100, 21375 | 15MHz             | QPSK, 16QAM | 75RB           |
|                             | 20850 to 21350    | 20850, 21100, 21350 | 20MHz             | QPSK, 16QAM | 100RB          |
| Conducted Spurious Emission | 20775 to 21425    | 21100               | 5MHz              | QPSK        | 1 RB           |
|                             | 20850 to 21350    | 21100               | 20MHz             | QPSK        | 1 RB           |
| Radiated Spurious Emission  | 20775 to 21425    | 21100               | 5MHz              | QPSK        | 1 RB           |
|                             | 20850 to 21350    | 21100               | 20MHz             | QPSK        | 1 RB           |
| Band Edge                   | 20775 to 21425    | 20775               | 5MHz              | QPSK        | 1RB/25RB       |
|                             |                   | 21425               | 5MHz              | QPSK        |                |
|                             | 20800 to 21400    | 20800               | 10MHz             | QPSK        | 1RB/50RB       |
|                             |                   | 21400               | 10MHz             | QPSK        |                |
|                             | 20825 to 21375    | 20825               | 15MHz             | QPSK        | 1RB/75RB       |
|                             |                   | 21375               | 15MHz             | QPSK        |                |
|                             | 20850 to 21350    | 20850               | 20MHz             | QPSK        | 1RB/100RB      |
|                             |                   | 21350               | 20MHz             | QPSK        |                |
| Peak To Average Ratio       | 20775 to 21425    | 20775, 21100, 21425 | 5MHz              | QPSK, 16QAM | 25RB           |
|                             | 20800 to 21400    | 20800, 21100, 21400 | 10MHz             | QPSK, 16QAM | 50RB           |
|                             | 20825 to 21375    | 20825, 21100, 21375 | 15MHz             | QPSK, 16QAM | 75RB           |
|                             | 20850 to 21350    | 20850, 21100, 21350 | 20MHz             | QPSK, 16QAM | 100RB          |
| Frequency Stability         | 20775 to 21425    | 21100               | 5MHz              | QPSK        | 1RB            |
|                             | 20800 to 21400    | 21100               | 10MHz             | QPSK        | 1RB            |
|                             | 20825 to 21375    | 21100               | 15MHz             | QPSK        | 1RB            |
|                             | 20850 to 21350    | 21100               | 20MHz             | QPSK        | 1RB            |

| LTE BAND 12 MODE            |                   |                     |         |             |               |
|-----------------------------|-------------------|---------------------|---------|-------------|---------------|
| Test Item                   | Available Channel | Tested Channel      | Channel | Modulation  | Mode          |
| Output Power & ERP          | 23017 to 23173    | 23017, 23095, 23173 | 1.4MHz  | QPSK, 16QAM | 1RB/3RB/6RB   |
|                             | 23025 to 23165    | 23025, 23095, 23165 | 3MHz    | QPSK, 16QAM | 1RB/8RB/15RB  |
|                             | 23035 to 23155    | 23035, 23095, 23155 | 5MHz    | QPSK, 16QAM | 1RB/12RB/25RB |
|                             | 23060 to 23130    | 23060, 23095, 23130 | 10MHz   | QPSK, 16QAM | 1RB/25RB/50RB |
| Occupied Bandwidth          | 23017 to 23173    | 23017, 23095, 23173 | 1.4MHz  | QPSK, 16QAM | 6RB           |
|                             | 23025 to 23165    | 23025, 23095, 23165 | 3MHz    | QPSK, 16QAM | 15RB          |
|                             | 23035 to 23155    | 23035, 23095, 23155 | 5MHz    | QPSK, 16QAM | 25RB          |
|                             | 23060 to 23130    | 23060, 23095, 23130 | 10MHz   | QPSK, 16QAM | 50RB          |
| Conducted Spurious Emission | 23017 to 23173    | 23095               | 1.4MHz  | QPSK        | 1 RB          |
|                             | 23035 to 23155    | 23095               | 5MHz    | QPSK        | 1 RB          |
|                             | 23060 to 23130    | 23095               | 10MHz   | QPSK        | 1 RB          |
| Radiated Spurious Emission  | 23017 to 23173    | 23095               | 1.4MHz  | QPSK        | 1 RB          |
|                             | 23035 to 23155    | 23095               | 5MHz    | QPSK        | 1 RB          |
|                             | 23060 to 23130    | 23095               | 10MHz   | QPSK        | 1 RB          |
| Band Edge                   | 23017 to 23173    | 23017               | 1.4MHz  | QPSK        | 1RB/6RB       |
|                             |                   | 23173               | 1.4MHz  | QPSK        |               |
|                             | 23025 to 23165    | 23025               | 3MHz    | QPSK        | 1RB/15RB      |
|                             |                   | 23165               | 3MHz    | QPSK        |               |
|                             | 23035 to 23155    | 23035               | 5MHz    | QPSK        | 1RB/25RB      |
|                             |                   | 23155               | 5MHz    | QPSK        |               |
|                             | 23060 to 23130    | 23060               | 10MHz   | QPSK        | 1RB/50RB      |
|                             |                   | 23130               | 10MHz   | QPSK        |               |
| Peak to Average Ratio       | 23017 to 23173    | 23017, 23095, 23173 | 1.4MHz  | QPSK, 16QAM | 6RB           |
|                             | 23025 to 23165    | 23025, 23095, 23165 | 3MHz    | QPSK, 16QAM | 15RB          |
|                             | 23035 to 23155    | 23035, 23095, 23155 | 5MHz    | QPSK, 16QAM | 25RB          |
|                             | 23060 to 23130    | 23060, 23095, 23130 | 10MHz   | QPSK, 16QAM | 50RB          |
| Frequency Stability         | 23017 to 23173    | 23095               | 1.4MHz  | QPSK        | 1 RB          |
|                             | 23025 to 23165    | 23095               | 3MHz    | QPSK        | 1 RB          |
|                             | 23035 to 23155    | 23095               | 5MHz    | QPSK        | 1 RB          |
|                             | 23060 to 23130    | 23095               | 10MHz   | QPSK        | 1 RB          |

| LTE BAND 13 MODE            |                   |                     |                   |             |               |
|-----------------------------|-------------------|---------------------|-------------------|-------------|---------------|
| Test Item                   | Available Channel | Tested Channel      | Channel Bandwidth | Modulation  | Mode          |
| Output Power & ERP          | 23205 to 23255    | 23205, 23230, 23255 | 5MHz              | QPSK, 16QAM | 1RB/12RB/25RB |
|                             |                   | 23230               | 10MHz             | QPSK, 16QAM | 1RB/25RB/50RB |
| Occupied Bandwidth          | 23205 to 23255    | 23230               | 5MHz              | QPSK, 16QAM | 25RB          |
|                             | 23205 to 23255    | 23230               | 10MHz             | QPSK, 16QAM | 50RB          |
| Conducted Spurious Emission | 23205 to 23255    | 23230               | 5MHz              | QPSK        | 1 RB          |
|                             |                   | 23230               | 10MHz             | QPSK        | 1 RB          |
| Radiated Spurious Emission  | 23205 to 23255    | 23230               | 5MHz              | QPSK        | 1 RB          |
|                             | 23205 to 23255    | 23230               | 10MHz             | QPSK        | 1 RB          |
| Band Edge                   | 23205 to 23255    | 23205, 23255        | 5MHz              | QPSK        | 1RB/25RB      |
|                             | 23205 to 23255    | 23230               | 10MHz             | QPSK        | 1RB/50RB      |
| Peak To Average Ratio       | 23205 to 23255    | 23205, 23230, 23255 | 5MHz              | QPSK, 16QAM | 25RB          |
|                             | 23205 to 23255    | 23230               | 10MHz             | QPSK, 16QAM | 50RB          |
| Frequency Stability         | 23205 to 23255    | 23230               | 5MHz              | QPSK        | 1RB           |
|                             | 23205 to 23255    | 23230               | 10MHz             | QPSK        | 1RB           |

| LTE BAND 17 MODE            |                   |                     |                   |             |               |
|-----------------------------|-------------------|---------------------|-------------------|-------------|---------------|
| Test Item                   | Available Channel | Tested Channel      | Channel Bandwidth | Modulation  | Mode          |
| Output Power & ERP          | 23755 to 23825    | 23755, 23790, 23825 | 5MHz              | QPSK, 16QAM | 1RB/12RB/25RB |
|                             |                   | 23790               | 10MHz             | QPSK, 16QAM | 1RB/25RB/50RB |
| Occupied Bandwidth          | 23755 to 23825    | 23790               | 5MHz              | QPSK, 16QAM | 25RB          |
|                             | 23755 to 23825    | 23790               | 10MHz             | QPSK, 16QAM | 50RB          |
| Conducted Spurious Emission | 23755 to 23825    | 23790               | 5MHz              | QPSK        | 1 RB          |
|                             |                   | 23790               | 10MHz             | QPSK        | 1 RB          |
| Radiated Spurious Emission  | 23755 to 23825    | 23790               | 5MHz              | QPSK        | 1 RB          |
|                             | 23755 to 23825    | 23790               | 10MHz             | QPSK        | 1 RB          |
| Band Edge                   | 23755 to 23825    | 23755, 23825        | 5MHz              | QPSK        | 1RB/25RB      |
|                             | 23755 to 23825    | 23790               | 10MHz             | QPSK        | 1RB/50RB      |
| Peak To Average Ratio       | 23755 to 23825    | 23755, 23790, 23825 | 5MHz              | QPSK, 16QAM | 25RB          |
|                             | 23755 to 23825    | 23790               | 10MHz             | QPSK, 16QAM | 50RB          |
| Frequency Stability         | 23755 to 23825    | 23790               | 5MHz              | QPSK        | 1RB           |
|                             | 23755 to 23825    | 23790               | 10MHz             | QPSK        | 1RB           |

| LTE BAND 41 MODE             |                   |                     |                   |              |                |
|------------------------------|-------------------|---------------------|-------------------|--------------|----------------|
| Test Item                    | Available Channel | Tested Channel      | Channel Bandwidth | Modulation   | Mode           |
| Output Power & EIRP          | 39675 to 41565    | 39675, 40620, 41565 | 5MHz              | QPSK, 16QAM, | 1RB/12RB/25RB  |
|                              | 39700 to 41540    | 39700, 40620, 41540 | 10MHz             | QPSK, 16QAM, | 1RB/25RB/50RB  |
|                              | 39725 to 41515    | 39725, 40620, 41545 | 15MHz             | QPSK, 16QAM, | 1RB/36RB/75RB  |
|                              | 39750 to 41490    | 39750, 40620, 41490 | 20MHz             | QPSK, 16QAM, | 1RB/50RB/100RB |
| Occupied Bandwidth           | 39675 to 41565    | 39675, 40620, 41565 | 5MHz              | QPSK, 16QAM, | 25RB           |
|                              | 39700 to 41540    | 39700, 40620, 41540 | 10MHz             | QPSK, 16QAM, | 50RB           |
|                              | 39725 to 41515    | 39725, 40620, 41545 | 15MHz             | QPSK, 16QAM, | 75RB           |
|                              | 39750 to 41490    | 39750, 40620, 41490 | 20MHz             | QPSK, 16QAM, | 100RB          |
| Conducted Spurious Emissions | 39675 to 41565    | 40620               | 5MHz              | QPSK         | 1RB            |
|                              | 39750 to 41490    | 40620               | 20MHz             | QPSK         | 1RB            |
| Radiated Spurious Emissions  | 39675 to 41565    | 40620               | 5MHz              | QPSK         | 1RB            |
|                              | 39750 to 41490    | 40620               | 20MHz             | QPSK         | 1RB            |
| Band Edge                    | 39675 to 41565    | 39675, 41565        | 5MHz              | QPSK         | 1RB/25RB       |
|                              | 39700 to 41540    | 39700, 41540        | 10MHz             | QPSK         | 1RB/50RB       |
|                              | 39725 to 41515    | 39725, 41545        | 15MHz             | QPSK         | 1RB/75RB       |
|                              | 39750 to 41490    | 39750, 41490        | 20MHz             | QPSK         | 1RB/100RB      |
| Peak to Average Ratio        | 39675 to 41565    | 39675, 40620, 41565 | 5MHz              | QPSK, 16QAM, | 1RB            |
|                              | 39700 to 41540    | 39700, 40620, 41540 | 10MHz             | QPSK, 16QAM, | 1RB            |
|                              | 39725 to 41515    | 39725, 40620, 41545 | 15MHz             | QPSK, 16QAM, | 1RB            |
|                              | 39750 to 41490    | 39750, 40620, 41490 | 20MHz             | QPSK, 16QAM, | 1RB            |
| Frequency Stability          | 39675 to 41565    | 40620               | 5MHz              | QPSK         | 1RB            |
|                              | 39700 to 41540    | 40620               | 10MHz             | QPSK         | 1RB            |
|                              | 39725 to 41515    | 40620               | 15MHz             | QPSK         | 1RB            |
|                              | 39750 to 41490    | 40620               | 20MHz             | QPSK         | 1RB            |

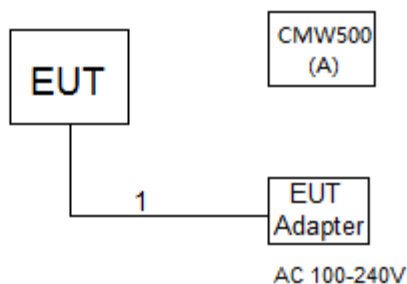
| LTE BAND 66 MODE            |                   |                        |                   |             |                |
|-----------------------------|-------------------|------------------------|-------------------|-------------|----------------|
| Test Item                   | Available Channel | Tested Channel         | Channel Bandwidth | Modulation  | Mode           |
| Output Power & EIRP         | 131979 to 132665  | 131979, 132322, 132665 | 1.4MHz            | QPSK, 16QAM | 1RB/3RB/6RB    |
|                             | 131987 to 132657  | 131987, 132322, 132657 | 3MHz              | QPSK, 16QAM | 1RB/8RB/15RB   |
|                             | 131997 to 132647  | 131997, 132322, 132647 | 5MHz              | QPSK, 16QAM | 1RB/12RB/25RB  |
|                             | 132022 to 132622  | 132022, 132322, 132622 | 10MHz             | QPSK, 16QAM | 1RB/25RB/50RB  |
|                             | 132047 to 132597  | 132047, 132322, 132597 | 15MHz             | QPSK, 16QAM | 1RB/36RB/75RB  |
|                             | 132072 to 132572  | 132072, 132322, 132572 | 20MHz             | QPSK, 16QAM | 1RB/50RB/100RB |
| Occupied Bandwidth          | 131979 to 132665  | 131979, 132322, 132665 | 1.4MHz            | QPSK, 16QAM | 6RB            |
|                             | 131987 to 132657  | 131987, 132322, 132657 | 3MHz              | QPSK, 16QAM | 15RB           |
|                             | 131997 to 132647  | 131997, 132322, 132647 | 5MHz              | QPSK, 16QAM | 25RB           |
|                             | 132022 to 132622  | 132022, 132322, 132622 | 10MHz             | QPSK, 16QAM | 50RB           |
|                             | 132047 to 132597  | 132047, 132322, 132597 | 15MHz             | QPSK, 16QAM | 75 RB          |
|                             | 132072 to 132572  | 132072, 132322, 132572 | 20MHz             | QPSK, 16QAM | 100RB          |
| Conducted Spurious Emission | 131979 to 132665  | 132322                 | 1.4MHz            | QPSK        | 1RB            |
|                             | 131997 to 132647  | 132322                 | 5MHz              | QPSK        | 1RB            |
|                             | 132072 to 132572  | 132322                 | 20MHz             | QPSK        | 1RB            |
| Radiated Spurious Emission  | 131979 to 132665  | 132322                 | 1.4MHz            | QPSK        | 1RB            |
|                             | 131997 to 132647  | 132322                 | 5MHz              | QPSK        | 1RB            |
|                             | 132072 to 132572  | 132322                 | 20MHz             | QPSK        | 1RB            |

