

## Test Report

Applicant : ASUSTeK COMPUTER INC.  
Applicant Address : 1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan  
Product Type : LTE module  
Trade Name : FIBOCOM  
Model Number : L850-GL  
Applicable Standard : 47 CFR Part §2.1093  
Received Date : Jun. 16, 2021  
Test Period : Jun. 30 ~ Jul. 07, 2021  
Issued Date : Aug. 17, 2021

Issued by

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Taiwan Accreditation Foundation accreditation number: 1330  
Test Firm MRA designation number: TW0010

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### **Revision History**

| Rev. | Issue Date    | Revisions                                                                                                                                                                                                                                                                                                                | Revised By |
|------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 00   | Aug. 02, 2021 | Initial Issue                                                                                                                                                                                                                                                                                                            | Nicole Chu |
| 01   | Aug. 12, 2021 | Revised 4 chapter (P.09)<br>Revised 7.1.1 chapter (P.19)<br>Revised 11.2.5.3 chapter (P.38~ P.39)<br>Revised 11.4 chapter (P.92~P.93)<br>Revised 11.5 chapter (P.97)<br>Revised 11.6 chapter (P.98)<br>Revised 11.7.1 chapter (P.103~ P.105)<br>Revised 11.9 chapter (P.111)<br>Revised Appendix B chapter (P.126~P.130) | Nicole Chu |
| 02   | Aug. 17, 2021 | Revised 4 chapter (P.09)<br>Revised 11.6 chapter (P.98)<br>Revised 11.7.1 chapter (P.105)<br>Revised 11.8.2 chapter (P.107)<br>Revised Appendix B chapter (P.120)                                                                                                                                                        | Nicole Chu |
|      |               |                                                                                                                                                                                                                                                                                                                          |            |

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## 1. General Information

### 1.1 Reference Testing Standards

| Standard            | Description                                                                                                                                                                                                                                                                     | Version |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| IEC/IEEE 62209-1528 | Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz) | 2020    |
| IEEE 1528           | Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques                                                                                                                              | 2013    |
| IEEE C95.1          | American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 KHz to 100 GHz, New York                                                                                                                                 | 1992    |
| 47 CFR Part §2.1093 | Radiofrequency radiation exposure evaluation: portable devices                                                                                                                                                                                                                  | -       |
| KDB 248227 D01      | SAR guidance for IEEE 802.11 (Wi-Fi) transmitters                                                                                                                                                                                                                               | v02r02  |
| KDB 447498 D01      | RF exposure procedures and equipment authorization policies for mobile and portable devices                                                                                                                                                                                     | v06     |
| KDB 616217 D04      | SAR evaluation considerations for laptop, notebook and tablet computers                                                                                                                                                                                                         | v01r02  |
| KDB 865664 D01      | SAR measurement requirement for 100 MHz to 6 GHz                                                                                                                                                                                                                                | v01r04  |
| KDB 865664 D02      | RF exposure compliance reporting and documentation considerations                                                                                                                                                                                                               | v01r02  |
| KDB 941225 D05      | SAR evaluation considerations for LTE devices                                                                                                                                                                                                                                   | v02r05  |
| KDB 941225 D05A     | REL. 10 LTE SAR test guidance and KDB inquiries                                                                                                                                                                                                                                 | v01r02  |
| KDB 941225 D06      | SAR evaluation procedures for portable devices with wireless router capabilities                                                                                                                                                                                                | v02r01  |

## 2. Test Site Environment

|                  |       |
|------------------|-------|
| Temperature (°C) | 21-23 |
|------------------|-------|

### 3. Description of Device Under Test (DUT)

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicant                  | ASUSTeK COMPUTER INC.<br>1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan                                                                                                                                                                                                                                                                                                                                                                                       |
| Manufacture                | ASUSTeK COMPUTER INC.<br>1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan                                                                                                                                                                                                                                                                                                                                                                                       |
| Product Type               | LTE module                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Trade Name                 | FIBOCOM                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Model Number               | L850-GL                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| IMEI No.                   | 863212030522525                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| FCC ID                     | MSQL850GL                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Class II Permissive Change | <p>(1) This is to request a Class II permissive change for FCC ID: MSQL850GL , originally granted on 2020/12/16</p> <p>Modification:</p> <p>-Change #1: Additional chassis added, ASUSTeK, model number: B3402FEA, B3402FE, B3408FEA, B3408FE</p> <p>-Change #2: This filing also addresses co-location with WLAN, BT module FCC ID: MSQ9560NG.</p> <p>-Change #3: Add two antennas which have the same antenna type as original grant, and each antenna gain is lower.</p> |
| Host Information           | <p>Product Type: Notebook PC</p> <p>Trade Name: ASUS</p> <p>Model Name: B3402FEA, B3402FE, B3408FEA, B3408FE</p> <p>All models are electrically identical, different model names are for marketing purpose.</p>                                                                                                                                                                                                                                                             |

| Frequency Range  | Operate Bands                                | Operate Frequency (GHz) |
|------------------|----------------------------------------------|-------------------------|
|                  | WCDMA Band II                                | 1852.4 - 1907.6         |
|                  | WCDMA Band IV                                | 1712.4 - 1752.6         |
|                  | WCDMA Band V                                 | 826.4 - 846.6           |
|                  | LTE Band 2 (BW 1.4, 3, 5, 10, 15, 20 MHz)    | 1850.7 - 1909.3         |
|                  | LTE Band 4 (BW 1.4, 3, 5, 10, 15, 20 MHz)    | 1710.7 - 1754.3         |
|                  | LTE Band 5 (BW 1.4, 3, 5, 10 MHz)            | 824.7 - 848.3           |
|                  | LTE Band 7 (BW 5, 10, 15, 20 MHz)            | 2502.5 - 2567.5         |
|                  | LTE Band 12 (BW 1.4, 3, 5, 10 MHz)           | 699.7 - 715.3           |
|                  | LTE Band 13 (BW 5, 10 MHz)                   | 779.5 - 784.5           |
|                  | LTE Band 17 (BW 5, 10 MHz)                   | 706.5 - 713.5           |
|                  | LTE Band 26 (BW 1.4, 3, 5, 10, 15 MHz)       | 814.7 - 848.3           |
|                  | LTE Band 30 (BW 5, 10 MHz)                   | 2307.5 - 2312.5         |
|                  | LTE Band 38 (BW 5, 10, 15, 20 MHz)           | 2572.5 - 2617.5         |
|                  | LTE Band 41 (BW 5, 10, 15, 20 MHz)           | 2498.5 - 2687.5         |
|                  | LTE Band 66 (BW 1.4, 3, 5, 10, 15, 20 MHz)   | 1710.7 - 1779.3         |
| Modulations      | WCDMA: RMC 12.2Kbps/HSPA+<br>LTE: QPSK/16QAM |                         |
| Device Category  | Portable Device                              |                         |
| Application Type | Certification                                |                         |

Note:

1. The above information of DUT was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

**Antenna list :**

| Antenna Source | ANT     | Manufacturer | Part No. (Vendor) | Type         | Max. Gain (dBi) |      |       |
|----------------|---------|--------------|-------------------|--------------|-----------------|------|-------|
|                |         |              |                   |              | Band            | NB   | PAD   |
| 1              | Chain A | INPAQ        | WA-F-S6G2-02-008  | PIFA Antenna | WCDMA Band II   | 3.02 | 1.28  |
|                |         |              |                   |              | WCDMA Band IV   | --   | --    |
|                |         |              |                   |              | WCDMA Band V    | 0.82 | -3.73 |
|                |         |              |                   |              | LTE Band 2      | 3.02 | 1.28  |
|                |         |              |                   |              | LTE Band 4      | --   | --    |
|                |         |              |                   |              | LTE Band 5      | 0.82 | -3.73 |
|                |         |              |                   |              | LTE Band 7      | 1.98 | 0.99  |
|                |         |              |                   |              | LTE Band 12     | 1.5  | -2.05 |
|                |         |              |                   |              | LTE Band 13     | 1.25 | -1.04 |
|                |         |              |                   |              | LTE Band 17     | 1.5  | -2.05 |
|                |         |              |                   |              | LTE Band 26     | 1.33 | -3.73 |
|                |         |              |                   |              | LTE Band 30     | 2.38 | 0.04  |
|                |         |              |                   |              | LTE Band 38     | 1.98 | 2.43  |
|                |         |              |                   |              | LTE Band 41     | 1.98 | 2.45  |
|                |         |              |                   |              | LTE Band 66     | --   | --    |
|                | Chain B | INPAQ        | WA-F-S6G2-02-007  | PIFA Antenna | WCDMA Band II   | 0.34 | 0.07  |
|                |         |              |                   |              | WCDMA Band IV   | 1.16 | 0.13  |
|                |         |              |                   |              | WCDMA Band V    | 0.66 | -2.33 |
|                |         |              |                   |              | LTE Band 2      | 0.34 | 0.07  |
|                |         |              |                   |              | LTE Band 4      | 1.16 | 0.13  |
|                |         |              |                   |              | LTE Band 5      | 0.66 | -2.33 |
|                |         |              |                   |              | LTE Band 7      | 2.42 | 2.93  |
|                |         |              |                   |              | LTE Band 12     | 0.7  | -3.33 |
|                |         |              |                   |              | LTE Band 13     | 2.07 | -3.9  |
|                |         |              |                   |              | LTE Band 17     | 0.7  | -3.34 |
|                |         |              |                   |              | LTE Band 26     | 0.66 | -2.33 |
|                |         |              |                   |              | LTE Band 30     | 2.36 | 1.09  |
|                |         |              |                   |              | LTE Band 38     | 2.97 | 2.93  |
|                |         |              |                   |              | LTE Band 41     | 2.97 | 2.93  |
|                |         |              |                   |              | LTE Band 66     | 1.16 | 0.13  |