| LTE BAND 66 MODE      |                   |                        |                   |             |           |
|-----------------------|-------------------|------------------------|-------------------|-------------|-----------|
| Test Item             | Available Channel | Tested Channel         | Channel Bandwidth | Modulation  | Mode      |
| Band Edge             | 131979 to 132665  | 131979                 | 1.4MHz            | QPSK        | 1RB/6RB   |
|                       |                   | 132665                 | 1.4MHz            | QPSK        |           |
|                       | 131987 to 132657  | 131987                 | 3MHz              | QPSK        | 1RB/15RB  |
|                       |                   | 132657                 | 3MHz              | QPSK        |           |
|                       | 131997 to 132647  | 131997                 | 5MHz              | QPSK        | 1RB/25RB  |
|                       |                   | 132647                 | 5MHz              | QPSK        |           |
|                       | 132022 to 132622  | 132022                 | 10MHz             | QPSK        | 1RB/50RB  |
|                       |                   | 132622                 | 10MHz             | QPSK        |           |
|                       | 132047 to 132597  | 132047                 | 15MHz             | QPSK        | 1RB/75RB  |
|                       |                   | 132597                 | 15MHz             | QPSK        |           |
|                       | 132072 to 132572  | 132072                 | 20MHz             | QPSK        | 1RB/100RB |
|                       |                   | 132572                 | 20MHz             | QPSK        |           |
| Peak To Average Ratio | 131979 to 132665  | 131979, 132322, 132665 | 1.4MHz            | QPSK, 16QAM | 1RB       |
|                       | 131987 to 132657  | 131987, 132322, 132657 | 3MHz              | QPSK, 16QAM | 1RB       |
|                       | 131997 to 132647  | 131997, 132322, 132647 | 5MHz              | QPSK, 16QAM | 1RB       |
|                       | 132022 to 132622  | 132022, 132322, 132622 | 10MHz             | QPSK, 16QAM | 1RB       |
|                       | 132047 to 132597  | 132047, 132322, 132597 | 15MHz             | QPSK, 16QAM | 1RB       |
|                       | 132072 to 132572  | 132072, 132322, 132572 | 20MHz             | QPSK, 16QAM | 1RB       |
| Frequency Stability   | 131979 to 132665  | 132322                 | 1.4MHz            | QPSK        | 1RB       |
|                       | 131987 to 132657  | 132322                 | 3MHz              | QPSK        | 1RB       |
|                       | 131997 to 132647  | 132322                 | 5MHz              | QPSK        | 1RB       |
|                       | 132022 to 132622  | 132322                 | 10MHz             | QPSK        | 1RB       |
|                       | 132047 to 132597  | 132322                 | 15MHz             | QPSK        | 1RB       |
|                       | 132072 to 132572  | 132322                 | 20MHz             | QPSK        | 1RB       |

| LTE BAND 71 MODE             |                   |                        |                   |              |                |
|------------------------------|-------------------|------------------------|-------------------|--------------|----------------|
| Test Item                    | Available Channel | Tested Channel         | Channel Bandwidth | Modulation   | Mode           |
| Output Power & ERP           | 133147 to 133447  | 133147, 133297, 133447 | 5MHz              | QPSK, 16QAM, | 1RB/12RB/25RB  |
|                              | 133172 to 133422  | 133172, 133297, 133422 | 10MHz             | QPSK, 16QAM, | 1RB/25RB/50RB  |
|                              | 133197 to 133397  | 133197, 133297, 133397 | 15MHz             | QPSK, 16QAM, | 1RB/36RB/75RB  |
|                              | 133222 to 133372  | 133222, 133322, 133372 | 20MHz             | QPSK, 16QAM, | 1RB/50RB/100RB |
| Occupied Bandwidth           | 133147 to 133447  | 133147, 133297, 133447 | 5MHz              | QPSK, 16QAM, | 25RB           |
|                              | 133172 to 133422  | 133172, 133297, 133422 | 10MHz             | QPSK, 16QAM, | 50RB           |
|                              | 133197 to 133397  | 133197, 133297, 133397 | 15MHz             | QPSK, 16QAM, | 75RB           |
|                              | 133222 to 133372  | 133222, 133322, 133372 | 20MHz             | QPSK, 16QAM, | 100RB          |
| Conducted Spurious Emissions | 133147 to 133447  | 133297                 | 5MHz              | QPSK         | 1RB            |
|                              | 133222 to 133372  | 133322                 | 20MHz             | QPSK         | 1RB            |
| Radiated Spurious Emissions  | 133147 to 133447  | 133297                 | 5MHz              | QPSK         | 1RB            |
|                              | 133222 to 133372  | 133322                 | 20MHz             | QPSK         | 1RB            |
| Band Edge                    | 133147 to 133447  | 133147, 133297, 133447 | 5MHz              | QPSK         | 1RB/25RB       |
|                              | 133172 to 133422  | 133172, 133297, 133422 | 10MHz             | QPSK         | 1RB/50RB       |
|                              | 133197 to 133397  | 133197, 133297, 133397 | 15MHz             | QPSK         | 1RB/75RB       |
|                              | 133222 to 133372  | 133222, 133322, 133372 | 20MHz             | QPSK         | 1RB/100RB      |
| Peak to Average Ratio        | 133147 to 133447  | 133147, 133297, 133447 | 5MHz              | QPSK, 16QAM, | 1RB            |
|                              | 133172 to 133422  | 133172, 133297, 133422 | 10MHz             | QPSK, 16QAM, | 1RB            |
|                              | 133197 to 133397  | 133197, 133297, 133397 | 15MHz             | QPSK, 16QAM, | 1RB            |
|                              | 133222 to 133372  | 133222, 133322, 133372 | 20MHz             | QPSK, 16QAM, | 1RB            |
| Frequency Stability          | 133147 to 133447  | 133297                 | 5MHz              | QPSK         | 1RB            |
|                              | 133172 to 133422  | 133322                 | 10MHz             | QPSK         | 1RB            |
|                              | 133197 to 133397  | 133297                 | 15MHz             | QPSK         | 1RB            |
|                              | 133222 to 133372  | 133322                 | 20MHz             | QPSK         | 1RB            |

Note: The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

## 2.3 BLOCK DIGRAM SHOWING THECONFIGURATIONOFSYSTEMTESTED



## 2.4 DESCRIPTION OF SUPPORT UNITS

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

| Item | Equipment | Mfr/Brand | Model/Type No. | Series No. |
|------|-----------|-----------|----------------|------------|
| 1    | CMW500    | N/A       | N/A            | 131463     |

| Item | Cable Type | Shielded Type | Ferrite Core | Length |
|------|------------|---------------|--------------|--------|
| 1    | DC Cable   | N/A           | N/A          | 1.5m   |

### 3. TEST RESULT

#### 3.1 OUTPUT POWER MEASUREMENT

##### 3.1.1 LIMIT

Mobile / Portable station are limited to 1 watts e.i.r.p. (LTE Band 4 & LTE Band 66)

Mobile / Portable station are limited to 2 watts e.i.r.p. (LTE Band 7 & LTE Band 41)

Mobile / Portable station are limited to 3 watts e.r.p. (LTE Band 12, LTE Band 13, LTE Band 17 & LTE Band 71.)

##### 3.1.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 5.

##### EIRP/ERP:

EIRP= Conducted Power +Antenan gain

ERP power=EIPR power-2.15dBi.

##### Output Power:

The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.

Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

##### 3.1.3 TEST SETUP LAYOUT

Conducted Power Measurement



##### 3.1.4 TEST DEVIATION

No deviation

##### 3.1.5 TEST RESULTS

Please refer to the Appendix A.

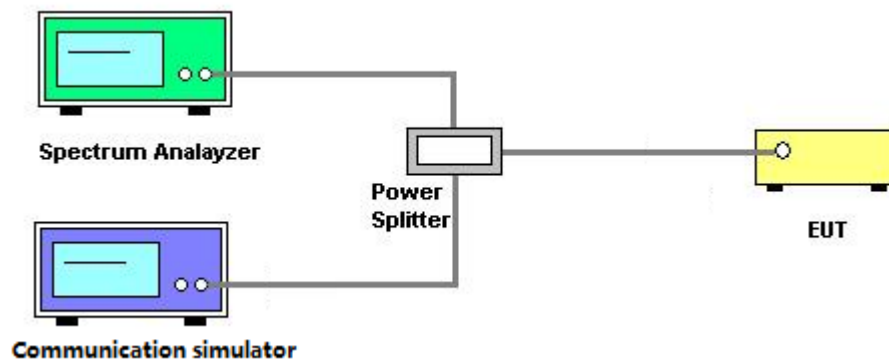
## 3.2 OCCUPIED BANDWIDTH MEASUREMENT

### 3.2.1 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 4.

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth and 26dB bandwidth.

### 3.2.2 TEST SETUP LAYOUT



### 3.2.3 TEST DEVIATION

No deviation

### 3.2.4 TEST RESULTS

Please refer to the Appendix B.

### 3.3 CONDUCTED EMISSIONS MEASUREMENT

#### 3.3.1 LIMIT

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

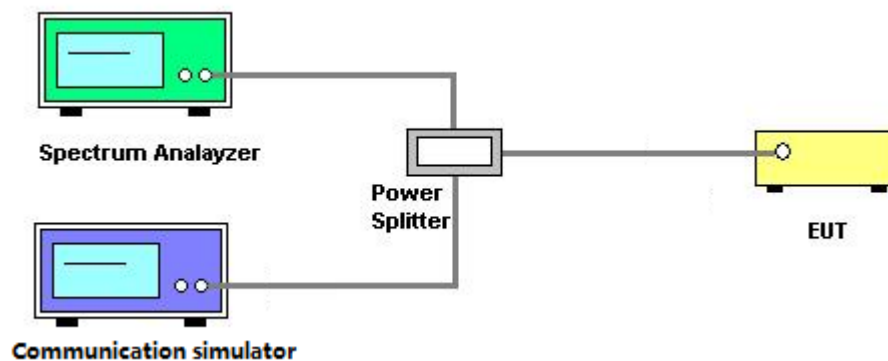
( LTE Band 4, Band 12, Band 13, Band 17, Band 66, Band 71.)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $55 + 10 \log(P)$  dB. The emission limit equal to -25dBm. (LTE Band 7, Band 41)

#### 3.3.2 TEST PROCEDURES

1. The testing follows FCC KDB 971168 v03r01 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured. Set RBW $\geq$ 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Set spectrum analyzer with RMS detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

#### 3.3.3 TEST SETUP LAYOUT



#### 3.3.4 TEST DEVIATION

No deviation

#### 3.3.5 TEST RESULTS

Please refer to the Appendix C.

### 3.4 RADIATED EMISSIONS MEASUREMENT

#### 3.4.1 LIMIT

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

( LTE Band 4, Band 12, Band 17, Band 66, Band 71.)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $55 + 10 \log(P)$  dB. The emission limit equal to -25dBm. (LTE Band 7, Band 41 )

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 operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610MHz 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. (LTE Band 13).

#### 3.4.2 TEST PROCEDURES

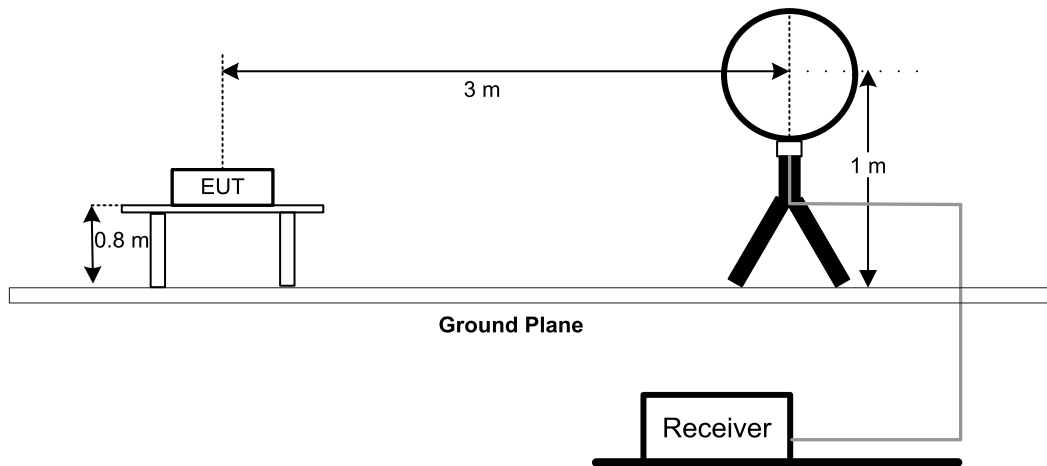
The testing follows FCC KDB 971168 v03r01 Section 6.2.

1. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
2. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G
3. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
4. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.
5. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

### 3.4.3 TEST SETUP LAYOUT

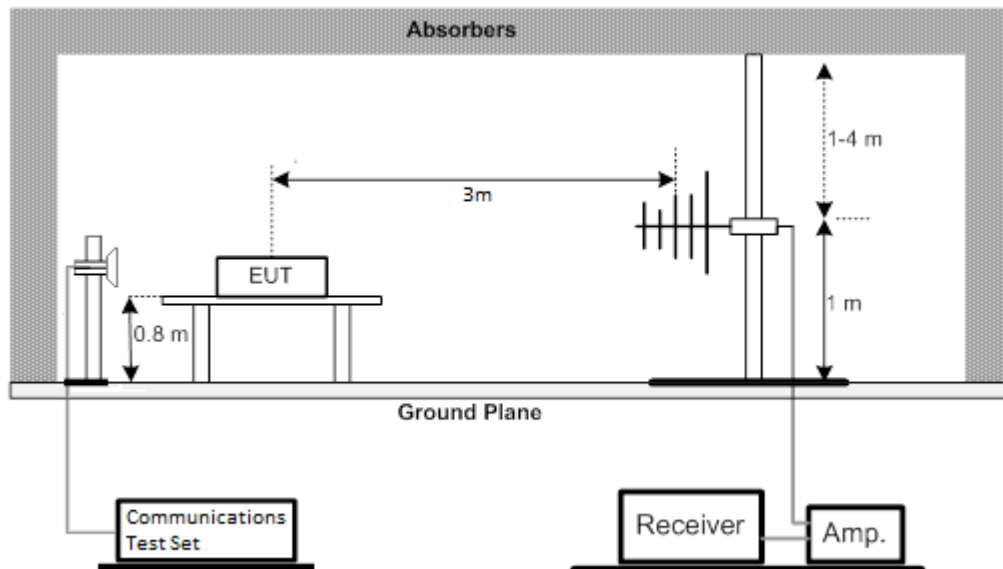
#### Below 30MHz

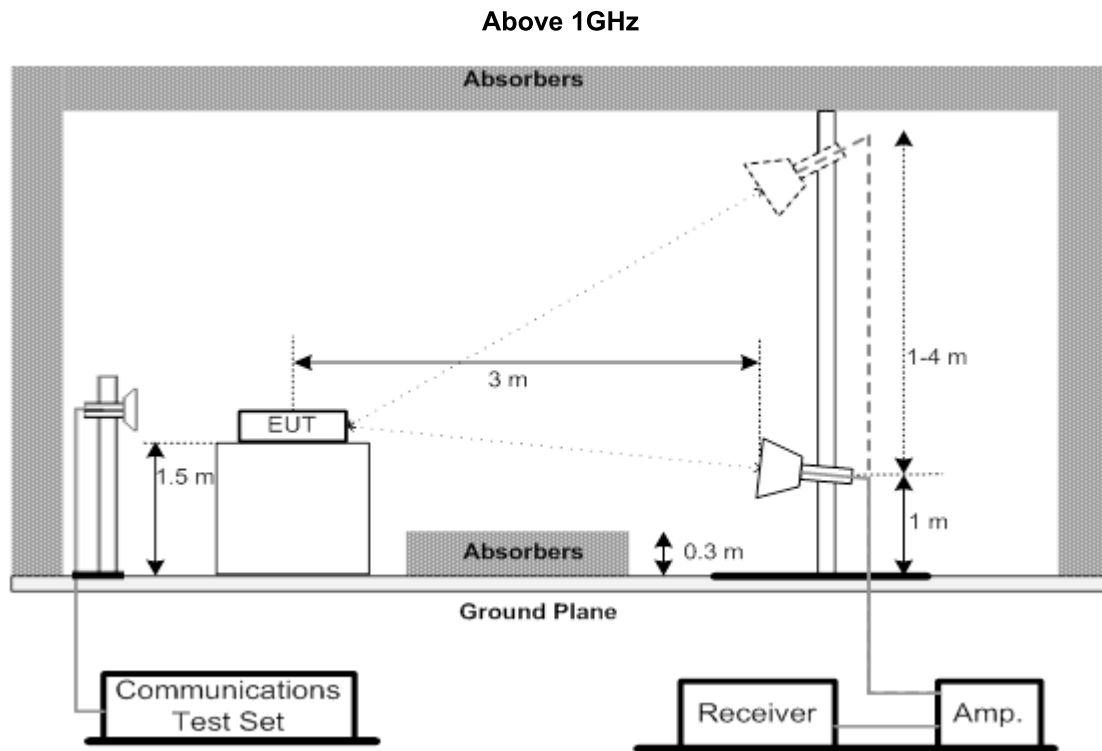
Absorbers



#### 30MHz to 1GHz

Absorbers





#### 3.4.4 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the APPENDIX D.

#### 3.4.5 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the APPENDIX E.

#### 3.4.6 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the APPENDIX F.

### 3.5 BAND EDGE MEASUREMENT

#### 3.5.1 LIMIT

The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed. (LTE Band 4, Band 12, Band 17, Band 66, Band 71.)

For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. (LTE Band 7, Band 41)

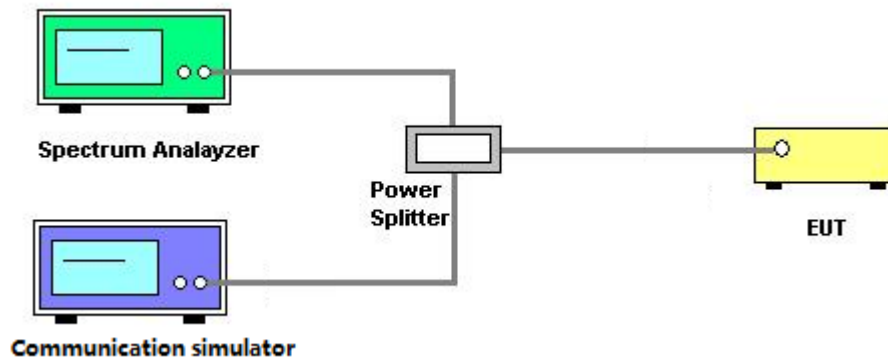
For operations in the 776-788 MHz band, the FCC limit is  $43 + 10 \log_{10}(P[\text{Watts}])$  dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. In addition, the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least  $65 + 10 \log_{10} p$  (watts), dB, for mobile and portable equipment. (LTE Band 13)

#### 3.5.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 6.

1. All measurements were done at low and high operational frequency range.
2. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 15kHz and VB of the spectrum is 43kHz (LTE Bandwidth 1.4MHz).
3. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 30kHz and VB of the spectrum is 91kHz (LTE Bandwidth 3MHz).
4. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 51kHz and VB of the spectrum is 150kHz (LTE Bandwidth 5MHz).
5. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Bandwidth 10MHz).
6. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 150kHz and VB of the spectrum is 470kHz (LTE Bandwidth 15MHz).
7. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 200kHz and VB of the spectrum is 620kHz (LTE Bandwidth 20MHz).
8. Record the max trace plot into the test report.

### 3.5.3 TEST SETUP LAYOUT



### 3.5.4 TEST DEVIATION

No deviation

### 3.5.5 TEST RESULTS

Please refer to the Appendix G.

### 3.6 PEAK TO AVERAGE RATIO MEASUREMENT

#### 3.6.1 LIMIT

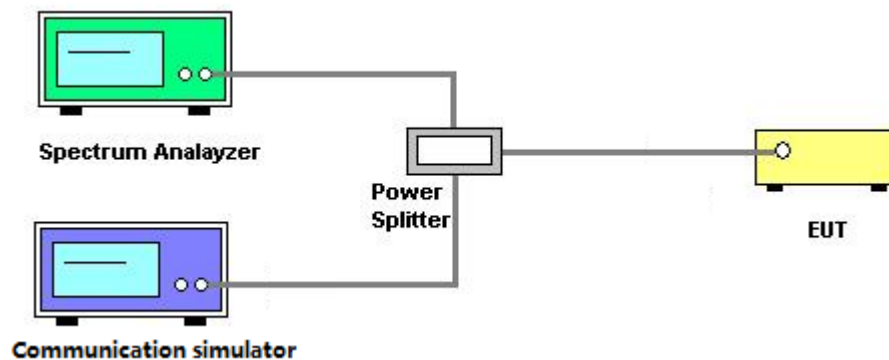
In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

#### 3.6.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 5.7.

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

#### 3.6.3 TEST SETUP LAYOUT



#### 3.6.4 TEST DEVIATION

No deviation

#### 3.6.5 TEST RESULTS

Please refer to the Appendix H.

### 3.7 FREQUENCY STABILITY MEASUREMENT

#### 3.7.1 LIMIT

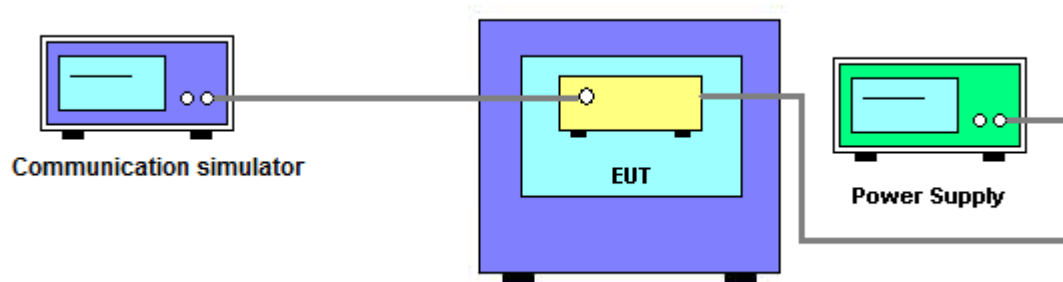
$\pm 1.5$  ppm is for base and fixed station.  $\pm 2.5$  ppm is for mobile station.

#### 3.7.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 9.

1. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
2. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
3. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5$  °C during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.
4. The frequency error was recorded frequency error from the communication simulator.

#### 3.7.3 TEST SETUP LAYOUT



#### 3.7.4 TEST DEVIATION

No deviation

#### 3.7.5 TEST RESULTS

Please refer to the Appendix I.

#### 4. LIST OF MEASUREMENT EQUIPMENTS

| Radiated Emission Measurement(30M-1G) |                                   |              |                          |            |                  |
|---------------------------------------|-----------------------------------|--------------|--------------------------|------------|------------------|
| Item                                  | Kind of Equipment                 | Manufacturer | Type No.                 | Serial No. | Calibrated until |
| 1                                     | TRILOG Broadband Antenna          | Schwarzbeck  | VULB 9168                | 719        | Apr. 02, 2021    |
| 2                                     | Pre-Amplifier                     | emci         | EMC9135                  | 980400     | Mar. 21, 2021    |
| 3                                     | MXE EMI Receiver                  | Keysight     | N9038A                   | MY57150106 | Mar. 21, 2021    |
| 4                                     | Test Cable                        | emci         | EMC104-SM-SM-7000        | 170330     | Apr. 13, 2021    |
| 5                                     | Test Cable                        | emci         | EMC104-SM-SM-1000        | 170331     | Apr. 13, 2021    |
| 6                                     | Test Cable                        | emci         | EMC104-SM-NM-3500        | 170621     | Apr. 13, 2021    |
| 7                                     | Measurement Software              | Farad        | EZ-EMC<br>Ver.NB-03A1-01 | N/A        | Apr. 13, 2021    |
| 8                                     | Wideband Radio Communication Test | R&S          | CMW500                   | 131463     | Sep. 01, 2020    |

| Radiated Emission Measurement(1G-18G) |                                      |              |                   |            |                  |
|---------------------------------------|--------------------------------------|--------------|-------------------|------------|------------------|
| Item                                  | Kind of Equipment                    | Manufacturer | Type No.          | Serial No. | Calibrated until |
| 1                                     | Pre-Amplifier                        | emci         | EMC184045SE       | 980409     | Apr. 02, 2021    |
| 2                                     | Pre-Amplifier                        | emci         | EMC012680SE       | 980421     | May. 11, 2021    |
| 3                                     | Pre-Amplifier                        | emci         | EMC9135           | 980400     | Mar. 21, 2021    |
| 4                                     | Double Ridged Broadband Horn Antenna | Schwarzbeck  | BBHA 9120D        | 9120D-1787 | Apr. 13, 2021    |
| 5                                     | Double-Ridged Waveguide Horn Antenna | ETS-Lindgren | 3116C             | 00203919   | Apr. 13, 2021    |
| 6                                     | TRILOG Broadband Antenna             | Schwarzbeck  | VULB 9168         | 719        | Apr. 13, 2021    |
| 7                                     | Cable                                | N/A          | EMC102-SM-SM-6000 | 170336     | N/A              |
| 8                                     | Wideband Radio Communication Test    | R&S          | CMW500            | 131463     | Sep. 01, 2020    |

| Conducted Emission & Band Edge & Occupied Bandwidth Measurement |                                                 |              |             |            |                  |
|-----------------------------------------------------------------|-------------------------------------------------|--------------|-------------|------------|------------------|
| Item                                                            | Kind of Equipment                               | Manufacturer | Type No.    | Serial No. | Calibrated until |
| 1                                                               | 8960 SERIES 10 WIRELESS COMMUNICATIONS TEST SET | Agilent      | E5515C      | GB45070942 | Sep. 01, 2020    |
| 2                                                               | Spectrum Analyzer                               | R&S          | FSP40       | 100626     | May. 06, 2021    |
| 3                                                               | EXA Spectrum Analyzer                           | Keysight     | N9010A      | MY56480579 | Mar. 21, 2021    |
| 4                                                               | Power Divider                                   | JUK          | PD-2SF-2060 | N/A        | N/A              |

| Frequency Stability Measurement |                                                 |              |             |            |                  |
|---------------------------------|-------------------------------------------------|--------------|-------------|------------|------------------|
| Item                            | Kind of Equipment                               | Manufacturer | Type No.    | Serial No. | Calibrated until |
| 1                               | 8960 SERIES 10 WIRELESS COMMUNICATIONS TEST SET | Agilent      | E5515C      | GB45070942 | Sep. 01, 2020    |
| 2                               | Spectrum Analyzer                               | R&S          | FSP40       | 100626     | May. 06, 2021    |
| 3                               | EXA Spectrum Analyzer                           | Keysight     | N9010A      | MY56480579 | Mar. 21, 2021    |
| 4                               | Power Divider                                   | JUK          | PD-2SF-2060 | N/A        | N/A              |
| 5                               | Temperature And Humidity Box                    | Blue pand    | BPHS-120B   | 170616454  | Sep. 01, 2020    |