| Antenna Source | ANT     | Manufacturer | Part No. (Vendor) | Type         | Max. Gain (dBi) |      |       |
|----------------|---------|--------------|-------------------|--------------|-----------------|------|-------|
|                |         |              |                   |              | Band            | NB   | PAD   |
| 2              | Chain A | ZTX          | 2.00005046        | PIFA Antenna | WCDMA Band II   | 2.6  | 0.98  |
|                |         |              |                   |              | WCDMA Band IV   | --   | --    |
|                |         |              |                   |              | WCDMA Band V    | 0.48 | -4.02 |
|                |         |              |                   |              | LTE Band 2      | 2.6  | 0.98  |
|                |         |              |                   |              | LTE Band 4      | --   | --    |
|                |         |              |                   |              | LTE Band 5      | 0.48 | -4.02 |
|                |         |              |                   |              | LTE Band 7      | 1.59 | 0.7   |
|                |         |              |                   |              | LTE Band 12     | 1.14 | -2.5  |
|                |         |              |                   |              | LTE Band 13     | 0.91 | -1.38 |
|                |         |              |                   |              | LTE Band 17     | 1.14 | -2.5  |
|                |         |              |                   |              | LTE Band 26     | 1.06 | -4.02 |
|                |         |              |                   |              | LTE Band 30     | 1.71 | -0.4  |
|                |         |              |                   |              | LTE Band 38     | 1.51 | 2.11  |
|                |         |              |                   |              | LTE Band 41     | 1.59 | 2.11  |
|                |         |              |                   |              | LTE Band 66     | --   | --    |
|                | Chain B | ZTX          | 2.00005045        | PIFA Antenna | WCDMA Band II   | 0.12 | -0.25 |
|                |         |              |                   |              | WCDMA Band IV   | 0.66 | -0.21 |
|                |         |              |                   |              | WCDMA Band V    | 0.23 | -2.59 |
|                |         |              |                   |              | LTE Band 2      | 0.12 | -0.25 |
|                |         |              |                   |              | LTE Band 4      | 0.66 | -0.21 |
|                |         |              |                   |              | LTE Band 5      | 0.23 | -2.59 |
|                |         |              |                   |              | LTE Band 7      | 2.02 | 2.69  |
|                |         |              |                   |              | LTE Band 12     | 0.32 | -3.6  |
|                |         |              |                   |              | LTE Band 13     | 1.75 | -4.23 |
|                |         |              |                   |              | LTE Band 17     | 0.32 | -3.6  |
|                |         |              |                   |              | LTE Band 26     | 0.23 | -2.59 |
|                |         |              |                   |              | LTE Band 30     | 1.95 | 0.64  |
|                |         |              |                   |              | LTE Band 38     | 2.64 | 2.91  |
|                |         |              |                   |              | LTE Band 41     | 2.93 | 2.91  |
|                |         |              |                   |              | LTE Band 66     | 0.66 | -0.21 |

Note :

1. Antenna Source 1 (INPAQ) gain is higher. Hence, it is regarded as the initial configuration, and then tested and recorded in this report.
2. Antenna Source 1 (INPAQ) and Antenna Source 2 (ZTX) are the same type of antenna, only different in manufacturer.
3. The Chain A is connected to AUX port / Chain B is connected to Main port of module.

#### 4. Summary of Maximum Value

| Equipment Class | Mode                | Highest Reported 1g SAR (W/kg)           |                                       |                                          |                                       |
|-----------------|---------------------|------------------------------------------|---------------------------------------|------------------------------------------|---------------------------------------|
|                 |                     | Tablet/SKU1                              |                                       | Notebook/SKU2                            |                                       |
|                 |                     | Body standalone SAR <sub>1g</sub> (W/kg) | Highest Simultaneous Transmission SAR | Body standalone SAR <sub>1g</sub> (W/kg) | Highest Simultaneous Transmission SAR |
| Licensed        | WCDMA Band II       | 1.00                                     | 1.59                                  | 1.00                                     | 1.19                                  |
|                 | WCDMA Band IV       | 1.08                                     |                                       | 1.02                                     |                                       |
|                 | WCDMA Band V        | 0.57                                     |                                       | 0.78                                     |                                       |
|                 | LTE Band 2          | 0.92                                     |                                       | 1.13                                     |                                       |
|                 | LTE Band 7          | 1.02                                     |                                       | 0.66                                     |                                       |
|                 | LTE Band 12/17      | 1.13                                     |                                       | 1.15                                     |                                       |
|                 | LTE Band 13         | 0.86                                     |                                       | 0.81                                     |                                       |
|                 | LTE Band 26/5       | 1.00                                     |                                       | 1.15                                     |                                       |
|                 | LTE Band 30         | 1.04                                     |                                       | 0.93                                     |                                       |
|                 | LTE Band 41/38      | 1.14                                     |                                       | 0.80                                     |                                       |
|                 | LTE Band 66/4       | 1.06                                     |                                       | 1.11                                     |                                       |
| DTS             | WLAN2.4GHz Ant Main | 0.42                                     | 1.59                                  | 0.13                                     | 1.17                                  |
|                 | WLAN2.4GHz Ant Aux  | 0.36                                     |                                       | 0.08                                     |                                       |
| U-NII           | WLAN5GHz Ant Main   | 0.58                                     | 1.56                                  | 0.17                                     | 1.19                                  |
|                 | WLAN5GHz Ant Aux    | 0.63                                     |                                       | 0.15                                     |                                       |
| DSS             | Bluetooth Ant Aux   | 0.09                                     | 1.57                                  | 0.05                                     | 1.19                                  |

Note:

- The SAR limit (Head & Body: SAR<sub>1g</sub> 1.6 W/kg) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.
- This device has two kinds of SKU, SKU 1 is 360 convertible laptop computer, SKU 2 is laptop only. All circuit designs, circuit board and other related designs are electrically identical.
- According to October 2014 TCB workshop SAR guidance for overlapping bands that support roaming using multiple frequency band indicator. This device supports LTE B5/26, B12/17, LTE B4/66 and B38/41 Since the supported frequency span falls completely within the supported frequency span, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was assessed B12/26/38/66.
- WLAN of the SAR value reference to the FCC ID MSQ9560NG of the report no. 2107FS15. The Devices evaluated Spot Check, please see as below : 11.10 Spot Check.

## 5. Introduction

### 5.1 SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative (rate) of the incremental energy (dw) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density ( $\rho$ ). The equation description is as below:

$$\text{SAR} = \frac{d}{dt} \left( \frac{dw}{dm} \right) = \frac{d}{dt} \left( \frac{dw}{\rho dv} \right)$$

SAR measurement can be related to the electrical field in the tissue by

$$\text{SAR} = \frac{\sigma |E|^2}{\rho}$$

Where :

$\sigma$  = conductivity of the tissue (S/m)

$\rho$  = mass density of the tissue (kg/m<sup>3</sup>)

$E$  = RMS electric field strength (V/m)

SAR is expressed in units of Watts per kilogram (W/kg).

### 5.2 RF Exposure Limits

**Table 1 Safety Limits for Controlled / Uncontrolled Environment Exposure**

| SAR Exposure Limit                                               |                                                                      |                                                              |
|------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------|
|                                                                  | General Population /<br>Uncontrolled Exposure <sup>1</sup><br>(W/kg) | Occupational /<br>Controlled Exposure <sup>2</sup><br>(W/kg) |
| Spatial Peak SAR <sup>3</sup><br>(head or Body)                  | 1.60                                                                 | 8.00                                                         |
| Spatial Peak SAR <sup>4</sup><br>(Whole Body)                    | 0.08                                                                 | 0.40                                                         |
| Spatial Peak SAR <sup>5</sup><br>(Hands / Feet / Ankle / Wrist ) | 4.00                                                                 | 20.00                                                        |