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

## APPENDIX A - OUTPUT POWER

**Output Power (dBm):**

| Modulation | Band       | WCDMA Band IV |           |           |
|------------|------------|---------------|-----------|-----------|
|            | Tx Channel | 1312CH        | 1413CH    | 1513CH    |
|            | Frequency  | 1712.4MHz     | 1732.6MHz | 1752.6MHz |
| QPSK       | RMC 12.2K  | 22.53         | 22.75     | 22.69     |
|            | RMC 64K    | 22.55         | 22.64     | 22.76     |
|            | RMC 144K   | 22.62         | 22.68     | 22.74     |
|            | RMC 384K   | 22.66         | 22.79     | 22.78     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH    | High CH   |
|---------------|------------|---------|-----------|-----------|-----------|-----------|
|               |            |         |           | 19957CH   | 20175CH   | 20393CH   |
|               |            |         |           | 1710.7MHz | 1732.5MHz | 1754.3MHz |
| 4 / 1.4M      | QPSK       | 1       | 0         | 23.42     | 23.48     | 23.33     |
|               |            | 1       | 2         | 23.44     | 23.57     | 23.52     |
|               |            | 1       | 5         | 23.24     | 23.47     | 23.33     |
|               |            | 3       | 0         | 23.21     | 23.40     | 23.38     |
|               |            | 3       | 1         | 23.24     | 23.53     | 23.49     |
|               |            | 3       | 2         | 23.25     | 23.49     | 23.41     |
|               | 16QAM      | 6       | 0         | 22.14     | 22.55     | 22.30     |
|               |            | 1       | 0         | 22.08     | 22.41     | 21.98     |
|               |            | 1       | 2         | 22.19     | 22.51     | 21.92     |
|               |            | 1       | 5         | 22.12     | 22.28     | 21.96     |
|               |            | 3       | 0         | 21.95     | 22.34     | 21.68     |
|               |            | 3       | 1         | 22.37     | 22.37     | 22.21     |
|               |            | 3       | 2         | 22.30     | 22.31     | 22.27     |
|               |            | 6       | 0         | 21.23     | 21.36     | 20.99     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH    | High CH   |
|---------------|------------|---------|-----------|-----------|-----------|-----------|
|               |            |         |           | 19965CH   | 20175CH   | 20385CH   |
|               |            |         |           | 1711.5MHz | 1732.5MHz | 1753.5MHz |
| 4 / 3M        | QPSK       | 1       | 0         | 23.30     | 23.51     | 23.23     |
|               |            | 1       | 7         | 23.41     | 23.58     | 23.44     |
|               |            | 1       | 14        | 23.41     | 23.49     | 23.43     |
|               |            | 8       | 0         | 22.18     | 22.37     | 22.21     |
|               |            | 8       | 4         | 22.08     | 22.36     | 22.21     |
|               |            | 8       | 7         | 22.05     | 22.37     | 22.18     |
|               |            | 15      | 0         | 22.08     | 22.43     | 22.12     |
|               | 16QAM      | 1       | 0         | 22.20     | 22.76     | 22.19     |
|               |            | 1       | 7         | 22.21     | 22.79     | 22.17     |
|               |            | 1       | 14        | 22.27     | 22.66     | 22.35     |
|               |            | 8       | 0         | 21.30     | 21.46     | 21.07     |
|               |            | 8       | 4         | 21.21     | 21.64     | 20.90     |
|               |            | 8       | 7         | 21.30     | 21.55     | 20.96     |
|               |            | 15      | 0         | 21.23     | 21.41     | 21.09     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH    | High CH   |
|---------------|------------|---------|-----------|-----------|-----------|-----------|
|               |            |         |           | 19975CH   | 20175CH   | 20375CH   |
|               |            |         |           | 1712.5MHz | 1732.5MHz | 1752.5MHz |
| 4 / 5M        | QPSK       | 1       | 0         | 23.15     | 23.26     | 23.26     |
|               |            | 1       | 13        | 23.28     | 23.23     | 23.29     |
|               |            | 1       | 24        | 23.19     | 23.21     | 23.40     |
|               |            | 12      | 0         | 22.03     | 22.39     | 22.33     |
|               |            | 12      | 6         | 22.18     | 22.45     | 22.37     |
|               |            | 12      | 11        | 22.22     | 22.44     | 22.38     |
|               |            | 25      | 0         | 22.11     | 22.41     | 22.35     |
|               | 16QAM      | 1       | 0         | 21.52     | 21.86     | 22.08     |
|               |            | 1       | 13        | 21.65     | 21.90     | 21.88     |
|               |            | 1       | 24        | 21.58     | 21.79     | 22.12     |
|               |            | 12      | 0         | 21.17     | 21.28     | 21.11     |
|               |            | 12      | 6         | 21.22     | 21.23     | 21.18     |
|               |            | 12      | 11        | 21.36     | 21.27     | 21.18     |
|               |            | 25      | 0         | 21.39     | 21.34     | 21.37     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH    | High CH |
|---------------|------------|---------|-----------|---------|-----------|---------|
|               |            |         |           | 20000CH | 20175CH   | 20350CH |
|               |            |         |           | 1715MHz | 1732.5MHz | 1750MHz |
| 4 / 10M       | QPSK       | 1       | 0         | 23.35   | 23.03     | 23.23   |
|               |            | 1       | 25        | 23.61   | 23.74     | 23.52   |
|               |            | 1       | 49        | 22.90   | 23.18     | 23.34   |
|               |            | 25      | 0         | 22.12   | 22.33     | 22.16   |
|               |            | 25      | 13        | 22.05   | 22.51     | 22.21   |
|               |            | 25      | 25        | 21.99   | 22.38     | 22.24   |
|               |            | 50      | 0         | 21.96   | 22.37     | 22.21   |
|               | 16QAM      | 1       | 0         | 22.16   | 22.49     | 22.07   |
|               |            | 1       | 25        | 22.50   | 22.46     | 22.26   |
|               |            | 1       | 49        | 21.75   | 22.08     | 22.35   |
|               |            | 25      | 0         | 21.12   | 21.45     | 21.28   |
|               |            | 25      | 13        | 20.96   | 21.53     | 21.58   |
|               |            | 25      | 25        | 20.78   | 21.44     | 21.39   |
|               |            | 50      | 0         | 20.93   | 21.47     | 21.20   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH    | High CH   |
|---------------|------------|---------|-----------|-----------|-----------|-----------|
|               |            |         |           | 20025CH   | 20175CH   | 20325CH   |
|               |            |         |           | 1717.5MHz | 1732.5MHz | 1747.5MHz |
| 4 / 15M       | QPSK       | 1       | 0         | 23.35     | 23.03     | 23.19     |
|               |            | 1       | 38        | 22.99     | 23.52     | 23.24     |
|               |            | 1       | 74        | 23.52     | 23.02     | 23.31     |
|               |            | 36      | 0         | 21.91     | 22.18     | 21.90     |
|               |            | 36      | 18        | 21.77     | 22.29     | 22.08     |
|               |            | 36      | 39        | 21.80     | 22.31     | 22.16     |
|               |            | 75      | 0         | 21.92     | 22.17     | 22.00     |
|               | 16QAM      | 1       | 0         | 21.93     | 22.15     | 22.53     |
|               |            | 1       | 38        | 22.40     | 22.69     | 22.96     |
|               |            | 1       | 74        | 22.48     | 22.61     | 22.80     |
|               |            | 36      | 0         | 21.04     | 21.36     | 20.91     |
|               |            | 36      | 18        | 20.88     | 21.38     | 21.19     |
|               |            | 36      | 39        | 20.90     | 21.27     | 21.17     |
|               |            | 75      | 0         | 20.89     | 21.31     | 21.04     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH    | High CH |
|---------------|------------|---------|-----------|---------|-----------|---------|
|               |            |         |           | 20050CH | 20175CH   | 20300CH |
|               |            |         |           | 1720MHz | 1732.5MHz | 1745MHz |
| 4 / 20M       | QPSK       | 1       | 0         | 22.97   | 23.07     | 23.03   |
|               |            | 1       | 50        | 22.92   | 23.59     | 23.18   |
|               |            | 1       | 99        | 22.84   | 22.92     | 22.99   |
|               |            | 50      | 0         | 21.96   | 22.21     | 22.07   |
|               |            | 50      | 25        | 21.93   | 22.42     | 22.04   |
|               |            | 50      | 50        | 22.12   | 22.29     | 22.11   |
|               |            | 100     | 0         | 22.02   | 22.35     | 22.12   |
|               | 16QAM      | 1       | 0         | 21.59   | 22.00     | 22.09   |
|               |            | 1       | 50        | 21.52   | 22.67     | 21.84   |
|               |            | 1       | 99        | 21.75   | 21.92     | 22.20   |
|               |            | 50      | 0         | 21.05   | 21.35     | 21.19   |
|               |            | 50      | 25        | 20.98   | 21.47     | 21.06   |
|               |            | 50      | 50        | 21.25   | 21.30     | 21.17   |
|               |            | 100     | 0         | 21.10   | 21.32     | 21.15   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH  | High CH   |
|---------------|------------|---------|-----------|-----------|---------|-----------|
|               |            |         |           | 20775CH   | 21100CH | 21425CH   |
|               |            |         |           | 2502.5MHz | 2535MHz | 2567.5MHz |
| 7 / 5M        | QPSK       | 1       | 0         | 23.71     | 24.01   | 24.07     |
|               |            | 1       | 13        | 23.57     | 24.36   | 24.29     |
|               |            | 1       | 24        | 23.71     | 24.48   | 24.02     |
|               |            | 12      | 0         | 22.84     | 23.13   | 22.99     |
|               |            | 12      | 6         | 22.82     | 23.25   | 22.98     |
|               |            | 12      | 11        | 22.86     | 23.18   | 22.96     |
|               |            | 25      | 0         | 22.83     | 23.08   | 23.01     |
|               | 16QAM      | 1       | 0         | 22.21     | 22.80   | 22.57     |
|               |            | 1       | 13        | 22.47     | 23.08   | 22.90     |
|               |            | 1       | 24        | 22.38     | 22.80   | 22.70     |
|               |            | 12      | 0         | 21.89     | 22.22   | 21.95     |
|               |            | 12      | 6         | 22.02     | 22.36   | 21.92     |
|               |            | 12      | 11        | 21.91     | 22.44   | 22.07     |
|               |            | 25      | 0         | 21.80     | 22.26   | 22.12     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH  | High CH |
|---------------|------------|---------|-----------|---------|---------|---------|
|               |            |         |           | 20800CH | 21100CH | 21400CH |
|               |            |         |           | 2505MHz | 2535MHz | 2565MHz |
| 7 / 10M       | QPSK       | 1       | 0         | 24.01   | 24.22   | 24.04   |
|               |            | 1       | 25        | 24.45   | 24.55   | 24.18   |
|               |            | 1       | 49        | 24.02   | 24.48   | 24.11   |
|               |            | 25      | 0         | 23.04   | 23.20   | 23.04   |
|               |            | 25      | 13        | 23.04   | 23.31   | 23.11   |
|               |            | 25      | 25        | 22.95   | 23.25   | 23.05   |
|               |            | 50      | 0         | 22.94   | 23.21   | 23.03   |
|               | 16QAM      | 1       | 0         | 22.94   | 23.63   | 23.20   |
|               |            | 1       | 25        | 23.56   | 23.29   | 23.87   |
|               |            | 1       | 49        | 23.17   | 22.92   | 22.92   |
|               |            | 25      | 0         | 22.07   | 22.25   | 22.20   |
|               |            | 25      | 13        | 22.22   | 22.38   | 22.20   |
|               |            | 25      | 25        | 22.06   | 22.39   | 22.14   |
|               |            | 50      | 0         | 21.95   | 22.07   | 22.06   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH  | High CH   |
|---------------|------------|---------|-----------|-----------|---------|-----------|
|               |            |         |           | 20825CH   | 21100CH | 21375CH   |
|               |            |         |           | 2507.5MHz | 2535MHz | 2562.5MHz |
| 7 / 15M       | QPSK       | 1       | 0         | 24.19     | 24.22   | 24.21     |
|               |            | 1       | 38        | 24.30     | 24.36   | 24.08     |
|               |            | 1       | 74        | 24.06     | 24.24   | 24.09     |
|               |            | 36      | 0         | 23.00     | 23.20   | 23.26     |
|               |            | 36      | 18        | 23.08     | 23.27   | 23.16     |
|               |            | 36      | 39        | 23.05     | 23.33   | 23.12     |
|               |            | 75      | 0         | 23.08     | 23.22   | 23.10     |
|               | 16QAM      | 1       | 0         | 22.94     | 22.61   | 23.59     |
|               |            | 1       | 38        | 23.32     | 22.84   | 23.76     |
|               |            | 1       | 74        | 23.33     | 22.75   | 23.88     |
|               |            | 36      | 0         | 22.01     | 22.28   | 22.19     |
|               |            | 36      | 18        | 22.05     | 22.19   | 22.16     |
|               |            | 36      | 39        | 22.05     | 22.25   | 22.09     |
|               |            | 75      | 0         | 22.12     | 22.16   | 22.14     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH  | High CH |
|---------------|------------|---------|-----------|---------|---------|---------|
|               |            |         |           | 20850CH | 21100CH | 21350CH |
|               |            |         |           | 2510MHz | 2535MHz | 2560MHz |
| 7 / 20M       | QPSK       | 1       | 0         | 23.83   | 24.06   | 24.18   |
|               |            | 1       | 50        | 24.23   | 24.45   | 24.34   |
|               |            | 1       | 99        | 23.85   | 24.18   | 24.13   |
|               |            | 50      | 0         | 23.10   | 23.27   | 23.35   |
|               |            | 50      | 25        | 23.10   | 23.40   | 23.31   |
|               |            | 50      | 50        | 23.04   | 23.40   | 23.12   |
|               |            | 100     | 0         | 23.15   | 23.26   | 23.24   |
|               | 16QAM      | 1       | 0         | 22.59   | 23.05   | 22.89   |
|               |            | 1       | 50        | 23.22   | 23.36   | 23.09   |
|               |            | 1       | 99        | 22.75   | 22.93   | 22.53   |
|               |            | 50      | 0         | 22.12   | 22.10   | 22.28   |
|               |            | 50      | 25        | 22.16   | 22.37   | 22.22   |
|               |            | 50      | 50        | 22.04   | 22.36   | 22.07   |
|               |            | 100     | 0         | 22.10   | 22.12   | 22.17   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 23017CH  | 23095CH  | 23173CH  |
|               |            |         |           | 699.7MHz | 707.5MHz | 715.3MHz |
| 12 / 1.4M     | QPSK       | 1       | 0         | 24.15    | 23.65    | 24.15    |
|               |            | 1       | 2         | 24.30    | 23.85    | 24.34    |
|               |            | 1       | 5         | 24.37    | 23.80    | 24.35    |
|               |            | 3       | 0         | 24.08    | 23.69    | 24.20    |
|               |            | 3       | 1         | 24.14    | 23.80    | 24.25    |
|               |            | 3       | 2         | 24.21    | 23.71    | 24.33    |
|               |            | 6       | 0         | 23.18    | 22.75    | 23.53    |
|               | 16QAM      | 1       | 0         | 23.41    | 23.06    | 23.65    |
|               |            | 1       | 2         | 23.50    | 23.05    | 23.71    |
|               |            | 1       | 5         | 23.61    | 23.00    | 23.84    |
|               |            | 3       | 0         | 23.43    | 22.84    | 23.45    |
|               |            | 3       | 1         | 23.50    | 22.97    | 23.43    |
|               |            | 3       | 2         | 23.56    | 22.98    | 23.58    |
|               |            | 6       | 0         | 22.59    | 21.97    | 22.33    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 23025CH  | 23095CH  | 23165CH  |
|               |            |         |           | 700.5MHz | 707.5MHz | 714.5MHz |
| 12 / 3M       | QPSK       | 1       | 0         | 24.14    | 23.78    | 24.44    |
|               |            | 1       | 7         | 24.31    | 23.95    | 24.38    |
|               |            | 1       | 14        | 24.22    | 23.84    | 24.43    |
|               |            | 8       | 0         | 23.35    | 22.85    | 23.64    |
|               |            | 8       | 4         | 23.40    | 22.73    | 23.56    |
|               |            | 8       | 7         | 23.28    | 22.82    | 23.51    |
|               |            | 15      | 0         | 23.29    | 22.77    | 23.59    |
|               | 16QAM      | 1       | 0         | 23.10    | 23.24    | 23.49    |
|               |            | 1       | 7         | 23.36    | 23.33    | 23.53    |
|               |            | 1       | 14        | 23.31    | 23.32    | 23.64    |
|               |            | 8       | 0         | 22.56    | 22.19    | 22.76    |
|               |            | 8       | 4         | 22.60    | 22.26    | 22.35    |
|               |            | 8       | 7         | 22.57    | 22.20    | 22.25    |
|               |            | 15      | 0         | 22.44    | 22.27    | 22.44    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 23035CH  | 23095CH  | 23155CH  |
|               |            |         |           | 701.5MHz | 707.5MHz | 713.5MHz |
| 12 / 5M       | QPSK       | 1       | 0         | 24.24    | 23.73    | 24.37    |
|               |            | 1       | 13        | 24.63    | 23.94    | 24.63    |
|               |            | 1       | 24        | 24.15    | 23.85    | 24.26    |
|               |            | 12      | 0         | 23.46    | 22.77    | 23.59    |
|               |            | 12      | 6         | 23.44    | 22.79    | 23.66    |
|               |            | 12      | 11        | 23.33    | 22.79    | 23.52    |
|               |            | 25      | 0         | 23.42    | 22.78    | 23.52    |
|               | 16QAM      | 1       | 0         | 23.19    | 23.25    | 23.39    |
|               |            | 1       | 13        | 23.62    | 23.48    | 23.77    |
|               |            | 1       | 24        | 23.28    | 23.38    | 23.42    |
|               |            | 12      | 0         | 22.61    | 22.10    | 22.41    |
|               |            | 12      | 6         | 22.57    | 22.14    | 22.49    |
|               |            | 12      | 11        | 22.50    | 22.13    | 22.47    |
|               |            | 25      | 0         | 22.60    | 22.15    | 22.40    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH   | High CH |
|---------------|------------|---------|-----------|---------|----------|---------|
|               |            |         |           | 23060CH | 23095CH  | 23130CH |
|               |            |         |           | 704MHz  | 707.5MHz | 711MHz  |
| 12 / 10M      | QPSK       | 1       | 0         | 23.44   | 23.55    | 23.02   |
|               |            | 1       | 25        | 24.13   | 23.97    | 24.54   |
|               |            | 1       | 49        | 23.11   | 23.58    | 23.53   |
|               |            | 25      | 0         | 23.14   | 22.74    | 22.81   |
|               |            | 25      | 13        | 23.16   | 22.99    | 23.46   |
|               |            | 25      | 25        | 22.78   | 22.98    | 23.31   |
|               |            | 50      | 0         | 22.79   | 22.76    | 23.18   |
|               | 16QAM      | 1       | 0         | 22.99   | 23.28    | 22.66   |
|               |            | 1       | 25        | 23.17   | 23.33    | 23.68   |
|               |            | 1       | 49        | 22.68   | 23.00    | 22.63   |
|               |            | 25      | 0         | 22.33   | 22.30    | 22.30   |
|               |            | 25      | 13        | 22.16   | 22.27    | 22.43   |
|               |            | 25      | 25        | 22.02   | 22.22    | 22.38   |
|               |            | 50      | 0         | 22.28   | 22.17    | 22.27   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH  | High CH  |
|---------------|------------|---------|-----------|----------|---------|----------|
|               |            |         |           | 23205CH  | 23230CH | 23255CH  |
|               |            |         |           | 779.5MHz | 782MHz  | 784.5MHz |
| 13 / 5M       | QPSK       | 1       | 0         | 24.03    | 24.52   | 24.07    |
|               |            | 1       | 13        | 24.12    | 24.55   | 24.24    |
|               |            | 1       | 24        | 24.05    | 24.57   | 24.04    |
|               |            | 12      | 0         | 23.30    | 23.33   | 23.35    |
|               |            | 12      | 6         | 23.30    | 23.26   | 23.54    |
|               |            | 12      | 11        | 23.34    | 23.24   | 23.48    |
|               |            | 25      | 0         | 23.24    | 23.26   | 23.29    |
|               | 16QAM      | 1       | 0         | 23.06    | 22.69   | 22.84    |
|               |            | 1       | 13        | 23.09    | 22.67   | 23.02    |
|               |            | 1       | 24        | 23.07    | 22.88   | 22.84    |
|               |            | 12      | 0         | 22.20    | 22.43   | 22.35    |
|               |            | 12      | 6         | 22.43    | 22.35   | 22.36    |
|               |            | 12      | 11        | 22.35    | 22.33   | 22.37    |
|               |            | 25      | 0         | 22.32    | 22.38   | 22.57    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Mid CH  |
|---------------|------------|---------|-----------|---------|
|               |            |         |           | 23230CH |
|               |            |         |           | 782MHz  |
| 13 / 10M      | QPSK       | 1       | 0         | 24.31   |
|               |            | 1       | 25        | 24.22   |
|               |            | 1       | 49        | 24.52   |
|               |            | 25      | 0         | 23.36   |
|               |            | 25      | 13        | 23.25   |
|               |            | 25      | 25        | 23.13   |
|               |            | 50      | 0         | 23.33   |
|               | 16QAM      | 1       | 0         | 23.07   |
|               |            | 1       | 25        | 23.29   |
|               |            | 1       | 49        | 23.15   |
|               |            | 25      | 0         | 22.40   |
|               |            | 25      | 13        | 22.31   |
|               |            | 25      | 25        | 22.19   |
|               |            | 50      | 0         | 22.39   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH  | High CH  |
|---------------|------------|---------|-----------|----------|---------|----------|
|               |            |         |           | 23755CH  | 23790CH | 23825CH  |
|               |            |         |           | 706.5MHz | 710MHz  | 713.5MHz |
| 17 / 5M       | QPSK       | 1       | 0         | 24.69    | 24.28   | 24.50    |
|               |            | 1       | 13        | 24.59    | 24.22   | 24.71    |
|               |            | 1       | 24        | 24.48    | 24.30   | 24.62    |
|               |            | 12      | 0         | 23.84    | 23.64   | 23.72    |
|               |            | 12      | 6         | 23.83    | 23.66   | 23.77    |
|               |            | 12      | 11        | 23.70    | 23.68   | 23.75    |
|               |            | 25      | 0         | 23.74    | 23.69   | 23.70    |
|               | 16QAM      | 1       | 0         | 23.65    | 23.35   | 23.22    |
|               |            | 1       | 13        | 23.21    | 23.16   | 23.50    |
|               |            | 1       | 24        | 23.22    | 23.22   | 23.60    |
|               |            | 12      | 0         | 22.85    | 22.77   | 22.52    |
|               |            | 12      | 6         | 22.73    | 22.41   | 22.56    |
|               |            | 12      | 11        | 22.72    | 22.37   | 22.73    |
|               |            | 25      | 0         | 22.82    | 22.67   | 22.55    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH  | High CH |
|---------------|------------|---------|-----------|---------|---------|---------|
|               |            |         |           | 23780CH | 23790CH | 23800CH |
|               |            |         |           | 709MHz  | 710MHz  | 711MHz  |
| 17 / 10M      | QPSK       | 1       | 0         | 24.82   | 24.77   | 24.81   |
|               |            | 1       | 13        | 24.79   | 24.35   | 24.79   |
|               |            | 1       | 24        | 24.71   | 24.50   | 24.50   |
|               |            | 12      | 0         | 23.80   | 23.79   | 23.75   |
|               |            | 12      | 6         | 23.68   | 23.67   | 23.60   |
|               |            | 12      | 11        | 23.62   | 23.56   | 23.75   |
|               |            | 25      | 0         | 23.63   | 23.63   | 23.71   |
|               | 16QAM      | 1       | 0         | 23.90   | 23.80   | 23.70   |
|               |            | 1       | 13        | 23.63   | 23.79   | 23.14   |
|               |            | 1       | 24        | 23.52   | 23.60   | 23.56   |
|               |            | 12      | 0         | 22.96   | 22.62   | 22.90   |
|               |            | 12      | 6         | 22.75   | 22.57   | 22.71   |
|               |            | 12      | 11        | 22.69   | 22.54   | 22.80   |
|               |            | 25      | 0         | 22.67   | 22.69   | 22.60   |