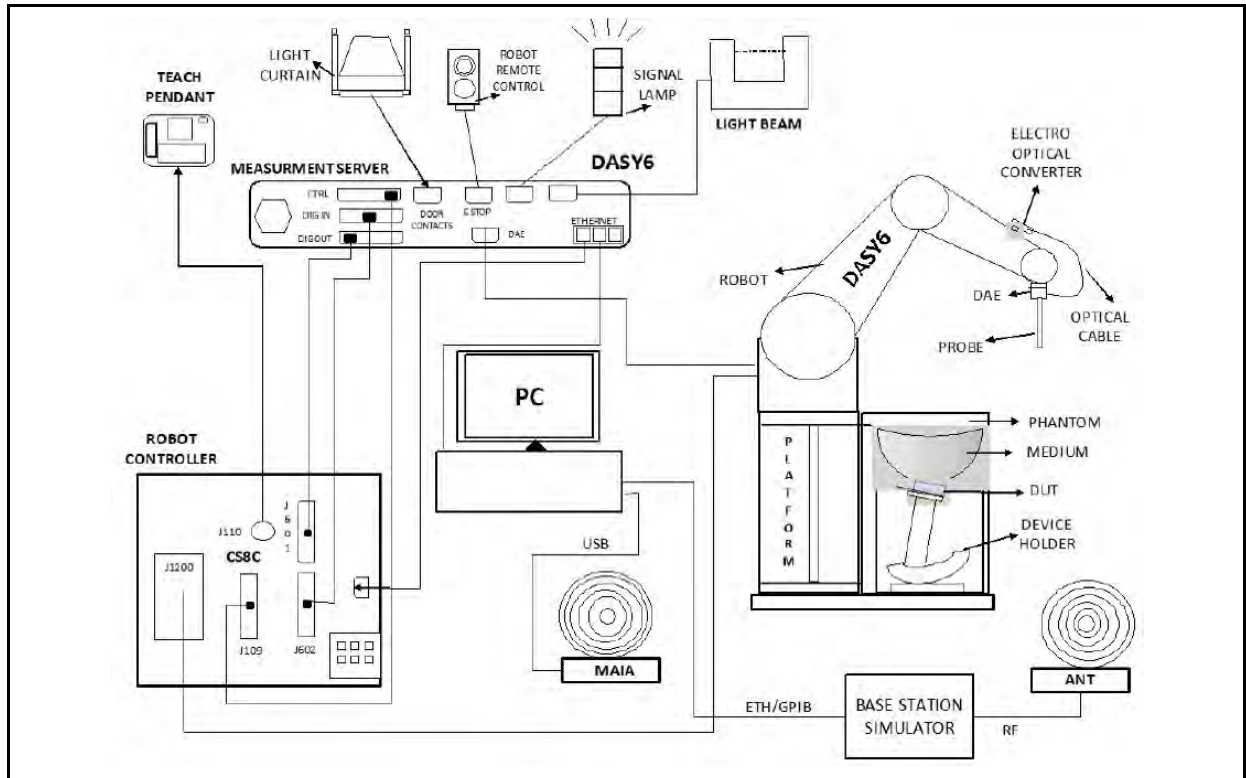
Notes :

- General Population / Uncontrolled Environments** are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.
- Occupational / Controlled Environments** are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation).
- The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
- The Spatial Average value of the SAR averaged over the whole body.
- The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

## 6. System Description

### 6.1 SAR Measurement System

The DASY6 system in cDASY6/DASY5 V5.2 SAR Configuration is shown below:



The system for performing compliance tests consists of the following items:

1. A standard high precision 6-axis robot (Stäubli TX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. An isotropic field probe optimized and calibrated for the targeted measurements.
3. A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
4. The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
5. The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
6. The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
7. A computer running Win7/Win8/Win10 professional operating system and the cDASY6 and DASY5 V5.2 software.
8. Remote controls with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
9. The phantom, the device holder and other accessories according to the targeted measurement.
10. Tissue simulating liquid mixed according to the given recipes.
11. The validation dipole has been calibrated within and the system performance check has been successful.

### <DASY E-Field Probe System>

The SAR measurements were conducted with the dosimetric probe (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multi-fiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY software reads the reflection during a software approach and looks for the maximum using a 2nd order fitting. The approach is stopped when reaching the maximum.

|                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Construction</b>                                                                                                                                                                                                                                                                                                                                                                                 | Symmetrical design with triangular core<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE) |
| <b>Frequency</b>                                                                                                                                                                                                                                                                                                                                                                                    | 4 MHz to 10 GHz<br>Linearity: $\pm 0.2$ dB (30 MHz to 10 GHz)                                                                                               |
| <b>Directivity</b>                                                                                                                                                                                                                                                                                                                                                                                  | $\pm 0.1$ dB in TSL (rotation around probe axis)<br>$\pm 0.3$ dB in TSL (rotation normal to probe axis)                                                     |
| <b>Dimensions</b>                                                                                                                                                                                                                                                                                                                                                                                   | Overall length: 337 mm (Tip: 20 mm)<br>Tip diameter: 2.5 mm (Body: 12 mm)<br>Typical distance from probe tip to dipole centers: 1 mm                        |
| <b>Calibration</b>                                                                                                                                                                                                                                                                                                                                                                                  | ISO/IEC 17025 calibration service available                                                                                                                 |
| <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p><b>EX3DV4 E-Field Probe</b></p> </div> <div style="text-align: center;">  <p><b>Probe setup on robot</b></p> </div> </div> |                                                                                                                                                             |

#### <Data Acquisition Electronic (DAE) System>

|                             |                                                                                                                                                                                                                                                     |                                                                                     |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Model</b>                | DAE4                                                                                                                                                                                                                                                |  |
| <b>Construction</b>         | Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop. |                                                                                     |
| <b>Measurement Range</b>    | -100 to +300 mV (16 bit resolution and two range settings: 4 mV, 400 mV)                                                                                                                                                                            |                                                                                     |
| <b>Input Offset Voltage</b> | < 5 $\mu$ V (with auto zero)                                                                                                                                                                                                                        |                                                                                     |
| <b>Input Bias Current</b>   | < 50 fA                                                                                                                                                                                                                                             |                                                                                     |
| <b>Dimensions</b>           | 60 x 60 x 68 mm                                                                                                                                                                                                                                     |                                                                                     |

#### <Robot>

|                       |                         |                                                                                       |
|-----------------------|-------------------------|---------------------------------------------------------------------------------------|
| <b>Positioner</b>     | Stäubli Unimation Corp. |  |
| <b>Robot Model</b>    | TX90XL                  |                                                                                       |
| <b>Number of Axes</b> | 6                       |                                                                                       |
| <b>Norminal Load</b>  | 5 kg                    |                                                                                       |
| <b>Reach</b>          | 1450 mm                 |                                                                                       |
| <b>Repeatability</b>  | $\pm$ 0.035 mm          |                                                                                       |

#### <Device Holder>

The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity  $\epsilon=3$  and loss tangent  $\delta=0.02$ . The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

|                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |
| Device Holder 1                                                                     | Device Holder 2                                                                       |

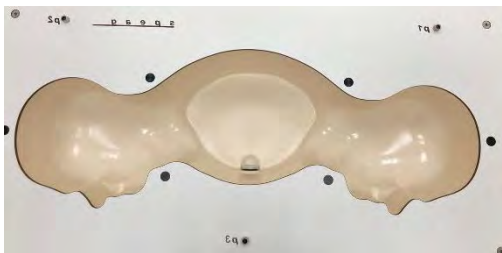
### <Oval Flat Phantom – ELI>

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (Oval Flat) phantom defined in IEEE 1528, IEC 62209-2 and IEC/IEEE 62209-1528. It enables the dosimetric evaluation of wireless portable device usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot.

|                        |                            |                                                                                    |
|------------------------|----------------------------|------------------------------------------------------------------------------------|
| <b>Shell Thickness</b> | 2 ±0.2 mm                  |  |
| <b>Filling Volume</b>  | Approx. 30 liters          |                                                                                    |
| <b>Dimensions</b>      | 190×600×400 mm (H × L × W) |                                                                                    |

### <SAM Phantom>

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528, IEC 62209-1 and IEC/IEEE 62209-1528. It enables the dosimetric evaluation of left and right hand phone usage as well as body-mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.

|                        |                                                             |                                                                                      |
|------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Shell Thickness</b> | 2 ±0.2 mm                                                   |  |
| <b>Filling Volume</b>  | Approx. 25 liters                                           |                                                                                      |
| <b>Dimensions</b>      | Length: 1000 mm<br>Width: 500 mm<br>Height: adjustable feet |                                                                                      |

## 6.2 Tissue Simulating Liquids (TSL)

### <Tissue Dielectric Parameters in IEEE 1528-2013 and IEC/IEEE 62209-1528>

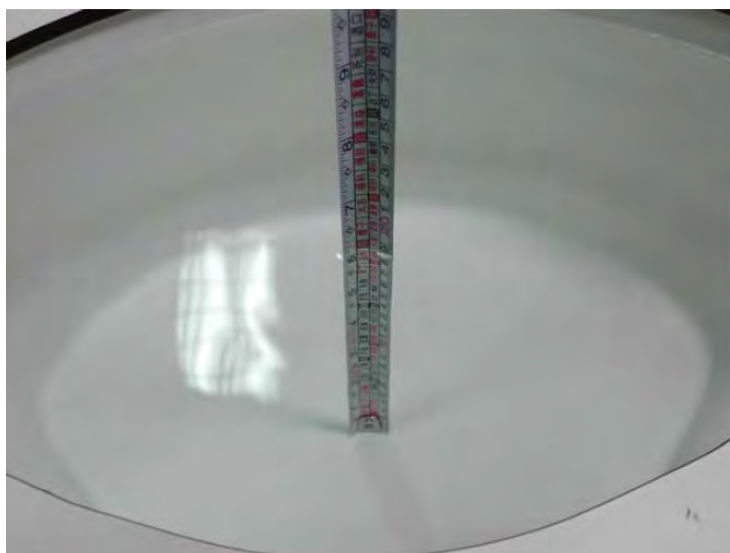
The following table incorporates the tissue dielectric parameters of head recommended by IEEE 1528-2013 and IEC/IEEE 62209-1528. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in human head. Other head and body tissue parameters that have not been specified are derived from the tissue dielectric parameters which computed by the 4-Cole-Cole equation according to the above-mentioned standards.

**Table 2 Dielectric properties of the tissue-equivalent liquid material**

| Frequency | Real part of the complex relative | Conductivity, $\sigma$ |
|-----------|-----------------------------------|------------------------|
| 30        | 55.0                              | 0.75                   |
| 150       | 52.3                              | 0.76                   |
| 300       | 45.3                              | 0.87                   |
| 450       | 43.5                              | 0.87                   |
| 750       | 41.9                              | 0.89                   |
| 835       | 41.5                              | 0.90                   |
| 900       | 41.5                              | 0.97                   |
| 1450      | 40.5                              | 1.20                   |
| 1800      | 40.0                              | 1.40                   |
| 1900      | 40.0                              | 1.40                   |
| 1950      | 40.0                              | 1.40                   |
| 2000      | 40.0                              | 1.40                   |
| 2100      | 39.8                              | 1.49                   |
| 2450      | 39.2                              | 1.80                   |
| 2600      | 39.0                              | 1.98                   |
| 3000      | 38.5                              | 2.40                   |
| 3500      | 37.9                              | 2.91                   |
| 4000      | 37.4                              | 3.43                   |
| 4500      | 36.8                              | 3.94                   |
| 5000      | 36.2                              | 4.45                   |
| 5200      | 36.0                              | 4.66                   |
| 5400      | 35.8                              | 4.86                   |
| 5600      | 35.5                              | 5.07                   |
| 5800      | 35.3                              | 5.27                   |
| 6000      | 35.1                              | 5.48                   |
| 6500      | 34.5                              | 6.07                   |
| 7000      | 33.9                              | 6.65                   |
| 7500      | 33.3                              | 7.24                   |
| 8000      | 32.7                              | 7.84                   |
| 8500      | 32.1                              | 8.46                   |
| 9000      | 31.6                              | 9.08                   |
| 9500      | 31.0                              | 9.71                   |
| 10000     | 30.4                              | 10.4                   |

### <Liquid Depth>

The depth of tissue-equivalent liquid in a phantom must be  $\geq 15.0$  cm to ensure that the probe is immersed sufficiently in the tissue medium.



Tissue-equivalent Liquid Height

### <Liquid Check>

1. The dielectric parameters of the liquids were verified prior to the SAR evaluation using a DAKS 3.5 Probe Kit.
2. The SAR testing with IEC tissue parameters as an alternative option to Head and body parameters. The head TSL were applied to body SAR tests with restrictions below:

The mixing and matching of head TSL and body TSL for body SAR testing in a single application are not permitted. For example, testing body SAR with head TSL and then switch to Body TSL for body SAR test is not allowed. The consistency of TSL is required.

| Tissue Temp (°C) | Liquid Type | Frequency (MHz) | Cond.    | Perm.        | target Cond. | target Perm. | $\sigma$ (Delta) (%) | $\epsilon_r$ (Delta) (%) | Limit (%) | Date          |
|------------------|-------------|-----------------|----------|--------------|--------------|--------------|----------------------|--------------------------|-----------|---------------|
|                  |             |                 | $\sigma$ | $\epsilon_r$ | $\sigma$     | $\epsilon_r$ |                      |                          |           |               |
| 22.7             | Head        | 1712.4 MHz      | 1.34     | 40.71        | 1.35         | 40.13        | -0.70                | 1.45                     | ±5        | Jun. 30, 2021 |
| 22.7             | Head        | 1732.6 MHz      | 1.36     | 40.67        | 1.36         | 40.10        | -0.36                | 1.42                     | ±5        | Jun. 30, 2021 |
| 22.7             | Head        | 1752.6 MHz      | 1.37     | 40.61        | 1.37         | 40.07        | -0.06                | 1.34                     | ±5        | Jun. 30, 2021 |
| 22.7             | Head        | 1720 MHz        | 1.35     | 40.70        | 1.35         | 40.11        | -0.48                | 1.48                     | ±5        | Jun. 30, 2021 |
| 22.7             | Head        | 1732.5 MHz      | 1.36     | 40.67        | 1.36         | 40.10        | -0.36                | 1.42                     | ±5        | Jun. 30, 2021 |
| 22.7             | Head        | 1745 MHz        | 1.37     | 40.63        | 1.37         | 40.08        | -0.19                | 1.37                     | ±5        | Jun. 30, 2021 |
| 22.7             | Head        | 1720 MHz        | 1.35     | 40.70        | 1.35         | 40.11        | -0.55                | 1.48                     | ±5        | Jun. 30, 2021 |
| 22.7             | Head        | 1745 MHz        | 1.37     | 40.63        | 1.37         | 40.08        | -0.19                | 1.37                     | ±5        | Jun. 30, 2021 |
| 22.7             | Head        | 1770 MHz        | 1.39     | 40.56        | 1.38         | 40.04        | 0.31                 | 1.30                     | ±5        | Jun. 30, 2021 |

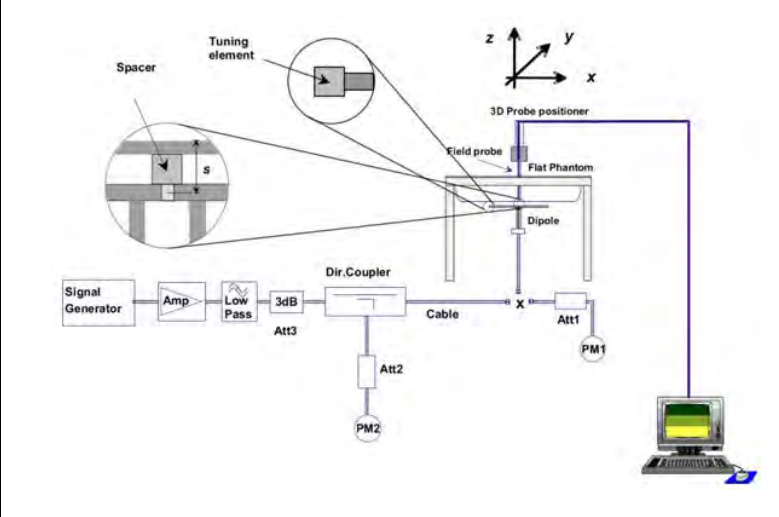


| Tissue Temp (°C) | Liquid Type | Frequency (MHz) | Cond.    | Perm.        | target Cond. | target Perm. | $\sigma$ (Delta) (%) | $\epsilon_r$ (Delta) (%) | Limit (%) | Date          |
|------------------|-------------|-----------------|----------|--------------|--------------|--------------|----------------------|--------------------------|-----------|---------------|
|                  |             |                 | $\sigma$ | $\epsilon_r$ | $\sigma$     | $\epsilon_r$ |                      |                          |           |               |
| 22.7             | Head        | 1852.4 MHz      | 1.41     | 40.29        | 1.40         | 40.00        | 0.34                 | 0.74                     | ±5        | Jul. 01, 2021 |
| 22.7             | Head        | 1880 MHz        | 1.43     | 40.17        | 1.40         | 40.00        | 2.23                 | 0.41                     | ±5        | Jul. 01, 2021 |
| 22.7             | Head        | 1907.6 MHz      | 1.46     | 40.09        | 1.40         | 40.00        | 3.90                 | 0.23                     | ±5        | Jul. 01, 2021 |
| 22.7             | Head        | 1860 MHz        | 1.41     | 40.25        | 1.40         | 40.00        | 0.98                 | 0.62                     | ±5        | Jul. 01, 2021 |
| 22.7             | Head        | 1880 MHz        | 1.43     | 40.17        | 1.40         | 40.00        | 2.23                 | 0.41                     | ±5        | Jul. 01, 2021 |
| 22.7             | Head        | 1900 MHz        | 1.45     | 40.11        | 1.40         | 40.00        | 3.48                 | 0.28                     | ±5        | Jul. 01, 2021 |
| 23.4             | Head        | 704 MHz         | 0.86     | 42.59        | 0.89         | 42.15        | -2.87                | 1.03                     | ±5        | Jul. 06, 2021 |
| 23.4             | Head        | 707.5 MHz       | 0.87     | 42.53        | 0.89         | 42.12        | -2.61                | 0.98                     | ±5        | Jul. 06, 2021 |
| 23.4             | Head        | 711 MHz         | 0.87     | 42.48        | 0.89         | 42.11        | -2.08                | 0.89                     | ±5        | Jul. 06, 2021 |
| 23.4             | Head        | 782 MHz         | 0.93     | 41.50        | 0.89         | 41.75        | 4.15                 | -0.61                    | ±5        | Jul. 06, 2021 |
| 23.4             | Head        | 709 MHz         | 0.87     | 42.51        | 0.89         | 42.12        | -2.32                | 0.93                     | ±5        | Jul. 06, 2021 |
| 23.4             | Head        | 710 MHz         | 0.87     | 42.50        | 0.89         | 42.11        | -2.20                | 0.92                     | ±5        | Jul. 06, 2021 |
| 23.4             | Head        | 711 MHz         | 0.87     | 42.48        | 0.89         | 42.11        | -2.08                | 0.89                     | ±5        | Jul. 06, 2021 |
| 23.1             | Head        | 826.4 MHz       | 0.89     | 42.45        | 0.90         | 41.54        | -0.67                | 2.20                     | ±5        | Jul. 06, 2021 |
| 23.1             | Head        | 836.4 MHz       | 0.90     | 42.30        | 0.90         | 41.50        | 0.11                 | 1.96                     | ±5        | Jul. 06, 2021 |
| 23.1             | Head        | 846.6 MHz       | 0.91     | 42.17        | 0.91         | 41.50        | 0.05                 | 1.61                     | ±5        | Jul. 06, 2021 |
| 23.1             | Head        | 829 MHz         | 0.90     | 42.42        | 0.90         | 41.53        | -0.37                | 2.14                     | ±5        | Jul. 06, 2021 |
| 23.1             | Head        | 836.5 MHz       | 0.90     | 42.31        | 0.90         | 41.50        | 0.13                 | 1.95                     | ±5        | Jul. 06, 2021 |
| 23.1             | Head        | 844 MHz         | 0.91     | 42.20        | 0.91         | 41.50        | 0.10                 | 1.69                     | ±5        | Jul. 06, 2021 |
| 23.1             | Head        | 821.5 MHz       | 0.89     | 42.52        | 0.90         | 41.57        | -1.10                | 2.30                     | ±5        | Jul. 06, 2021 |
| 23.1             | Head        | 831.5 MHz       | 0.90     | 42.38        | 0.90         | 41.51        | -0.20                | 2.10                     | ±5        | Jul. 06, 2021 |
| 23.1             | Head        | 841.5 MHz       | 0.91     | 42.24        | 0.91         | 41.50        | 0.15                 | 1.77                     | ±5        | Jul. 06, 2021 |
| 23.3             | Head        | 2510 MHz        | 1.89     | 39.58        | 1.86         | 39.12        | 1.54                 | 1.16                     | ±5        | Jul. 07, 2021 |
| 23.3             | Head        | 2535 MHz        | 1.92     | 39.53        | 1.89         | 39.09        | 1.37                 | 1.13                     | ±5        | Jul. 07, 2021 |
| 23.3             | Head        | 2560 MHz        | 1.94     | 39.43        | 1.92         | 39.05        | 1.14                 | 0.97                     | ±5        | Jul. 07, 2021 |
| 23.3             | Head        | 2580 MHz        | 1.96     | 39.33        | 1.94         | 39.03        | 1.12                 | 0.78                     | ±5        | Jul. 07, 2021 |
| 23.3             | Head        | 2595 MHz        | 1.98     | 39.28        | 1.95         | 39.01        | 1.28                 | 0.68                     | ±5        | Jul. 07, 2021 |
| 23.3             | Head        | 2610 MHz        | 2.00     | 39.23        | 1.97         | 38.99        | 1.34                 | 0.62                     | ±5        | Jul. 07, 2021 |
| 23.3             | Head        | 2510 MHz        | 1.89     | 39.58        | 1.86         | 39.12        | 1.54                 | 1.16                     | ±5        | Jul. 07, 2021 |
| 23.3             | Head        | 2549.5 MHz      | 1.93     | 39.47        | 1.91         | 39.07        | 1.26                 | 1.03                     | ±5        | Jul. 07, 2021 |
| 23.3             | Head        | 2595 MHz        | 1.98     | 39.28        | 1.95         | 39.01        | 1.28                 | 0.68                     | ±5        | Jul. 07, 2021 |
| 23.3             | Head        | 2636.5 MHz      | 2.03     | 39.16        | 2.00         | 38.96        | 1.30                 | 0.51                     | ±5        | Jul. 07, 2021 |
| 23.3             | Head        | 2680 MHz        | 2.08     | 39.03        | 2.05         | 38.90        | 1.39                 | 0.33                     | ±5        | Jul. 07, 2021 |
| 23.3             | Head        | 2506 MHz        | 1.89     | 39.58        | 1.86         | 39.13        | 1.51                 | 1.16                     | ±5        | Jul. 07, 2021 |
| 23.3             | Head        | 2310 MHz        | 1.67     | 40.33        | 1.68         | 39.44        | -0.50                | 2.25                     | ±5        | Jul. 07, 2021 |