| LTE Band / BW | Modulation | RB Siset | RB Offset | Low CH    | Mid CH  | High CH   |
|---------------|------------|----------|-----------|-----------|---------|-----------|
|               |            |          |           | 39675CH   | 40620CH | 41565CH   |
|               |            |          |           | 2498.5MHz | 2593MHz | 2687.5MHz |
| 41 / 5M       | QPSK       | 1        | 0         | 23.52     | 23.22   | 23.70     |
|               |            | 1        | 13        | 23.73     | 23.35   | 23.79     |
|               |            | 1        | 24        | 23.70     | 23.43   | 23.46     |
|               |            | 12       | 0         | 22.62     | 22.70   | 22.84     |
|               |            | 12       | 6         | 22.72     | 22.70   | 22.92     |
|               |            | 12       | 11        | 22.76     | 22.58   | 22.88     |
|               |            | 25       | 0         | 22.66     | 22.63   | 22.87     |
|               | 16QAM      | 1        | 0         | 22.47     | 22.02   | 22.61     |
|               |            | 1        | 13        | 22.55     | 22.14   | 22.54     |
|               |            | 1        | 24        | 22.43     | 21.96   | 22.57     |
|               |            | 12       | 0         | 21.76     | 21.50   | 21.91     |
|               |            | 12       | 6         | 21.95     | 21.63   | 21.91     |
|               |            | 12       | 11        | 21.89     | 21.56   | 21.94     |
|               |            | 25       | 0         | 21.63     | 21.68   | 21.74     |

| LTE Band / BW | Modulation | RB Siset | RB Offset | Low CH  | Mid CH  | High CH |
|---------------|------------|----------|-----------|---------|---------|---------|
|               |            |          |           | 39700CH | 40620CH | 41540CH |
|               |            |          |           | 2501MHz | 2593MHz | 2685MHz |
| 41 / 10M      | QPSK       | 1        | 0         | 23.65   | 23.40   | 23.75   |
|               |            | 1        | 25        | 23.78   | 23.55   | 23.84   |
|               |            | 1        | 49        | 23.86   | 23.39   | 23.66   |
|               |            | 25       | 0         | 22.76   | 22.53   | 22.76   |
|               |            | 25       | 13        | 22.82   | 22.66   | 22.95   |
|               |            | 25       | 25        | 22.74   | 22.55   | 22.88   |
|               |            | 50       | 0         | 22.72   | 22.55   | 22.81   |
|               | 16QAM      | 1        | 0         | 22.86   | 21.95   | 23.56   |
|               |            | 1        | 25        | 23.34   | 22.28   | 23.79   |
|               |            | 1        | 49        | 23.28   | 21.96   | 23.30   |
|               |            | 25       | 0         | 21.84   | 21.60   | 21.75   |
|               |            | 25       | 13        | 21.99   | 21.73   | 21.84   |
|               |            | 25       | 25        | 21.95   | 21.54   | 21.79   |
|               |            | 50       | 0         | 21.84   | 21.65   | 21.83   |

| LTE Band / BW | Modulation | RB Sizer | RB Offset | Low CH    | Mid CH  | High CH   |
|---------------|------------|----------|-----------|-----------|---------|-----------|
|               |            |          |           | 39725CH   | 40620CH | 41515CH   |
|               |            |          |           | 2503.5MHz | 2593MHz | 2682.5MHz |
| 41 / 15M      | QPSK       | 1        | 0         | 23.51     | 23.44   | 23.67     |
|               |            | 1        | 38        | 23.71     | 23.39   | 23.58     |
|               |            | 1        | 74        | 23.71     | 23.33   | 23.69     |
|               |            | 36       | 0         | 22.64     | 22.48   | 22.76     |
|               |            | 36       | 18        | 22.66     | 22.71   | 22.90     |
|               |            | 36       | 39        | 22.92     | 22.42   | 22.63     |
|               |            | 75       | 0         | 22.93     | 22.43   | 22.71     |
|               | 16QAM      | 1        | 0         | 22.54     | 22.03   | 22.86     |
|               |            | 1        | 38        | 23.13     | 22.09   | 22.95     |
|               |            | 1        | 74        | 22.91     | 21.93   | 22.89     |
|               |            | 36       | 0         | 21.92     | 21.64   | 21.78     |
|               |            | 36       | 18        | 21.67     | 21.79   | 21.67     |
|               |            | 36       | 39        | 21.66     | 21.60   | 21.67     |
|               |            | 75       | 0         | 21.92     | 21.60   | 21.72     |

| LTE Band / BW | Modulation | RB Sizer | RB Offset | Low CH  | Mid CH  | High CH |
|---------------|------------|----------|-----------|---------|---------|---------|
|               |            |          |           | 39750CH | 40620CH | 41490CH |
|               |            |          |           | 2506MHz | 2593MHz | 2680MHz |
| 41 / 20M      | QPSK       | 1        | 0         | 23.46   | 23.54   | 23.57   |
|               |            | 1        | 50        | 23.95   | 23.78   | 24.00   |
|               |            | 1        | 99        | 23.63   | 23.52   | 23.70   |
|               |            | 50       | 0         | 22.73   | 22.57   | 22.74   |
|               |            | 50       | 25        | 22.89   | 22.59   | 22.81   |
|               |            | 50       | 50        | 22.82   | 22.38   | 22.59   |
|               |            | 100      | 0         | 22.90   | 22.43   | 22.82   |
|               | 16QAM      | 1        | 0         | 22.30   | 22.14   | 22.92   |
|               |            | 1        | 50        | 22.88   | 22.08   | 23.28   |
|               |            | 1        | 99        | 22.50   | 21.70   | 23.11   |
|               |            | 50       | 0         | 21.83   | 21.57   | 21.78   |
|               |            | 50       | 25        | 22.05   | 21.67   | 21.87   |
|               |            | 50       | 50        | 21.92   | 21.53   | 21.72   |
|               |            | 100      | 0         | 21.92   | 21.54   | 21.74   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH   | High CH   |
|---------------|------------|---------|-----------|-----------|----------|-----------|
|               |            |         |           | 131979CH  | 132322CH | 132665CH  |
|               |            |         |           | 1710.7MHz | 1745MHz  | 1779.3MHz |
| 66 / 1.4M     | QPSK       | 1       | 0         | 24.48     | 23.58    | 23.40     |
|               |            | 1       | 2         | 24.54     | 23.65    | 23.39     |
|               |            | 1       | 5         | 24.42     | 23.56    | 23.12     |
|               |            | 3       | 0         | 24.43     | 23.55    | 23.31     |
|               |            | 3       | 1         | 24.43     | 23.60    | 23.35     |
|               |            | 3       | 2         | 24.42     | 23.61    | 23.25     |
|               |            | 6       | 0         | 23.34     | 22.42    | 22.16     |
|               | 16QAM      | 1       | 0         | 23.27     | 22.77    | 22.07     |
|               |            | 1       | 2         | 23.40     | 22.21    | 22.37     |
|               |            | 1       | 5         | 22.99     | 22.56    | 22.12     |
|               |            | 3       | 0         | 23.38     | 22.62    | 22.43     |
|               |            | 3       | 1         | 23.22     | 22.50    | 22.45     |
|               |            | 3       | 2         | 23.18     | 22.47    | 22.35     |
|               |            | 6       | 0         | 22.18     | 21.29    | 21.29     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH   | High CH   |
|---------------|------------|---------|-----------|-----------|----------|-----------|
|               |            |         |           | 131987CH  | 132322CH | 132657CH  |
|               |            |         |           | 1711.5MHz | 1745MHz  | 1778.5MHz |
| 66 / 3M       | QPSK       | 1       | 0         | 24.45     | 23.49    | 23.27     |
|               |            | 1       | 7         | 24.47     | 23.63    | 23.52     |
|               |            | 1       | 14        | 24.59     | 23.66    | 23.47     |
|               |            | 8       | 0         | 23.27     | 22.57    | 22.22     |
|               |            | 8       | 4         | 23.28     | 22.62    | 22.21     |
|               |            | 8       | 7         | 23.26     | 22.66    | 22.18     |
|               |            | 15      | 0         | 23.28     | 22.61    | 22.27     |
|               | 16QAM      | 1       | 0         | 23.15     | 23.00    | 22.12     |
|               |            | 1       | 7         | 23.43     | 23.03    | 22.26     |
|               |            | 1       | 14        | 23.40     | 23.08    | 22.30     |
|               |            | 8       | 0         | 22.36     | 21.56    | 21.34     |
|               |            | 8       | 4         | 22.26     | 21.38    | 21.22     |
|               |            | 8       | 7         | 22.26     | 21.41    | 21.40     |
|               |            | 15      | 0         | 22.31     | 21.63    | 21.14     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH   | High CH   |
|---------------|------------|---------|-----------|-----------|----------|-----------|
|               |            |         |           | 131997CH  | 132322CH | 132647CH  |
|               |            |         |           | 1712.5MHz | 1745MHz  | 1777.5MHz |
| 66 / 5M       | QPSK       | 1       | 0         | 24.27     | 23.38    | 23.26     |
|               |            | 1       | 13        | 24.16     | 23.26    | 23.07     |
|               |            | 1       | 24        | 24.11     | 23.36    | 23.16     |
|               |            | 12      | 0         | 23.23     | 22.60    | 22.22     |
|               |            | 12      | 6         | 23.18     | 22.62    | 22.16     |
|               |            | 12      | 11        | 23.21     | 22.67    | 22.10     |
|               |            | 25      | 0         | 23.20     | 22.45    | 22.10     |
|               | 16QAM      | 1       | 0         | 22.71     | 22.53    | 21.70     |
|               |            | 1       | 13        | 22.69     | 22.53    | 21.67     |
|               |            | 1       | 24        | 22.60     | 22.08    | 21.74     |
|               |            | 12      | 0         | 22.23     | 21.65    | 21.20     |
|               |            | 12      | 6         | 22.32     | 21.53    | 21.20     |
|               |            | 12      | 11        | 22.25     | 21.45    | 21.15     |
|               |            | 25      | 0         | 22.27     | 21.53    | 21.12     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 132022CH | 132322CH | 132622CH |
|               |            |         |           | 1715MHz  | 1745MHz  | 1775MHz  |
| 66 / 10M      | QPSK       | 1       | 0         | 24.39    | 23.50    | 23.09    |
|               |            | 1       | 25        | 24.67    | 23.55    | 23.32    |
|               |            | 1       | 49        | 24.21    | 23.57    | 23.07    |
|               |            | 25      | 0         | 23.12    | 22.45    | 22.18    |
|               |            | 25      | 13        | 23.26    | 22.54    | 22.10    |
|               |            | 25      | 25        | 23.23    | 22.58    | 22.01    |
|               |            | 50      | 0         | 23.18    | 22.54    | 22.02    |
|               | 16QAM      | 1       | 0         | 23.37    | 22.87    | 22.22    |
|               |            | 1       | 25        | 23.70    | 22.95    | 22.17    |
|               |            | 1       | 49        | 23.55    | 22.38    | 22.04    |
|               |            | 25      | 0         | 22.14    | 21.48    | 21.41    |
|               |            | 25      | 13        | 22.27    | 21.66    | 21.29    |
|               |            | 25      | 25        | 22.14    | 21.66    | 21.27    |
|               |            | 50      | 0         | 21.99    | 21.65    | 21.12    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH   | High CH   |
|---------------|------------|---------|-----------|-----------|----------|-----------|
|               |            |         |           | 132047CH  | 132322CH | 132597CH  |
|               |            |         |           | 1717.5MHz | 1745MHz  | 1772.5MHz |
| 66 / 15M      | QPSK       | 1       | 0         | 24.53     | 23.34    | 23.22     |
|               |            | 1       | 38        | 24.16     | 23.41    | 23.07     |
|               |            | 1       | 74        | 23.98     | 23.66    | 22.99     |
|               |            | 36      | 0         | 23.16     | 22.46    | 22.27     |
|               |            | 36      | 18        | 23.16     | 22.59    | 22.19     |
|               |            | 36      | 39        | 23.13     | 22.53    | 22.04     |
|               |            | 75      | 0         | 23.04     | 22.53    | 22.16     |
|               | 16QAM      | 1       | 0         | 23.32     | 22.51    | 23.11     |
|               |            | 1       | 38        | 23.11     | 22.67    | 23.08     |
|               |            | 1       | 74        | 23.50     | 22.87    | 22.75     |
|               |            | 36      | 0         | 21.99     | 21.62    | 21.35     |
|               |            | 36      | 18        | 21.98     | 21.65    | 21.18     |
|               |            | 36      | 39        | 22.03     | 21.67    | 21.00     |
|               |            | 75      | 0         | 21.99     | 21.67    | 21.26     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 132072CH | 132322CH | 132572CH |
|               |            |         |           | 1720MHz  | 1745MHz  | 1770MHz  |
| 66 / 20M      | QPSK       | 1       | 0         | 23.90    | 23.51    | 23.21    |
|               |            | 1       | 50        | 23.87    | 23.61    | 23.05    |
|               |            | 1       | 99        | 23.58    | 23.67    | 22.95    |
|               |            | 50      | 0         | 23.19    | 22.53    | 22.21    |
|               |            | 50      | 25        | 23.09    | 22.51    | 22.14    |
|               |            | 50      | 50        | 23.01    | 22.49    | 22.08    |
|               |            | 100     | 0         | 23.01    | 22.46    | 22.26    |
|               | 16QAM      | 1       | 0         | 22.81    | 22.43    | 22.19    |
|               |            | 1       | 50        | 22.86    | 22.65    | 21.71    |
|               |            | 1       | 99        | 22.50    | 22.55    | 21.66    |
|               |            | 50      | 0         | 22.07    | 21.47    | 21.30    |
|               |            | 50      | 25        | 22.06    | 21.64    | 21.22    |
|               |            | 50      | 50        | 21.96    | 21.60    | 21.15    |
|               |            | 100     | 0         | 21.98    | 21.58    | 21.32    |

| LTE Band / BW | Modulation | RB Sizer | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|----------|-----------|----------|----------|----------|
|               |            |          |           | 133147CH | 133297CH | 133447CH |
|               |            |          |           | 665.5MHz | 680.5MHz | 695.5MHz |
| 71 / 5M       | QPSK       | 1        | 0         | 23.61    | 23.12    | 23.32    |
|               |            | 1        | 13        | 23.31    | 23.28    | 23.42    |
|               |            | 1        | 24        | 23.01    | 23.16    | 23.31    |
|               |            | 12       | 0         | 22.49    | 22.37    | 22.34    |
|               |            | 12       | 6         | 22.50    | 22.44    | 22.35    |
|               |            | 12       | 11        | 22.55    | 22.43    | 22.40    |
|               |            | 25       | 0         | 22.43    | 22.31    | 22.30    |
|               | 16QAM      | 1        | 0         | 22.21    | 22.33    | 21.95    |
|               |            | 1        | 13        | 21.84    | 21.97    | 21.73    |
|               |            | 1        | 24        | 21.95    | 21.81    | 22.09    |
|               |            | 12       | 0         | 21.27    | 21.29    | 21.23    |
|               |            | 12       | 6         | 21.55    | 21.35    | 21.33    |
|               |            | 12       | 11        | 21.53    | 21.36    | 21.38    |
|               |            | 25       | 0         | 21.52    | 21.42    | 21.42    |