## 7. System Verification

### 7.1 SAR System Verification

#### <Symmetric Dipoles for SAR System Verification>

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Symmetrical dipole with $\lambda/4$ balun enables measurement of feed point impedance with NWA matched for use near flat phantoms filled with head simulating solutions Includes distance holder and tripod adaptor Calibration Calibrated SAR value for specified position and input power at the flat phantom in head simulating solutions. |
| Return Loss                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | > 20 dB at specified verification position.                                                                                                                                                                                                                                                                                                   |
| Options                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Dipoles for other frequencies or solutions and other calibration conditions are available upon request.                                                                                                                                                                                                                                       |
| <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>The diagram illustrates the system verification setup. It includes a Signal Generator connected to an Amplifier (Amp), followed by a Low Pass filter, a 3dB attenuator (Att3), and a Directional Coupler (Dir. Coupler). The Dir. Coupler is connected to a Cable, which leads to a Dipole antenna. The Dipole is positioned near a Flat Phantom. A 3D Probe positioner is used to move the Flat Phantom. A Field probe is connected to the Dipole. The setup is connected to a computer (PM1) and a power meter (PM2). A Tuning element and Spacer are also shown.</p> </div> <div style="text-align: center;">  <p>The photograph shows the Validation Kit, which consists of a black tripod stand with a silver-colored metal rod extending upwards. A blue cable is connected to the base of the rod.</p> </div> </div> |                                                                                                                                                                                                                                                                                                                                               |
| <div style="display: flex; justify-content: space-around;"> <span>System Verification Setup Diagram</span> <span>Validation Kit</span> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                               |



### 7.1.1 SAR Verification Summary

Prior to the assessment, the validation data compared to the original value provided by SPEAG should be within its specifications of  $\pm 10\%$ . The measured SAR will be normalized to 1 W input power. The result indicates the system check can meet the variation criterion and plots can be referred to Appendix A of this report.

| Mixture Type | Frequency (MHz) | Power  | Probe              | Dipole             | SAR <sub>1g</sub> (W/Kg) | Normalize to 1 Watt 1 g (W/Kg) | 1 W Target SAR <sub>1g</sub> (W/Kg) | SAR <sub>10g</sub> (W/Kg) | Normalize to 1 Watt 10 g (W/Kg) | 1 W Target SAR <sub>10g</sub> (W/Kg) | Difference percentage 1 g | Difference percentage 10 g | Date          |
|--------------|-----------------|--------|--------------------|--------------------|--------------------------|--------------------------------|-------------------------------------|---------------------------|---------------------------------|--------------------------------------|---------------------------|----------------------------|---------------|
|              |                 |        | Model / Serial No. | Model / Serial No. |                          |                                |                                     |                           |                                 |                                      |                           |                            |               |
| Head         | 750             | 250 mW | EX3DV4-SN 3847     | D750V3 – SN1004    | 2.19                     | 8.76                           | 8.37                                | 1.46                      | 5.84                            | 5.48                                 | 4.7%                      | 6.6%                       | Jul. 06, 2021 |
| Head         | 835             | 250 mW | EX3DV4-SN 3847     | D835V2 – SN4d082   | 2.57                     | 10.28                          | 9.49                                | 1.67                      | 6.68                            | 6.17                                 | 8.3%                      | 8.3%                       | Jul. 06, 2021 |
| Head         | 1750            | 250 mW | EX3DV4-SN 3847     | D1750V2 – SN1111   | 9.29                     | 37.16                          | 36.40                               | 4.81                      | 19.24                           | 19.00                                | 2.1%                      | 1.3%                       | Jun. 30, 2021 |
| Head         | 1900            | 250 mW | EX3DV4-SN 3847     | D1900V2 – SN5d111  | 10.3                     | 41.2                           | 40.10                               | 5.35                      | 21.4                            | 20.70                                | 2.7%                      | 3.4%                       | Jul. 01, 2021 |
| Head         | 2300            | 250 mW | EX3DV4-SN 3847     | D2300V2 – SN1005   | 11.4                     | 45.6                           | 47.70                               | 5.32                      | 21.28                           | 22.10                                | -4.4%                     | -3.7%                      | Jul. 07, 2021 |
| Head         | 2600            | 250 mW | EX3DV4-SN 3847     | D2600V2 – SN1007   | 14.6                     | 58.4                           | 57.30                               | 6.8                       | 27.2                            | 25.90                                | 1.9%                      | 5.0%                       | Jul. 07, 2021 |



## 8. Test Equipment List

### 8.1 SAR Test Equipment List

| Manufacturer  | Name of Equipment                   | Type/Model                  | Serial Number   | Calibration |            |
|---------------|-------------------------------------|-----------------------------|-----------------|-------------|------------|
|               |                                     |                             |                 | Cal. Date   | Cal.Period |
| SPEAG         | 750MHz System Validation Kit        | D750V3                      | 1004            | 2020/09/17  | 1 year     |
| SPEAG         | 835MHz System Validation Kit        | D835V2                      | 4d082           | 2020/09/17  | 1 year     |
| SPEAG         | 1750MHz System Validation Kit       | D1750V2                     | 1111            | 2021/04/14  | 1 year     |
| SPEAG         | 1900MHz System Validation Kit       | D1900V2                     | 5d111           | 2020/09/18  | 1 year     |
| SPEAG         | 2300MHz System Validation Kit       | D2300V2                     | 1005            | 2021/04/14  | 1 year     |
| SPEAG         | 2600MHz System Validation Kit       | D2600V2                     | 1007            | 2020/09/29  | 1 year     |
| SPEAG         | Dosimetric E-Field Probe            | EX3DV4                      | 3847            | 2021/03/26  | 1 year     |
| SPEAG         | Data Acquisition Electronics        | DAE4                        | 541             | 2021/03/22  | 1 year     |
| SPEAG         | Measurement Server                  | SE UMS 028 BB               | 1488            | NCR         |            |
| SPEAG         | Device Holder                       | N/A                         | N/A             | NCR         |            |
| SPEAG         | Robot                               | Staubli TX90XL              | F16/54FTA1/A/01 | NCR         |            |
| SPEAG         | Software                            | DASY52<br>V52.10 (3)        | N/A             | NCR         |            |
| SPEAG         | Software                            | SEMCAD X<br>V14.6.10 (7331) | N/A             | NCR         |            |
| R&S           | Wireless Communication Test Set     | CMU200                      | 112387          | 2021/03/17  | 1 year     |
| Anritsu       | Radio Communication Analyzer        | MT8820C                     | 6201342039      | 2020/12/03  | 1 year     |
| R&S           | Wideband Radio Communication Tester | CMW500                      | 103168          | 2020/11/20  | 1 year     |
| SPEAG         | Network Analyzer                    | DAKS_VNA R140               | 0010318         | 2021/05/20  | 1 year     |
| SPEAG         | Dielectric Probe Kit                | DAKS-3.5                    | 1101            | 2021/05/26  | 1 year     |
| HILA          | Digital Thermometer                 | TM-906A                     | 1500033         | 2020/10/28  | 1 year     |
| Agilent       | Power Sensor                        | 8481H                       | 3318A20779      | 2021/05/26  | 1 year     |
| Agilent       | Power Meter                         | EDM Series E4418B           | GB40206143      | 2021/05/26  | 1 year     |
| Anritsu       | Power Sensor                        | MA2411B                     | 1126022         | 2020/09/01  | 1 year     |
| Anritsu       | Power Meter                         | ML2495A                     | 1135009         | 2020/09/01  | 1 year     |
| Agilent       | Signal Generator                    | E8257D                      | MY44320425      | 2021/02/18  | 1 year     |
| Agilent       | Spectrum Analyzer                   | N9030A                      | MT-112          | 2021/01/08  | 1 year     |
| Agilent       | Dual Directional Coupler            | 778D                        | 50334           | NCR         |            |
| Woken         | Dual Directional Coupler            | 0100AZ20200801O             | 11012409517     | NCR         |            |
| Mini-Circuits | Power Amplifier                     | EMC014225P                  | 980292          | NCR         |            |
| Mini-Circuits | Power Amplifier                     | EMC2830P                    | 980293          | NCR         |            |
| Aisi          | Attenuator                          | IEAT 3dB                    | N/A             | NCR         |            |

Testing Engineer: Jason Tsao / Ted Hsieh

## **9. Measurement Procedure**

### **9.1 SAR Measurement Procedure**

The measurement procedures are as follows:

1. The DUT is installed engineering testing software that provides continuous transmitting signal.
2. Measure output power through RF cable and power meter
3. Set scan area, grid size and other setting on the DASY software
4. Find out the largest SAR result on these testing positions of each band
5. Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

1. Power reference measurement
2. Area scan
3. Zoom scan
4. Power drift measurement

### 9.1.1 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan measures points and step size follow as below. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution.

The measure settings are referred to KDB 865664 D01v01r04 :

|                                                                                                                                                                                                                                                                                                           |                                    |                                                                             | $\leq 3$ GHz                                                                                                                                                                                                                                                           | $> 3$ GHz                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface                                                                                                                                                                                                    |                                    |                                                                             | 5 mm $\pm$ 1 mm                                                                                                                                                                                                                                                        | $\frac{1}{2} \cdot \delta \cdot \ln(2)$ mm $\pm$ 0.5 mm                       |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location                                                                                                                                                                                                                 |                                    |                                                                             | $30^{\circ} \pm 1^{\circ}$                                                                                                                                                                                                                                             | $20^{\circ} \pm 1^{\circ}$                                                    |
| Maximum area scan spatial resolution: $\Delta x_{Area}$ , $\Delta y_{Area}$                                                                                                                                                                                                                               |                                    |                                                                             | $\leq 2$ GHz: $\leq 15$ mm<br>2 – 3 GHz: $\leq 12$ mm                                                                                                                                                                                                                  | 3 – 4 GHz: $\leq 12$ mm<br>4 – 6 GHz: $\leq 10$ mm                            |
|                                                                                                                                                                                                                                                                                                           |                                    |                                                                             | When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device. |                                                                               |
| Maximum zoom scan spatial resolution: $\Delta x_{Area}$ , $\Delta y_{Area}$                                                                                                                                                                                                                               |                                    |                                                                             | $\leq 2$ GHz: $\leq 8$ mm<br>2 – 3 GHz: $\leq 5$ mm*                                                                                                                                                                                                                   | 3 – 4 GHz: $\leq 5$ mm*<br>4 – 6 GHz: $\leq 4$ mm*                            |
| Maximum zoom scan spatial resolution, normal to phantom surface                                                                                                                                                                                                                                           | uniform grid: $\Delta z_{Zoom}(n)$ |                                                                             | $\leq 5$ mm                                                                                                                                                                                                                                                            | 3 – 4 GHz: $\leq 4$ mm<br>4 – 5 GHz: $\leq 3$ mm<br>5 – 6 GHz: $\leq 2$ mm    |
|                                                                                                                                                                                                                                                                                                           | Graded grid                        | $\Delta z_{Zoom}(1)$ :<br>between 1st two points closest to phantom surface | $\leq 4$ mm                                                                                                                                                                                                                                                            | 3 – 4 GHz: $\leq 3$ mm<br>4 – 5 GHz: $\leq 2.5$ mm<br>5 – 6 GHz: $\leq 2$ mm  |
|                                                                                                                                                                                                                                                                                                           |                                    | $\Delta z_{Zoom}(n>1)$ :<br>between subsequent points                       | $\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$ mm                                                                                                                                                                                                                               |                                                                               |
| Minimum zoom scan volume                                                                                                                                                                                                                                                                                  | x, y, z                            |                                                                             | $\geq 30$ mm                                                                                                                                                                                                                                                           | 3 – 4 GHz: $\geq 28$ mm<br>4 – 5 GHz: $\geq 25$ mm<br>5 – 6 GHz: $\geq 22$ mm |
| Note: $\delta$ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.                                                                                                                                                                     |                                    |                                                                             |                                                                                                                                                                                                                                                                        |                                                                               |
| * When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB Publication 447498 is $\leq 1.4$ W/kg, $\leq 8$ mm, $\leq 7$ mm and $\leq 5$ mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz. |                                    |                                                                             |                                                                                                                                                                                                                                                                        |                                                                               |

### 9.1.2 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1 g aggregate SAR, the DUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

### 9.1.3 Power Drift Monitoring

All SAR testing is under the DUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of DUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5 %, the SAR will be retested.

### 9.1.4 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1 g and 10 g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1 g and 10 g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1 g and 10 g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

1. Extraction of the measured data (grid and values) from the Zoom Scan
2. Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
3. Generation of a high-resolution mesh within the measured volume
4. Interpolation of all measured values form the measurement grid to the high-resolution grid
5. Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
6. Calculation of the averaged SAR within masses of 1 g and 10 g

## 10. Measurement Uncertainty

### 10.1 SAR Measurement Uncertainty

Uncertainty Budget for frequency range 300 MHz to 3 GHz:

| Measurement uncertainty (0.3GHz ~3 GHz)        |      |             |       |                     |                      |                              |                               |                |
|------------------------------------------------|------|-------------|-------|---------------------|----------------------|------------------------------|-------------------------------|----------------|
| Uncertainty component                          | Tol. | Prob. Dist. | Div.  | C <sub>i</sub> - 1g | C <sub>i</sub> - 10g | u <sub>i</sub> - 1g<br>(+ %) | u <sub>i</sub> - 10g<br>(+ %) | v <sub>i</sub> |
| Measurement system                             |      |             |       |                     |                      |                              |                               |                |
| Probe calibration                              | 6.1  | N           | 1     | 1                   | 1                    | 6.1                          | 6.1                           | ∞              |
| Axial isotropy                                 | 4.7  | R           | 1.732 | 0.7                 | 0.7                  | 1.9                          | 1.9                           | ∞              |
| Hemispherical isotropy                         | 9.6  | R           | 1.732 | 0.7                 | 0.7                  | 3.9                          | 3.9                           | ∞              |
| Boundary effect                                | 1    | R           | 1.732 | 1                   | 1                    | 0.6                          | 0.6                           | ∞              |
| Linearity                                      | 4.7  | R           | 1.732 | 1                   | 1                    | 2.7                          | 2.7                           | ∞              |
| System detection limits                        | 0.25 | R           | 1.732 | 1                   | 1                    | 0.1                          | 0.1                           | ∞              |
| Readout electronics                            | 0.3  | N           | 1     | 1                   | 1                    | 0.3                          | 0.3                           | ∞              |
| Response time                                  | 0.8  | R           | 1.732 | 1                   | 1                    | 0.5                          | 0.5                           | ∞              |
| Integration time                               | 2.6  | R           | 1.732 | 1                   | 1                    | 1.5                          | 1.5                           | ∞              |
| RF Ambient Noise                               | 3    | R           | 1.732 | 1                   | 1                    | 1.7                          | 1.7                           | ∞              |
| RF Ambient Reflections                         | 3    | R           | 1.732 | 1                   | 1                    | 1.7                          | 1.7                           | ∞              |
| Probe Positioner                               | 0.02 | R           | 1.732 | 1                   | 1                    | 0                            | 0                             | ∞              |
| Probe Positioning                              | 0.4  | R           | 1.732 | 1                   | 1                    | 0.2                          | 0.2                           | ∞              |
| Max. SAR evaluation                            | 2    | R           | 1.732 | 1                   | 1                    | 1.2                          | 1.2                           | ∞              |
| Test sample related                            |      |             |       |                     |                      |                              |                               |                |
| Test sample positioning                        | 2.9  | N           | 1     | 1                   | 1                    | 2.9                          | 2.9                           | 145            |
| Device holder uncertainty                      | 3.6  | N           | 1     | 1                   | 1                    | 3.6                          | 3.6                           | 5              |
| SAR drift measurement                          | 5    | R           | 1.732 | 1                   | 1                    | 2.9                          | 2.9                           | ∞              |
| Phantom and tissue parameters                  |      |             |       |                     |                      |                              |                               |                |
| Phantom shell uncertainty                      | 7.6  | R           | 1.732 | 1                   | 1                    | 4.4                          | 4.4                           | ∞              |
| Liquid Conductivity (target)                   | 5    | R           | 1.732 | 0.78                | 0.71                 | 2.3                          | 2                             | ∞              |
| Liquid Conductivity (measurement)              | 4.8  | R           | 1.732 | 0.78                | 0.71                 | 2.2                          | 2                             | ∞              |
| Liquid Permittivity (target)                   | 5    | R           | 1.732 | 0.23                | 0.26                 | 0.7                          | 0.8                           | ∞              |
| Liquid Permittivity (measurement)              | 4.8  | R           | 1.732 | 0.23                | 0.26                 | 0.6                          | 0.7                           | ∞              |
| Combined standard uncertainty                  |      |             |       |                     |                      |                              |                               |                |
| -                                              | -    | RSS         | -     | -                   | -                    | 11.5                         | 11.5                          | 515            |
| Expanded uncertainty (95% confidence interval) |      |             |       |                     |                      |                              |                               |                |
| -                                              | -    | k=2         | -     | -                   | -                    | 23.1                         | 22.9                          |                |