| LTE Band / BW | Modulation | RB Sizer | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|----------|-----------|----------|----------|----------|
|               |            |          |           | 133172CH | 133297CH | 133422CH |
|               |            |          |           | 668MHz   | 680.5MHz | 693MHz   |
| 71 / 10M      | QPSK       | 1        | 0         | 23.60    | 23.34    | 23.18    |
|               |            | 1        | 25        | 23.18    | 23.81    | 23.56    |
|               |            | 1        | 49        | 23.52    | 23.49    | 23.15    |
|               |            | 25       | 0         | 22.50    | 22.44    | 22.40    |
|               |            | 25       | 13        | 22.38    | 22.48    | 22.35    |
|               |            | 25       | 25        | 22.30    | 22.46    | 22.36    |
|               |            | 50       | 0         | 22.31    | 22.41    | 22.35    |
|               | 16QAM      | 1        | 0         | 22.27    | 22.25    | 22.04    |
|               |            | 1        | 25        | 23.08    | 22.67    | 22.29    |
|               |            | 1        | 49        | 22.25    | 22.53    | 21.77    |
|               |            | 25       | 0         | 21.63    | 21.28    | 21.28    |
|               |            | 25       | 13        | 21.53    | 21.34    | 21.32    |
|               |            | 25       | 25        | 21.54    | 21.51    | 21.33    |
|               |            | 50       | 0         | 21.33    | 21.24    | 21.33    |

| LTE Band / BW | Modulation | RB Sizer | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|----------|-----------|----------|----------|----------|
|               |            |          |           | 133197CH | 133297CH | 133397CH |
|               |            |          |           | 670.5MHz | 680.5MHz | 690.5MHz |
| 71 / 15M      | QPSK       | 1        | 0         | 23.49    | 23.50    | 23.07    |
|               |            | 1        | 38        | 23.54    | 23.73    | 23.21    |
|               |            | 1        | 74        | 23.28    | 23.59    | 23.16    |
|               |            | 36       | 0         | 22.38    | 22.45    | 22.49    |
|               |            | 36       | 18        | 22.46    | 22.44    | 22.43    |
|               |            | 36       | 39        | 22.56    | 22.45    | 22.45    |
|               |            | 75       | 0         | 22.48    | 22.32    | 22.38    |
|               | 16QAM      | 1        | 0         | 22.40    | 22.42    | 22.35    |
|               |            | 1        | 38        | 23.12    | 22.84    | 22.45    |
|               |            | 1        | 74        | 22.87    | 22.53    | 22.66    |
|               |            | 36       | 0         | 21.29    | 21.33    | 21.41    |
|               |            | 36       | 18        | 21.31    | 21.32    | 21.35    |
|               |            | 36       | 39        | 21.29    | 21.32    | 21.36    |
|               |            | 75       | 0         | 21.25    | 21.31    | 21.30    |

| LTE Band / BW | Modulation | RB Sizer | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|----------|-----------|----------|----------|----------|
|               |            |          |           | 133222CH | 133322CH | 133372CH |
|               |            |          |           | 673MHz   | 683MHz   | 688MHz   |
| 71 / 20M      | QPSK       | 1        | 0         | 23.10    | 22.82    | 23.36    |
|               |            | 1        | 50        | 23.78    | 23.36    | 23.64    |
|               |            | 1        | 99        | 23.01    | 22.92    | 23.35    |
|               |            | 50       | 0         | 22.28    | 22.36    | 22.44    |
|               |            | 50       | 25        | 22.48    | 22.51    | 22.45    |
|               |            | 50       | 50        | 22.40    | 22.43    | 22.31    |
|               |            | 100      | 0         | 22.41    | 22.36    | 22.36    |
|               | 16QAM      | 1        | 0         | 22.41    | 21.61    | 21.70    |
|               |            | 1        | 50        | 22.98    | 22.69    | 22.40    |
|               |            | 1        | 99        | 22.27    | 21.72    | 21.80    |
|               |            | 50       | 0         | 21.32    | 21.37    | 21.40    |
|               |            | 50       | 25        | 21.43    | 21.50    | 21.45    |
|               |            | 50       | 50        | 21.25    | 21.26    | 21.13    |
|               |            | 100      | 0         | 21.30    | 21.34    | 21.24    |

**EIRP Power (dBm):**

| Modulation | Band       | WCDMA Band IV |           |           |
|------------|------------|---------------|-----------|-----------|
|            | Tx Channel | 1312CH        | 1413CH    | 1513CH    |
|            | Frequency  | 1712.4MHz     | 1732.6MHz | 1752.6MHz |
| QPSK       | RMC 12.2K  | 24.53         | 24.75     | 24.69     |
|            | RMC 64K    | 24.55         | 24.64     | 24.76     |
|            | RMC 144K   | 24.62         | 24.68     | 24.74     |
|            | RMC 384K   | 24.66         | 24.79     | 24.78     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH    | High CH   |
|---------------|------------|---------|-----------|-----------|-----------|-----------|
|               |            |         |           | 19957CH   | 20175CH   | 20393CH   |
|               |            |         |           | 1710.7MHz | 1732.5MHz | 1754.3MHz |
| 4 / 1.4M      | QPSK       | 1       | 0         | 25.42     | 25.48     | 25.33     |
|               |            | 1       | 2         | 25.44     | 25.57     | 25.52     |
|               |            | 1       | 5         | 25.24     | 25.47     | 25.33     |
|               |            | 3       | 0         | 25.21     | 25.40     | 25.38     |
|               |            | 3       | 1         | 25.24     | 25.53     | 25.49     |
|               |            | 3       | 2         | 25.25     | 25.49     | 25.41     |
|               |            | 6       | 0         | 24.14     | 24.55     | 24.30     |
|               | 16QAM      | 1       | 0         | 24.08     | 24.41     | 23.98     |
|               |            | 1       | 2         | 24.19     | 24.51     | 23.92     |
|               |            | 1       | 5         | 24.12     | 24.28     | 23.96     |
|               |            | 3       | 0         | 23.95     | 24.34     | 23.68     |
|               |            | 3       | 1         | 24.37     | 24.37     | 24.21     |
|               |            | 3       | 2         | 24.30     | 24.31     | 24.27     |
|               |            | 6       | 0         | 23.23     | 23.36     | 22.99     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH    | High CH   |
|---------------|------------|---------|-----------|-----------|-----------|-----------|
|               |            |         |           | 19965CH   | 20175CH   | 20385CH   |
|               |            |         |           | 1711.5MHz | 1732.5MHz | 1753.5MHz |
| 4 / 3M        | QPSK       | 1       | 0         | 25.30     | 25.51     | 25.23     |
|               |            | 1       | 7         | 25.41     | 25.58     | 25.44     |
|               |            | 1       | 14        | 25.41     | 25.49     | 25.43     |
|               |            | 8       | 0         | 24.18     | 24.37     | 24.21     |
|               |            | 8       | 4         | 24.08     | 24.36     | 24.21     |
|               |            | 8       | 7         | 24.05     | 24.37     | 24.18     |
|               |            | 15      | 0         | 24.08     | 24.43     | 24.12     |
|               | 16QAM      | 1       | 0         | 24.20     | 24.76     | 24.19     |
|               |            | 1       | 7         | 24.21     | 24.79     | 24.17     |
|               |            | 1       | 14        | 24.27     | 24.66     | 24.35     |
|               |            | 8       | 0         | 23.30     | 23.46     | 23.07     |
|               |            | 8       | 4         | 23.21     | 23.64     | 22.90     |
|               |            | 8       | 7         | 23.30     | 23.55     | 22.96     |
|               |            | 15      | 0         | 23.23     | 23.41     | 23.09     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH    | High CH   |
|---------------|------------|---------|-----------|-----------|-----------|-----------|
|               |            |         |           | 19975CH   | 20175CH   | 20375CH   |
|               |            |         |           | 1712.5MHz | 1732.5MHz | 1752.5MHz |
| 4 / 5M        | QPSK       | 1       | 0         | 25.15     | 25.26     | 25.26     |
|               |            | 1       | 13        | 25.28     | 25.23     | 25.29     |
|               |            | 1       | 24        | 25.19     | 25.21     | 25.40     |
|               |            | 12      | 0         | 24.03     | 24.39     | 24.33     |
|               |            | 12      | 6         | 24.18     | 24.45     | 24.37     |
|               |            | 12      | 11        | 24.22     | 24.44     | 24.38     |
|               |            | 25      | 0         | 24.11     | 24.41     | 24.35     |
|               | 16QAM      | 1       | 0         | 23.52     | 23.86     | 24.08     |
|               |            | 1       | 13        | 23.65     | 23.90     | 23.88     |
|               |            | 1       | 24        | 23.58     | 23.79     | 24.12     |
|               |            | 12      | 0         | 23.17     | 23.28     | 23.11     |
|               |            | 12      | 6         | 23.22     | 23.23     | 23.18     |
|               |            | 12      | 11        | 23.36     | 23.27     | 23.18     |
|               |            | 25      | 0         | 23.39     | 23.34     | 23.37     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH    | High CH |
|---------------|------------|---------|-----------|---------|-----------|---------|
|               |            |         |           | 20000CH | 20175CH   | 20350CH |
|               |            |         |           | 1715MHz | 1732.5MHz | 1750MHz |
| 4 / 10M       | QPSK       | 1       | 0         | 25.35   | 25.03     | 25.23   |
|               |            | 1       | 25        | 25.61   | 25.74     | 25.52   |
|               |            | 1       | 49        | 24.90   | 25.18     | 25.34   |
|               |            | 25      | 0         | 24.12   | 24.33     | 24.16   |
|               |            | 25      | 13        | 24.05   | 24.51     | 24.21   |
|               |            | 25      | 25        | 23.99   | 24.38     | 24.24   |
|               |            | 50      | 0         | 23.96   | 24.37     | 24.21   |
|               | 16QAM      | 1       | 0         | 24.16   | 24.49     | 24.07   |
|               |            | 1       | 25        | 24.50   | 24.46     | 24.26   |
|               |            | 1       | 49        | 23.75   | 24.08     | 24.35   |
|               |            | 25      | 0         | 23.12   | 23.45     | 23.28   |
|               |            | 25      | 13        | 22.96   | 23.53     | 23.58   |
|               |            | 25      | 25        | 22.78   | 23.44     | 23.39   |
|               |            | 50      | 0         | 22.93   | 23.47     | 23.20   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH    | High CH   |
|---------------|------------|---------|-----------|-----------|-----------|-----------|
|               |            |         |           | 20025CH   | 20175CH   | 20325CH   |
|               |            |         |           | 1717.5MHz | 1732.5MHz | 1747.5MHz |
| 4 / 15M       | QPSK       | 1       | 0         | 25.35     | 25.03     | 25.19     |
|               |            | 1       | 38        | 24.99     | 25.52     | 25.24     |
|               |            | 1       | 74        | 25.52     | 25.02     | 25.31     |
|               |            | 36      | 0         | 23.91     | 24.18     | 23.90     |
|               |            | 36      | 18        | 23.77     | 24.29     | 24.08     |
|               |            | 36      | 39        | 23.80     | 24.31     | 24.16     |
|               |            | 75      | 0         | 23.92     | 24.17     | 24.00     |
|               | 16QAM      | 1       | 0         | 23.93     | 24.15     | 24.53     |
|               |            | 1       | 38        | 24.40     | 24.69     | 24.96     |
|               |            | 1       | 74        | 24.48     | 24.61     | 24.80     |
|               |            | 36      | 0         | 23.04     | 23.36     | 22.91     |
|               |            | 36      | 18        | 22.88     | 23.38     | 23.19     |
|               |            | 36      | 39        | 22.90     | 23.27     | 23.17     |
|               |            | 75      | 0         | 22.89     | 23.31     | 23.04     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH    | High CH |
|---------------|------------|---------|-----------|---------|-----------|---------|
|               |            |         |           | 20050CH | 20175CH   | 20300CH |
|               |            |         |           | 1720MHz | 1732.5MHz | 1745MHz |
| 4 / 20M       | QPSK       | 1       | 0         | 24.97   | 25.07     | 25.03   |
|               |            | 1       | 50        | 24.92   | 25.59     | 25.18   |
|               |            | 1       | 99        | 24.84   | 24.92     | 24.99   |
|               |            | 50      | 0         | 23.96   | 24.21     | 24.07   |
|               |            | 50      | 25        | 23.93   | 24.42     | 24.04   |
|               |            | 50      | 50        | 24.12   | 24.29     | 24.11   |
|               |            | 100     | 0         | 24.02   | 24.35     | 24.12   |
|               | 16QAM      | 1       | 0         | 23.59   | 24.00     | 24.09   |
|               |            | 1       | 50        | 23.52   | 24.67     | 23.84   |
|               |            | 1       | 99        | 23.75   | 23.92     | 24.20   |
|               |            | 50      | 0         | 23.05   | 23.35     | 23.19   |
|               |            | 50      | 25        | 22.98   | 23.47     | 23.06   |
|               |            | 50      | 50        | 23.25   | 23.30     | 23.17   |
|               |            | 100     | 0         | 23.10   | 23.32     | 23.15   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH  | High CH   |
|---------------|------------|---------|-----------|-----------|---------|-----------|
|               |            |         |           | 20775CH   | 21100CH | 21425CH   |