Uncertainty Budget for frequency range 3 GHz to 6 GHz:

| Measurement uncertainty (3 GHz~6 GHz)          |      |             |       |                     |                      |                                   |                                    |                |
|------------------------------------------------|------|-------------|-------|---------------------|----------------------|-----------------------------------|------------------------------------|----------------|
| Uncertainty component                          | Tol. | Prob. Dist. | Div.  | C <sub>i</sub> - 1g | C <sub>i</sub> - 10g | u <sub>i</sub> - 1g<br>( $\pm$ %) | u <sub>i</sub> - 10g<br>( $\pm$ %) | v <sub>i</sub> |
| Measurement system                             |      |             |       |                     |                      |                                   |                                    |                |
| Probe calibration                              | 6.7  | N           | 1     | 1                   | 1                    | 6.7                               | 6.7                                | $\infty$       |
| Axial isotropy                                 | 4.7  | R           | 1.732 | 0.7                 | 0.7                  | 1.9                               | 1.9                                | $\infty$       |
| Hemispherical isotropy                         | 9.6  | R           | 1.732 | 0.7                 | 0.7                  | 3.9                               | 3.9                                | $\infty$       |
| Boundary effect                                | 2    | R           | 1.732 | 1                   | 1                    | 1.2                               | 1.2                                | $\infty$       |
| Linearity                                      | 4.7  | R           | 1.732 | 1                   | 1                    | 2.7                               | 2.7                                | $\infty$       |
| System detection limits                        | 0.25 | R           | 1.732 | 1                   | 1                    | 0.1                               | 0.1                                | $\infty$       |
| Readout electronics                            | 0.3  | N           | 1     | 1                   | 1                    | 0.3                               | 0.3                                | $\infty$       |
| Response time                                  | 0    | R           | 1.732 | 1                   | 1                    | 0                                 | 0                                  | $\infty$       |
| Integration time                               | 2.6  | R           | 1.732 | 1                   | 1                    | 1.5                               | 1.5                                | $\infty$       |
| RF Ambient Noise                               | 3    | R           | 1.732 | 1                   | 1                    | 1.7                               | 1.7                                | $\infty$       |
| RF Ambient Reflections                         | 3    | R           | 1.732 | 1                   | 1                    | 1.7                               | 1.7                                | $\infty$       |
| Probe Positioner                               | 0.04 | R           | 1.732 | 1                   | 1                    | 0.02                              | 0.02                               | $\infty$       |
| Probe Positioning                              | 0.8  | R           | 1.732 | 1                   | 1                    | 0.5                               | 0.5                                | $\infty$       |
| Max. SAR evaluation                            | 4    | R           | 1.732 | 1                   | 1                    | 2.3                               | 2.3                                | $\infty$       |
| Test sample related                            |      |             |       |                     |                      |                                   |                                    |                |
| Test sample positioning                        | 2.9  | N           | 1     | 1                   | 1                    | 2.9                               | 2.9                                | 145            |
| Device holder uncertainty                      | 3.6  | N           | 1     | 1                   | 1                    | 3.6                               | 3.6                                | 7              |
| SAR drift measurement                          | 5    | R           | 1.732 | 1                   | 1                    | 2.9                               | 2.9                                | $\infty$       |
| Phantom and tissue parameters                  |      |             |       |                     |                      |                                   |                                    |                |
| Phantom shell uncertainty                      | 7.6  | R           | 1.732 | 1                   | 1                    | 4.4                               | 4.4                                | $\infty$       |
| Liquid Conductivity (target)                   | 5    | R           | 1.732 | 0.78                | 0.71                 | 2.3                               | 2                                  | $\infty$       |
| Liquid Conductivity (measurement)              | 4.8  | R           | 1.732 | 0.78                | 0.71                 | 2.2                               | 2                                  | $\infty$       |
| Liquid Permittivity (target)                   | 5    | R           | 1.732 | 0.23                | 0.26                 | 0.7                               | 0.8                                | $\infty$       |
| Liquid Permittivity (measurement)              | 4.8  | R           | 1.732 | 0.23                | 0.26                 | 0.6                               | 0.7                                | $\infty$       |
| Combined standard uncertainty                  |      |             |       |                     |                      |                                   |                                    |                |
| -                                              | -    | RSS         | -     | -                   | -                    | 12.1                              | 12.0                               | 859            |
| Expanded uncertainty (95% confidence interval) |      |             |       |                     |                      |                                   |                                    |                |
| -                                              | -    | k =2        | -     | -                   | -                    | 24.1                              | 24.0                               | -              |

Uncertainty Budget for frequency range 6 GHz to 10 GHz:

| Measurement uncertainty (6 GHz~10 GHz)         |      |             |       |                     |                      |                                   |                                    |                |
|------------------------------------------------|------|-------------|-------|---------------------|----------------------|-----------------------------------|------------------------------------|----------------|
| Uncertainty component                          | Tol. | Prob. Dist. | Div.  | C <sub>i</sub> - 1g | C <sub>i</sub> - 10g | u <sub>i</sub> - 1g<br>( $\pm$ %) | u <sub>i</sub> - 10g<br>( $\pm$ %) | v <sub>i</sub> |
| Measurement system                             |      |             |       |                     |                      |                                   |                                    |                |
| Probe calibration                              | 9.3  | N           | 1     | 1                   | 1                    | 9.3                               | 9.3                                | $\infty$       |
| Axial isotropy                                 | 4.7  | R           | 1.732 | 0.7                 | 0.7                  | 1.9                               | 1.9                                | $\infty$       |
| Hemispherical isotropy                         | 9.6  | R           | 1.732 | 0.7                 | 0.7                  | 3.9                               | 3.9                                | $\infty$       |
| Boundary effect                                | 2    | R           | 1.732 | 1                   | 1                    | 1.2                               | 1.2                                | $\infty$       |
| Linearity                                      | 4.7  | R           | 1.732 | 1                   | 1                    | 2.7                               | 2.7                                | $\infty$       |
| System detection limits                        | 0.25 | R           | 1.732 | 1                   | 1                    | 0.1                               | 0.1                                | $\infty$       |
| Readout electronics                            | 0.3  | N           | 1     | 1                   | 1                    | 0.3                               | 0.3                                | $\infty$       |
| Response time                                  | 0.8  | R           | 1.732 | 1                   | 1                    | 0.5                               | 0.5                                | $\infty$       |
| Integration time                               | 2.6  | R           | 1.732 | 1                   | 1                    | 1.5                               | 1.5                                | $\infty$       |
| RF Ambient Noise                               | 3    | R           | 1.732 | 1                   | 1                    | 1.7                               | 1.7                                | $\infty$       |
| RF Ambient Reflections                         | 3    | R           | 1.732 | 1                   | 1                    | 1.7                               | 1.7                                | $\infty$       |
| Probe Positioner                               | 0.04 | R           | 1.732 | 1                   | 1                    | 0                                 | 0                                  | $\infty$       |
| Probe Positioning                              | 1.6  | R           | 1.732 | 1                   | 1                    | 0.9                               | 0.9                                | $\infty$       |
| Max. SAR evaluation                            | 6    | R           | 1.732 | 1                   | 1                    | 3.5                               | 3.5                                | $\infty$       |
| Test sample related                            |      |             |       |                     |                      |                                   |                                    |                |
| Test sample positioning                        | 2.9  | N           | 1     | 1                   | 1                    | 2.9                               | 2.9                                | 145            |
| Device holder uncertainty                      | 3.6  | N           | 1     | 1                   | 1                    | 3.6                               | 3.6                                | 5              |
| SAR drift measurement                          | 5    | R           | 1.732 | 1                   | 1                    | 2.9                               | 2.9                                | $\infty$       |
| Phantom and tissue parameters                  |      |             |       |                     |                      |                                   |                                    |                |
| Phantom shell uncertainty                      | 6.6  | R           | 1.732 | 1                   | 1                    | 3.3                               | 3.3                                | $\infty$       |
| Liquid Conductivity (target)                   | 5    | R           | 1.732 | 0.78                | 0.71                 | 2.3                               | 2                                  | $\infty$       |
| Liquid Conductivity (measurement)              | 4.8  | N           | 1     | 0.78                | 0.71                 | 3.7                               | 3.4                                | $\infty$       |
| Liquid Permittivity (target)                   | 5    | R           | 1.732 | 0.23                | 0.26                 | 0.7                               | 0.8                                | $\infty$       |
| Liquid Permittivity (measurement)              | 4.8  | N           | 1     | 0.23                | 0.26                 | 1.1                               | 1.2                                | $\infty$       |
| Combined standard uncertainty                  |      |             |       |                     |                      |                                   |                                    |                |
| -                                              | -    | RSS         | -     | -                   | -                    | 14.2                              | 14.1                               | 1174           |
| Expanded uncertainty (95% confidence interval) |      |             |       |                     |                      |                                   |                                    |                |
| -                                              | -    | k =2        | -     | -                   | -                    | 28.3                              | 28.1                               | -              |

## **11. Measurement Evaluation**

### **11.1 Positioning of the DUT in Relation to the Phantom**

The following measurement procedure shall be according to RSS-102 Supplementary procedures (SPR-001):

Unless the side(s)/edge(s) of the laptop type computer (laptop mode/tablet mode) containing the built-in antenna(s) was already tested against the flat phantom.