|               |            |         |           | 2502.5MHz | 2535MHz | 2567.5MHz |
| 7 / 5M        | QPSK       | 1       | 0         | 26.71     | 27.01   | 27.07     |
|               |            | 1       | 13        | 26.57     | 27.36   | 27.29     |
|               |            | 1       | 24        | 26.71     | 27.48   | 27.02     |
|               |            | 12      | 0         | 25.84     | 26.13   | 25.99     |
|               |            | 12      | 6         | 25.82     | 26.25   | 25.98     |
|               |            | 12      | 11        | 25.86     | 26.18   | 25.96     |
|               |            | 25      | 0         | 25.83     | 26.08   | 26.01     |
|               | 16QAM      | 1       | 0         | 25.21     | 25.80   | 25.57     |
|               |            | 1       | 13        | 25.47     | 26.08   | 25.90     |
|               |            | 1       | 24        | 25.38     | 25.80   | 25.70     |
|               |            | 12      | 0         | 24.89     | 25.22   | 24.95     |
|               |            | 12      | 6         | 25.02     | 25.36   | 24.92     |
|               |            | 12      | 11        | 24.91     | 25.44   | 25.07     |
|               |            | 25      | 0         | 24.80     | 25.26   | 25.12     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH  | High CH |
|---------------|------------|---------|-----------|---------|---------|---------|
|               |            |         |           | 20800CH | 21100CH | 21400CH |
|               |            |         |           | 2505MHz | 2535MHz | 2565MHz |
| 7 / 10M       | QPSK       | 1       | 0         | 27.01   | 27.22   | 27.04   |
|               |            | 1       | 25        | 27.45   | 27.55   | 27.18   |
|               |            | 1       | 49        | 27.02   | 27.48   | 27.11   |
|               |            | 25      | 0         | 26.04   | 26.20   | 26.04   |
|               |            | 25      | 13        | 26.04   | 26.31   | 26.11   |
|               |            | 25      | 25        | 25.95   | 26.25   | 26.05   |
|               |            | 50      | 0         | 25.94   | 26.21   | 26.03   |
|               | 16QAM      | 1       | 0         | 25.94   | 26.63   | 26.20   |
|               |            | 1       | 25        | 26.56   | 26.29   | 26.87   |
|               |            | 1       | 49        | 26.17   | 25.92   | 25.92   |
|               |            | 25      | 0         | 25.07   | 25.25   | 25.20   |
|               |            | 25      | 13        | 25.22   | 25.38   | 25.20   |
|               |            | 25      | 25        | 25.06   | 25.39   | 25.14   |
|               |            | 50      | 0         | 24.95   | 25.07   | 25.06   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH  | High CH   |
|---------------|------------|---------|-----------|-----------|---------|-----------|
|               |            |         |           | 20825CH   | 21100CH | 21375CH   |
|               |            |         |           | 2507.5MHz | 2535MHz | 2562.5MHz |
| 7 / 15M       | QPSK       | 1       | 0         | 27.19     | 27.22   | 27.21     |
|               |            | 1       | 38        | 27.30     | 27.36   | 27.08     |
|               |            | 1       | 74        | 27.06     | 27.24   | 27.09     |
|               |            | 36      | 0         | 26.00     | 26.20   | 26.26     |
|               |            | 36      | 18        | 26.08     | 26.27   | 26.16     |
|               |            | 36      | 39        | 26.05     | 26.33   | 26.12     |
|               |            | 75      | 0         | 26.08     | 26.22   | 26.10     |
|               | 16QAM      | 1       | 0         | 25.94     | 25.61   | 26.59     |
|               |            | 1       | 38        | 26.32     | 25.84   | 26.76     |
|               |            | 1       | 74        | 26.33     | 25.75   | 26.88     |
|               |            | 36      | 0         | 25.01     | 25.28   | 25.19     |
|               |            | 36      | 18        | 25.05     | 25.19   | 25.16     |
|               |            | 36      | 39        | 25.05     | 25.25   | 25.09     |
|               |            | 75      | 0         | 25.12     | 25.16   | 25.14     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH  | High CH |
|---------------|------------|---------|-----------|---------|---------|---------|
|               |            |         |           | 20850CH | 21100CH | 21350CH |
|               |            |         |           | 2510MHz | 2535MHz | 2560MHz |
| 7 / 20M       | QPSK       | 1       | 0         | 26.83   | 27.06   | 27.18   |
|               |            | 1       | 50        | 27.23   | 27.45   | 27.34   |
|               |            | 1       | 99        | 26.85   | 27.18   | 27.13   |
|               |            | 50      | 0         | 26.10   | 26.27   | 26.35   |
|               |            | 50      | 25        | 26.10   | 26.40   | 26.31   |
|               |            | 50      | 50        | 26.04   | 26.40   | 26.12   |
|               |            | 100     | 0         | 26.15   | 26.26   | 26.24   |
|               | 16QAM      | 1       | 0         | 25.59   | 26.05   | 25.89   |
|               |            | 1       | 50        | 26.22   | 26.36   | 26.09   |
|               |            | 1       | 99        | 25.75   | 25.93   | 25.53   |
|               |            | 50      | 0         | 25.12   | 25.10   | 25.28   |
|               |            | 50      | 25        | 25.16   | 25.37   | 25.22   |
|               |            | 50      | 50        | 25.04   | 25.36   | 25.07   |
|               |            | 100     | 0         | 25.10   | 25.12   | 25.17   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH   | High CH   |
|---------------|------------|---------|-----------|-----------|----------|-----------|
|               |            |         |           | 131979CH  | 132322CH | 132665CH  |
|               |            |         |           | 1710.7MHz | 1745MHz  | 1779.3MHz |
| 66 / 1.4M     | QPSK       | 1       | 0         | 26.48     | 25.58    | 25.40     |
|               |            | 1       | 2         | 26.54     | 25.65    | 25.39     |
|               |            | 1       | 5         | 26.42     | 25.56    | 25.12     |
|               |            | 3       | 0         | 26.43     | 25.55    | 25.31     |
|               |            | 3       | 1         | 26.43     | 25.60    | 25.35     |
|               |            | 3       | 2         | 26.42     | 25.61    | 25.25     |
|               |            | 6       | 0         | 25.34     | 24.42    | 24.16     |
|               | 16QAM      | 1       | 0         | 25.27     | 24.77    | 24.07     |
|               |            | 1       | 2         | 25.40     | 24.21    | 24.37     |
|               |            | 1       | 5         | 24.99     | 24.56    | 24.12     |
|               |            | 3       | 0         | 25.38     | 24.62    | 24.43     |
|               |            | 3       | 1         | 25.22     | 24.50    | 24.45     |
|               |            | 3       | 2         | 25.18     | 24.47    | 24.35     |
|               |            | 6       | 0         | 24.18     | 23.29    | 23.29     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH   | High CH   |
|---------------|------------|---------|-----------|-----------|----------|-----------|
|               |            |         |           | 131987CH  | 132322CH | 132657CH  |
|               |            |         |           | 1711.5MHz | 1745MHz  | 1778.5MHz |
| 66 / 3M       | QPSK       | 1       | 0         | 26.45     | 25.49    | 25.27     |
|               |            | 1       | 7         | 26.47     | 25.63    | 25.52     |
|               |            | 1       | 14        | 26.59     | 25.66    | 25.47     |
|               |            | 8       | 0         | 25.27     | 24.57    | 24.22     |
|               |            | 8       | 4         | 25.28     | 24.62    | 24.21     |
|               |            | 8       | 7         | 25.26     | 24.66    | 24.18     |
|               |            | 15      | 0         | 25.28     | 24.61    | 24.27     |
|               | 16QAM      | 1       | 0         | 25.15     | 25.00    | 24.12     |
|               |            | 1       | 7         | 25.43     | 25.03    | 24.26     |
|               |            | 1       | 14        | 25.40     | 25.08    | 24.30     |
|               |            | 8       | 0         | 24.36     | 23.56    | 23.34     |
|               |            | 8       | 4         | 24.26     | 23.38    | 23.22     |
|               |            | 8       | 7         | 24.26     | 23.41    | 23.40     |
|               |            | 15      | 0         | 24.31     | 23.63    | 23.14     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH   | High CH   |
|---------------|------------|---------|-----------|-----------|----------|-----------|
|               |            |         |           | 131997CH  | 132322CH | 132647CH  |
|               |            |         |           | 1712.5MHz | 1745MHz  | 1777.5MHz |
| 66 / 5M       | QPSK       | 1       | 0         | 26.27     | 25.38    | 25.26     |
|               |            | 1       | 13        | 26.16     | 25.26    | 25.07     |
|               |            | 1       | 24        | 26.11     | 25.36    | 25.16     |
|               |            | 12      | 0         | 25.23     | 24.60    | 24.22     |
|               |            | 12      | 6         | 25.18     | 24.62    | 24.16     |
|               |            | 12      | 11        | 25.21     | 24.67    | 24.10     |
|               |            | 25      | 0         | 25.20     | 24.45    | 24.10     |
|               | 16QAM      | 1       | 0         | 24.71     | 24.53    | 23.70     |
|               |            | 1       | 13        | 24.69     | 24.53    | 23.67     |
|               |            | 1       | 24        | 24.60     | 24.08    | 23.74     |
|               |            | 12      | 0         | 24.23     | 23.65    | 23.20     |
|               |            | 12      | 6         | 24.32     | 23.53    | 23.20     |
|               |            | 12      | 11        | 24.25     | 23.45    | 23.15     |
|               |            | 25      | 0         | 24.27     | 23.53    | 23.12     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 132022CH | 132322CH | 132622CH |
|               |            |         |           | 1715MHz  | 1745MHz  | 1775MHz  |
| 66 / 10M      | QPSK       | 1       | 0         | 26.39    | 25.50    | 25.09    |
|               |            | 1       | 25        | 26.67    | 25.55    | 25.32    |
|               |            | 1       | 49        | 26.21    | 25.57    | 25.07    |
|               |            | 25      | 0         | 25.12    | 24.45    | 24.18    |
|               |            | 25      | 13        | 25.26    | 24.54    | 24.10    |
|               |            | 25      | 25        | 25.23    | 24.58    | 24.01    |
|               |            | 50      | 0         | 25.18    | 24.54    | 24.02    |
|               | 16QAM      | 1       | 0         | 25.37    | 24.87    | 24.22    |
|               |            | 1       | 25        | 25.70    | 24.95    | 24.17    |
|               |            | 1       | 49        | 25.55    | 24.38    | 24.04    |
|               |            | 25      | 0         | 24.14    | 23.48    | 23.41    |
|               |            | 25      | 13        | 24.27    | 23.66    | 23.29    |
|               |            | 25      | 25        | 24.14    | 23.66    | 23.27    |
|               |            | 50      | 0         | 23.99    | 23.65    | 23.12    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH   | High CH   |
|---------------|------------|---------|-----------|-----------|----------|-----------|
|               |            |         |           | 132047CH  | 132322CH | 132597CH  |
|               |            |         |           | 1717.5MHz | 1745MHz  | 1772.5MHz |
| 66 / 15M      | QPSK       | 1       | 0         | 26.53     | 25.34    | 25.22     |
|               |            | 1       | 38        | 26.16     | 25.41    | 25.07     |
|               |            | 1       | 74        | 25.98     | 25.66    | 24.99     |
|               |            | 36      | 0         | 25.16     | 24.46    | 24.27     |
|               |            | 36      | 18        | 25.16     | 24.59    | 24.19     |
|               |            | 36      | 39        | 25.13     | 24.53    | 24.04     |
|               |            | 75      | 0         | 25.04     | 24.53    | 24.16     |
|               | 16QAM      | 1       | 0         | 25.32     | 24.51    | 25.11     |
|               |            | 1       | 38        | 25.11     | 24.67    | 25.08     |
|               |            | 1       | 74        | 25.50     | 24.87    | 24.75     |
|               |            | 36      | 0         | 23.99     | 23.62    | 23.35     |
|               |            | 36      | 18        | 23.98     | 23.65    | 23.18     |
|               |            | 36      | 39        | 24.03     | 23.67    | 23.00     |
|               |            | 75      | 0         | 23.99     | 23.67    | 23.26     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 132072CH | 132322CH | 132572CH |
|               |            |         |           | 1720MHz  | 1745MHz  | 1770MHz  |
| 66 / 20M      | QPSK       | 1       | 0         | 25.90    | 25.51    | 25.21    |
|               |            | 1       | 50        | 25.87    | 25.61    | 25.05    |
|               |            | 1       | 99        | 25.58    | 25.67    | 24.95    |
|               |            | 50      | 0         | 25.19    | 24.53    | 24.21    |
|               |            | 50      | 25        | 25.09    | 24.51    | 24.14    |
|               |            | 50      | 50        | 25.01    | 24.49    | 24.08    |
|               |            | 100     | 0         | 25.01    | 24.46    | 24.26    |
|               | 16QAM      | 1       | 0         | 24.81    | 24.43    | 24.19    |
|               |            | 1       | 50        | 24.86    | 24.65    | 23.71    |
|               |            | 1       | 99        | 24.50    | 24.55    | 23.66    |
|               |            | 50      | 0         | 24.07    | 23.47    | 23.30    |
|               |            | 50      | 25        | 24.06    | 23.64    | 23.22    |
|               |            | 50      | 50        | 23.96    | 23.60    | 23.15    |
|               |            | 100     | 0         | 23.98    | 23.58    | 23.32    |

**ERP Power (dBm):**

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 23017CH  | 23095CH  | 23173CH  |
|               |            |         |           | 699.7MHz | 707.5MHz | 715.3MHz |
| 12 / 1.4M     | QPSK       | 1       | 0         | 25.95    | 25.45    | 25.95    |
|               |            | 1       | 2         | 26.10    | 25.65    | 26.14    |
|               |            | 1       | 5         | 26.17    | 25.60    | 26.15    |
|               |            | 3       | 0         | 25.88    | 25.49    | 26.00    |
|               |            | 3       | 1         | 25.94    | 25.60    | 26.05    |
|               |            | 3       | 2         | 26.01    | 25.51    | 26.13    |
|               |            | 6       | 0         | 24.98    | 24.55    | 25.33    |
|               | 16QAM      | 1       | 0         | 25.21    | 24.86    | 25.45    |
|               |            | 1       | 2         | 25.30    | 24.85    | 25.51    |
|               |            | 1       | 5         | 25.41    | 24.80    | 25.64    |
|               |            | 3       | 0         | 25.23    | 24.64    | 25.25    |
|               |            | 3       | 1         | 25.30    | 24.77    | 25.23    |
|               |            | 3       | 2         | 25.36    | 24.78    | 25.38    |
|               |            | 6       | 0         | 24.39    | 23.77    | 24.13    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 23025CH  | 23095CH  | 23165CH  |
|               |            |         |           | 700.5MHz | 707.5MHz | 714.5MHz |
| 12 / 3M       | QPSK       | 1       | 0         | 25.94    | 25.58    | 26.24    |
|               |            | 1       | 7         | 26.11    | 25.75    | 26.18    |
|               |            | 1       | 14        | 26.02    | 25.64    | 26.23    |
|               |            | 8       | 0         | 25.15    | 24.65    | 25.44    |
|               |            | 8       | 4         | 25.20    | 24.53    | 25.36    |
|               |            | 8       | 7         | 25.08    | 24.62    | 25.31    |
|               |            | 15      | 0         | 25.09    | 24.57    | 25.39    |
|               | 16QAM      | 1       | 0         | 24.90    | 25.04    | 25.29    |
|               |            | 1       | 7         | 25.16    | 25.13    | 25.33    |
|               |            | 1       | 14        | 25.11    | 25.12    | 25.44    |
|               |            | 8       | 0         | 24.36    | 23.99    | 24.56    |
|               |            | 8       | 4         | 24.40    | 24.06    | 24.15    |
|               |            | 8       | 7         | 24.37    | 24.00    | 24.05    |
|               |            | 15      | 0         | 24.24    | 24.07    | 24.24    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 23035CH  | 23095CH  | 23155CH  |
|               |            |         |           | 701.5MHz | 707.5MHz | 713.5MHz |
| 12 / 5M       | QPSK       | 1       | 0         | 26.04    | 25.53    | 26.17    |
|               |            | 1       | 13        | 26.43    | 25.74    | 26.43    |
|               |            | 1       | 24        | 25.95    | 25.65    | 26.06    |
|               |            | 12      | 0         | 25.26    | 24.57    | 25.39    |
|               |            | 12      | 6         | 25.24    | 24.59    | 25.46    |
|               |            | 12      | 11        | 25.13    | 24.59    | 25.32    |
|               |            | 25      | 0         | 25.22    | 24.58    | 25.32    |
|               | 16QAM      | 1       | 0         | 24.99    | 25.05    | 25.19    |
|               |            | 1       | 13        | 25.42    | 25.28    | 25.57    |
|               |            | 1       | 24        | 25.08    | 25.18    | 25.22    |
|               |            | 12      | 0         | 24.41    | 23.90    | 24.21    |
|               |            | 12      | 6         | 24.37    | 23.94    | 24.29    |
|               |            | 12      | 11        | 24.30    | 23.93    | 24.27    |
|               |            | 25      | 0         | 24.40    | 23.95    | 24.20    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH   | High CH |
|---------------|------------|---------|-----------|---------|----------|---------|
|               |            |         |           | 23060CH | 23095CH  | 23130CH |
|               |            |         |           | 704MHz  | 707.5MHz | 711MHz  |
| 12 / 10M      | QPSK       | 1       | 0         | 25.24   | 25.35    | 24.82   |
|               |            | 1       | 25        | 25.93   | 25.77    | 26.34   |
|               |            | 1       | 49        | 24.91   | 25.38    | 25.33   |
|               |            | 25      | 0         | 24.94   | 24.54    | 24.61   |
|               |            | 25      | 13        | 24.96   | 24.79    | 25.26   |
|               |            | 25      | 25        | 24.58   | 24.78    | 25.11   |
|               |            | 50      | 0         | 24.59   | 24.56    | 24.98   |
|               | 16QAM      | 1       | 0         | 24.79   | 25.08    | 24.46   |
|               |            | 1       | 25        | 24.97   | 25.13    | 25.48   |
|               |            | 1       | 49        | 24.48   | 24.80    | 24.43   |
|               |            | 25      | 0         | 24.13   | 24.10    | 24.10   |
|               |            | 25      | 13        | 23.96   | 24.07    | 24.23   |
|               |            | 25      | 25        | 23.82   | 24.02    | 24.18   |
|               |            | 50      | 0         | 24.08   | 23.97    | 24.07   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH  | High CH  |
|---------------|------------|---------|-----------|----------|---------|----------|
|               |            |         |           | 23205CH  | 23230CH | 23255CH  |
|               |            |         |           | 779.5MHz | 782MHz  | 784.5MHz |
| 13 / 5M       | QPSK       | 1       | 0         | 26.33    | 26.82   | 26.37    |
|               |            | 1       | 13        | 26.42    | 26.85   | 26.54    |
|               |            | 1       | 24        | 26.35    | 26.87   | 26.34    |
|               |            | 12      | 0         | 25.60    | 25.63   | 25.65    |
|               |            | 12      | 6         | 25.60    | 25.56   | 25.84    |
|               |            | 12      | 11        | 25.64    | 25.54   | 25.78    |
|               |            | 25      | 0         | 25.54    | 25.56   | 25.59    |
|               | 16QAM      | 1       | 0         | 25.36    | 24.99   | 25.14    |
|               |            | 1       | 13        | 25.39    | 24.97   | 25.32    |
|               |            | 1       | 24        | 25.37    | 25.18   | 25.14    |
|               |            | 12      | 0         | 24.50    | 24.73   | 24.65    |
|               |            | 12      | 6         | 24.73    | 24.65   | 24.66    |
|               |            | 12      | 11        | 24.65    | 24.63   | 24.67    |
|               |            | 25      | 0         | 24.62    | 24.68   | 24.87    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Mid CH  |
|---------------|------------|---------|-----------|---------|
|               |            |         |           | 23230CH |
|               |            |         |           | 782MHz  |
| 13 / 10M      | QPSK       | 1       | 0         | 26.61   |
|               |            | 1       | 25        | 26.52   |
|               |            | 1       | 49        | 26.82   |
|               |            | 25      | 0         | 25.66   |
|               |            | 25      | 13        | 25.55   |
|               |            | 25      | 25        | 25.43   |
|               |            | 50      | 0         | 25.63   |
|               | 16QAM      | 1       | 0         | 25.37   |
|               |            | 1       | 25        | 25.59   |
|               |            | 1       | 49        | 25.45   |
|               |            | 25      | 0         | 24.70   |
|               |            | 25      | 13        | 24.61   |
|               |            | 25      | 25        | 24.49   |
|               |            | 50      | 0         | 24.69   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH  | High CH  |
|---------------|------------|---------|-----------|----------|---------|----------|
|               |            |         |           | 23755CH  | 23790CH | 23825CH  |
|               |            |         |           | 706.5MHz | 710MHz  | 713.5MHz |
| 17 / 5M       | QPSK       | 1       | 0         | 26.49    | 26.08   | 26.30    |
|               |            | 1       | 13        | 26.39    | 26.02   | 26.51    |
|               |            | 1       | 24        | 26.28    | 26.10   | 26.42    |
|               |            | 12      | 0         | 25.64    | 25.44   | 25.52    |
|               |            | 12      | 6         | 25.63    | 25.46   | 25.57    |
|               |            | 12      | 11        | 25.50    | 25.48   | 25.55    |
|               |            | 25      | 0         | 25.54    | 25.49   | 25.50    |
|               | 16QAM      | 1       | 0         | 25.45    | 25.15   | 25.02    |
|               |            | 1       | 13        | 25.01    | 24.96   | 25.30    |
|               |            | 1       | 24        | 25.02    | 25.02   | 25.40    |
|               |            | 12      | 0         | 24.65    | 24.57   | 24.32    |
|               |            | 12      | 6         | 24.53    | 24.21   | 24.36    |
|               |            | 12      | 11        | 24.52    | 24.17   | 24.53    |
|               |            | 25      | 0         | 24.62    | 24.47   | 24.35    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH  | High CH |
|---------------|------------|---------|-----------|---------|---------|---------|
|               |            |         |           | 23780CH | 23790CH | 23800CH |
|               |            |         |           | 709MHz  | 710MHz  | 711MHz  |
| 17 / 5M       | QPSK       | 1       | 0         | 26.62   | 26.57   | 26.61   |
|               |            | 1       | 13        | 26.59   | 26.15   | 26.59   |
|               |            | 1       | 24        | 26.51   | 26.30   | 26.30   |
|               |            | 12      | 0         | 25.60   | 25.59   | 25.55   |
|               |            | 12      | 6         | 25.48   | 25.47   | 25.40   |
|               |            | 12      | 11        | 25.42   | 25.36   | 25.55   |
|               |            | 25      | 0         | 25.43   | 25.43   | 25.51   |
|               | 16QAM      | 1       | 0         | 25.70   | 25.60   | 25.50   |
|               |            | 1       | 13        | 25.43   | 25.59   | 24.94   |
|               |            | 1       | 24        | 25.32   | 25.40   | 25.36   |
|               |            | 12      | 0         | 24.76   | 24.42   | 24.70   |
|               |            | 12      | 6         | 24.55   | 24.37   | 24.51   |
|               |            | 12      | 11        | 24.49   | 24.34   | 24.60   |
|               |            | 25      | 0         | 24.47   | 24.49   | 24.40   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH  | High CH   |
|---------------|------------|---------|-----------|-----------|---------|-----------|
|               |            |         |           | 39675CH   | 40620CH | 41565CH   |
|               |            |         |           | 2498.5MHz | 2593MHz | 2687.5MHz |
| 41 / 5M       | QPSK       | 1       | 0         | 26.52     | 26.22   | 26.70     |
|               |            | 1       | 13        | 26.73     | 26.35   | 26.79     |
|               |            | 1       | 24        | 26.70     | 26.43   | 26.46     |
|               |            | 12      | 0         | 25.62     | 25.70   | 25.84     |
|               |            | 12      | 6         | 25.72     | 25.70   | 25.92     |
|               |            | 12      | 11        | 25.76     | 25.58   | 25.88     |
|               |            | 25      | 0         | 25.66     | 25.63   | 25.87     |
|               | 16QAM      | 1       | 0         | 25.47     | 25.02   | 25.61     |
|               |            | 1       | 13        | 25.55     | 25.14   | 25.54     |
|               |            | 1       | 24        | 25.43     | 24.96   | 25.57     |
|               |            | 12      | 0         | 24.76     | 24.50   | 24.91     |
|               |            | 12      | 6         | 24.95     | 24.63   | 24.91     |
|               |            | 12      | 11        | 24.89     | 24.56   | 24.94     |
|               |            | 25      | 0         | 24.63     | 24.68   | 24.74     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH  | High CH |
|---------------|------------|---------|-----------|---------|---------|---------|
|               |            |         |           | 39700CH | 40620CH | 41540CH |
|               |            |         |           | 2501MHz | 2593MHz | 2685MHz |
| 41 / 10M      | QPSK       | 1       | 0         | 26.65   | 26.40   | 26.75   |
|               |            | 1       | 25        | 26.78   | 26.55   | 26.84   |
|               |            | 1       | 49        | 26.86   | 26.39   | 26.66   |
|               |            | 25      | 0         | 25.76   | 25.53   | 25.76   |
|               |            | 25      | 13        | 25.82   | 25.66   | 25.95   |
|               |            | 25      | 25        | 25.74   | 25.55   | 25.88   |
|               |            | 50      | 0         | 25.72   | 25.55   | 25.81   |
|               | 16QAM      | 1       | 0         | 25.86   | 24.95   | 26.56   |
|               |            | 1       | 25        | 26.34   | 25.28   | 26.79   |
|               |            | 1       | 49        | 26.28   | 24.96   | 26.30   |
|               |            | 25      | 0         | 24.84   | 24.60   | 24.75   |
|               |            | 25      | 13        | 24.99   | 24.73   | 24.84   |
|               |            | 25      | 25        | 24.95   | 24.54   | 24.79   |
|               |            | 50      | 0         | 24.84   | 24.65   | 24.83   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH    | Mid CH  | High CH   |
|---------------|------------|---------|-----------|-----------|---------|-----------|
|               |            |         |           | 39725CH   | 40620CH | 41515CH   |
|               |            |         |           | 2503.5MHz | 2593MHz | 2682.5MHz |
| 41 / 15M      | QPSK       | 1       | 0         | 26.51     | 26.44   | 26.67     |
|               |            | 1       | 38        | 26.71     | 26.39   | 26.58     |
|               |            | 1       | 74        | 26.71     | 26.33   | 26.69     |
|               |            | 36      | 0         | 25.64     | 25.48   | 25.76     |
|               |            | 36      | 18        | 25.66     | 25.71   | 25.90     |
|               |            | 36      | 39        | 25.92     | 25.42   | 25.63     |
|               |            | 75      | 0         | 25.93     | 25.43   | 25.71     |
|               | 16QAM      | 1       | 0         | 25.54     | 25.03   | 25.86     |
|               |            | 1       | 38        | 26.13     | 25.09   | 25.95     |
|               |            | 1       | 74        | 25.91     | 24.93   | 25.89     |
|               |            | 36      | 0         | 24.92     | 24.64   | 24.78     |
|               |            | 36      | 18        | 24.67     | 24.79   | 24.67     |
|               |            | 36      | 39        | 24.66     | 24.60   | 24.67     |
|               |            | 75      | 0         | 24.92     | 24.60   | 24.72     |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH  | Mid CH  | High CH |
|---------------|------------|---------|-----------|---------|---------|---------|
|               |            |         |           | 39750CH | 40620CH | 41490CH |
|               |            |         |           | 2506MHz | 2593MHz | 2680MHz |
| 41 / 20M      | QPSK       | 1       | 0         | 26.46   | 26.54   | 26.57   |
|               |            | 1       | 50        | 26.95   | 26.78   | 27.00   |
|               |            | 1       | 99        | 26.63   | 26.52   | 26.70   |
|               |            | 50      | 0         | 25.73   | 25.57   | 25.74   |
|               |            | 50      | 25        | 25.89   | 25.59   | 25.81   |
|               |            | 50      | 50        | 25.82   | 25.38   | 25.59   |
|               |            | 100     | 0         | 25.90   | 25.43   | 25.82   |
|               | 16QAM      | 1       | 0         | 25.30   | 25.14   | 25.92   |
|               |            | 1       | 50        | 25.88   | 25.08   | 26.28   |
|               |            | 1       | 99        | 25.50   | 24.70   | 26.11   |
|               |            | 50      | 0         | 24.83   | 24.57   | 24.78   |
|               |            | 50      | 25        | 25.05   | 24.67   | 24.87   |
|               |            | 50      | 50        | 24.92   | 24.53   | 24.72   |
|               |            | 100     | 0         | 24.92   | 24.54   | 24.74   |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 133147CH | 133297CH | 133447CH |
|               |            |         |           | 665.5MHz | 680.5MHz | 695.5MHz |
| 71 / 5M       | QPSK       | 1       | 0         | 23.12    | 22.63    | 22.83    |
|               |            | 1       | 13        | 22.82    | 22.79    | 22.93    |
|               |            | 1       | 24        | 22.52    | 22.67    | 22.82    |
|               |            | 12      | 0         | 22.00    | 21.88    | 21.85    |
|               |            | 12      | 6         | 22.01    | 21.95    | 21.86    |
|               |            | 12      | 11        | 22.06    | 21.94    | 21.91    |
|               |            | 25      | 0         | 21.94    | 21.82    | 21.81    |
|               | 16QAM      | 1       | 0         | 21.72    | 21.84    | 21.46    |
|               |            | 1       | 13        | 21.35    | 21.48    | 21.24    |
|               |            | 1       | 24        | 21.46    | 21.32    | 21.60    |
|               |            | 12      | 0         | 20.78    | 20.80    | 20.74    |
|               |            | 12      | 6         | 21.06    | 20.86    | 20.84    |
|               |            | 12      | 11        | 21.04    | 20.87    | 20.89    |
|               |            | 25      | 0         | 21.03    | 20.93    | 20.93    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 133172CH | 133297CH | 133422CH |
|               |            |         |           | 668MHz   | 680.5MHz | 693MHz   |
| 71 / 10M      | QPSK       | 1       | 0         | 23.11    | 22.85    | 22.69    |
|               |            | 1       | 25        | 22.69    | 23.32    | 23.07    |
|               |            | 1       | 49        | 23.03    | 23.00    | 22.66    |
|               |            | 25      | 0         | 22.01    | 21.95    | 21.91    |
|               |            | 25      | 13        | 21.89    | 21.99    | 21.86    |
|               |            | 25      | 25        | 21.81    | 21.97    | 21.87    |
|               |            | 50      | 0         | 21.82    | 21.92    | 21.86    |
|               | 16QAM      | 1       | 0         | 21.78    | 21.76    | 21.55    |
|               |            | 1       | 25        | 22.59    | 22.18    | 21.80    |
|               |            | 1       | 49        | 21.76    | 22.04    | 21.28    |
|               |            | 25      | 0         | 21.14    | 20.79    | 20.79    |
|               |            | 25      | 13        | 21.04    | 20.85    | 20.83    |
|               |            | 25      | 25        | 21.05    | 21.02    | 20.84    |
|               |            | 50      | 0         | 20.84    | 20.75    | 20.84    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 133197CH | 133297CH | 133397CH |
|               |            |         |           | 670.5MHz | 680.5MHz | 690.5MHz |
| 71 / 15M      | QPSK       | 1       | 0         | 23.00    | 23.01    | 22.58    |
|               |            | 1       | 38        | 23.05    | 23.24    | 22.72    |
|               |            | 1       | 74        | 22.79    | 23.10    | 22.67    |
|               |            | 36      | 0         | 21.89    | 21.96    | 22.00    |
|               |            | 36      | 18        | 21.97    | 21.95    | 21.94    |
|               |            | 36      | 39        | 22.07    | 21.96    | 21.96    |
|               |            | 75      | 0         | 21.99    | 21.83    | 21.89    |
|               | 16QAM      | 1       | 0         | 21.91    | 21.93    | 21.86    |
|               |            | 1       | 38        | 22.63    | 22.35    | 21.96    |
|               |            | 1       | 74        | 22.38    | 22.04    | 22.17    |
|               |            | 36      | 0         | 20.80    | 20.84    | 20.92    |
|               |            | 36      | 18        | 20.82    | 20.83    | 20.86    |
|               |            | 36      | 39        | 20.80    | 20.83    | 20.87    |
|               |            | 75      | 0         | 20.76    | 20.82    | 20.81    |

| LTE Band / BW | Modulation | RB Size | RB Offset | Low CH   | Mid CH   | High CH  |
|---------------|------------|---------|-----------|----------|----------|----------|
|               |            |         |           | 133222CH | 133322CH | 133372CH |
|               |            |         |           | 673MHz   | 683MHz   | 688MHz   |
| 71 / 20M      | QPSK       | 1       | 0         | 22.61    | 22.33    | 22.87    |
|               |            | 1       | 50        | 23.29    | 22.87    | 23.15    |
|               |            | 1       | 99        | 22.52    | 22.43    | 22.86    |
|               |            | 50      | 0         | 21.79    | 21.87    | 21.95    |
|               |            | 50      | 25        | 21.99    | 22.02    | 21.96    |
|               |            | 50      | 50        | 21.91    | 21.94    | 21.82    |
|               |            | 100     | 0         | 21.92    | 21.87    | 21.87    |
|               | 16QAM      | 1       | 0         | 21.92    | 21.12    | 21.21    |
|               |            | 1       | 50        | 22.49    | 22.20    | 21.91    |
|               |            | 1       | 99        | 21.78    | 21.23    | 21.31    |
|               |            | 50      | 0         | 20.83    | 20.88    | 20.91    |
|               |            | 50      | 25        | 20.94    | 21.01    | 20.96    |
|               |            | 50      | 50        | 20.76    | 20.77    | 20.64    |
|               |            | 100     | 0         | 20.81    | 20.85    | 20.75    |

## **APPENDIX B - OCCUPIED BANDWIDTH**

| WCDMA Band IV_WCDMA |                 |                              |         |                 |                      |
|---------------------|-----------------|------------------------------|---------|-----------------|----------------------|
| QPSK                |                 |                              |         |                 |                      |
| Channel             | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
| 1312                | 1712.4          | 4.1351                       | 1312    | 1712.4          | 4.705                |
| 1413                | 1732.6          | 4.1312                       | 1413    | 1732.6          | 4.711                |
| 1513                | 1752.6          | 4.1426                       | 1513    | 1752.6          | 4.702                |



| LTE Band 4_1.4M |                 |                              |         |                 |                              |
|-----------------|-----------------|------------------------------|---------|-----------------|------------------------------|
| QPSK            |                 |                              | 16QAM   |                 |                              |
| Channel         | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) |
| 19957           | 1710.7          | 1.0880                       | 19957   | 1710.7          | 1.0890                       |
| 20175           | 1732.5          | 1.0915                       | 20175   | 1732.5          | 1.0928                       |
| 20393           | 1754.3          | 1.1033                       | 20393   | 1754.3          | 1.0900                       |
| Channel         | Frequency (MHz) | 26dB Bandwidth (MHz)         | Channel | Frequency (MHz) | 26dB Bandwidth (MHz)         |
| 19957           | 1710.7          | 1.3140                       | 19957   | 1710.7          | 1.2680                       |
| 20175           | 1732.5          | 1.3210                       | 20175   | 1732.5          | 1.2950                       |
| 20393           | 1754.3          | 1.3160                       | 20393   | 1754.3          | 1.3000                       |