Industry Canada requires SAR measurements to be performed with the side(s)/edge(s) of the display screen containing the built-in antenna(s) pointing towards the flat phantom.

1. If the integrated antenna(s) are located in the back side of the display screen, the back side shall be facing towards the flat phantom at a distance not exceeding 25 mm.
2. If the integrated antenna(s) are installed along the edge(s) of the display screen, the edge(s) shall be facing towards the flat phantom at a distance not exceeding 25 mm.

According to KDB 616217 D04:

1. When antennas are incorporated in the keyboard section of a laptop computer, SAR is required for the bottom surface of the keyboard. Provided tablet use conditions are not supported by the laptop computer, SAR tests for bystander exposure from the edges of the keyboard.
2. Some 2-in-1 tablets may operate with the display folded on top of the keyboard. Most recent tablets are designed with an interactive display that may not require a physical keyboard. Both configurations are used in similar manners and require SAR evaluation for the back surface and edges of the tablet. For keyboards that can be unfolded like a laptop, the procedures for laptop platform should also be applied.



## 11.2 SAR Testing with RF Transmitter

### 11.2.1 SAR Testing with WCDMA

#### <General requirements>

1. The default test configuration is to measure SAR with an established radio link between the handset and a communication test set using a 12.2 kbps RMC (reference measurement channel) configured in Test Loop Mode 1.
2. SAR must be measured according to these maximum output conditions and requirements in KDB Publication 447498 D01.
3. **Head SAR:**
  - SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
4. **Body-Worn Accessory SAR:**
  - SAR for body-worn accessory configurations is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
  - The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode.

#### <Setup >

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

- Step1: set a Test Mode 1 loop back with a 12.2 kbps Reference Measurement Channel (RMC).
- Step 2: set and send continuously up power control commands to the device.
- Step 3: measure the power at the device antenna connector using the power meter with average detector and test SAR.

## 11.2.2 SAR Testing with HSDPA / HSUPA

### <General requirements>

1. The following procedures are applicable to HSPA (HSUPA/HSDPA) data devices operating under 3GPP Release 6. Body exposure conditions generally apply to these devices, including handsets and data modems operating in various electronic devices.
2. HSUPA operates in conjunction with WCDMA and HSDPA. SAR is initially measured in WCDMA test configurations without HSPA. The default test configuration is to establish a radio link between the DUT and a communication test set to configure a 12.2 kbps RMC (reference measurement channel) in Test Loop Mode 1.
3. SAR for HSPA is selectively measured with HS-DPCCH, EDPCCCH and E-DPDCH, all enabled, along with a 12.2 kbps RMC using the highest SAR configuration in WCDMA with 12.2 kbps RMC only. An FRC is configured according to HSDPCCH Sub-test 1 using H-set 1 and QPSK. HSPA is configured according to E-DCH Subtest 5 requirements.

SAR for other HSPA sub-test configurations is also confirmed selectively according to output power, exposure conditions and E-DCH UE Category. Maximum output power is verified according to procedures in applicable versions of 3GPP TS 34.121 and SAR must be measured according to these maximum output conditions. The UE Categories for HSDPCCH and HSPA should be clearly identified in the SAR report. The following procedures are applicable only if Maximum Power Reduction (MPR) is implemented according to Cubic Metric (CM) requirements.

4. When voice transmission and head exposure conditions are applicable to a WCDMA/HSPA data device, head exposure is measured according to the 'Head SAR Measurements' procedures in the 'WCDMA Handsets' section of this document.
5. SAR for body exposure configurations are measured according to the 'Body SAR Measurements' procedures in the 'WCDMA Handsets' section of this document. In addition, body SAR is also measured for HSPA when the maximum average output of each RF channel with HSPA active is at least ¼ dB higher than that measured without HSPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is above 75% of the SAR limit.
6. Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 with power control algorithm 2, according to the highest body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP is applicable for head exposure, SAR is not required when the maximum output of each RF channel with HSPA is less than ¼ dB higher than that measured using 12.2 kbps RMC; otherwise, the same HSPA configuration used for body measurements should be used to test for head exposure.
7. Due to inner loop power control requirements in HSPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA should be configured according to the  $\beta$  values indicated below as well as other applicable procedures described in the 'WCDMA Handset' and 'Release 5 HSDPA Data Devices' sections of this document.

### <Setup >

HSDPA should be configured according to the UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors( $\beta_c$ ,  $\beta_d$ ), and HS-DPCCH power offset parameters ( $\Delta_{ACK}$ ,  $\Delta_{NACK}$ ,  $\Delta_{CQI}$ ) should be set according to values indicated in the Table below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

| Setup for Release 5 HSDPA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           |           |                   |                   |                      |                           |                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|-------------------|-------------------|----------------------|---------------------------|----------------------------|
| Sub-test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | $\beta_c$ | $\beta_d$ | $\beta_d$<br>(SF) | $\beta_c/\beta_d$ | $\beta_{hs}^{(1,2)}$ | CM <sup>(3)</sup><br>(dB) | MRP <sup>(3)</sup><br>(dB) |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2/15      | 15/15     | 64                | 2/15              | 4/15                 | 0.0                       | 0.0                        |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 12/15(4)  | 15/15(4)  | 64                | 12/15(4)          | 24/15                | 1.0                       | 0.0                        |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 15/15     | 8/15      | 64                | 15/8              | 30/15                | 1.5                       | 0.5                        |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 15/15     | 4/15      | 64                | 15/4              | 30/15                | 1.5                       | 0.5                        |
| Note<br>1. $\Delta_{ACK}$ , $\Delta_{NACK}$ and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$<br>2. For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude(EVM) with HS-DPCCH test in clause 5.13.1A and HSDPA EVM with phase discontinuity in clause 5.13.1AA, $\Delta_{ACK}$ and $\Delta_{NACK} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$ and $\Delta_{CQI} = 24/15$ with $\beta_{hs} = 24/15 * \beta_c$<br>3. CM = 1 for $\beta_c/\beta_d = 12/15$ , $\beta_{hs}/\beta_c = 24/15$ . For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.<br>4. For subtest 2 the $\beta_c/\beta_d$ ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$ . |           |           |                   |                   |                      |                           |                            |

### 11.2.3 SAR Testing with LTE

#### <FDD Setup >

All SAR measurements for LTE were performed using the Anritsu MT8820C. A closed loop power control setting allowed the UE to transmit at the maximum output power during the SAR measurements. Configure the basestation to support LTE tests in respect to the 3GPP 36.521-1, and set ch , RB allocation number ,RB allocation offset , and send continuously Up power control commands to the device.

MPR was enabled for this device. A-MPR was disabled for all SAR test measurements.

#### <TDD Setup >

All SAR measurements for LTE were performed using the Anritsu MT8820C. A closed loop power control setting allowed the UE to transmit at the maximum output power during the SAR measurements. Configure the basestation to support LTE tests in respect to the 3GPP 36.521-1, and set ch , TDD mode , RB allocation number ,RB allocation offset , and send continuously Up power control commands to the device.

MPR was enabled for this device. A-MPR was disabled for all SAR test measurements.

For 3GPP table 4.2.1 as below, support configurations and worst-case UpPTS information into the table.

The EUT only supports the 40 % case, which is Table 4.2.2, configuration #1 below.

| Uplink-downlink configuration | Downlink-to-Uplink Switch-point periodicity | Subframe number |   |   |   |   |   |   |   |   |   |
|-------------------------------|---------------------------------------------|-----------------|---|---|---|---|---|---|---|---|---|
|                               |                                             | 0               | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0                             | 5ms                                         | D               | S | U | U | U | D | S | U | U | U |
| 1                             | 5ms                                         | D               | S | U | U | D | D | S | U | U | D |
| 2                             | 5ms                                         | D               | S | U | D | D | D | S | U | D | D |
| 3                             | 10ms                                        | D               | S | U | U | U | D | D | D | D | D |
| 4                             | 10ms                                        | D               | S | U | U | D | D | D | D | D | D |
| 5                             | 10ms                                        | D               | S | U | D | D | D | D | D | D | D |
| 6                             | 5ms                                         | D               | S | U | U | U | D | S | U | U | D |

#### <Maximum power reduction (MPR) >

Identify the LTE voice/data requirements in each operating mode and exposure condition with respect to head and body test configurations, antenna locations, handset flip-cover or slide positions, antenna diversity conditions etc.

The voice and data transmission:

- ◆ Data only device.

Identify if Maximum Power Reduction (MPR) is optional or mandatory, i.e. built-in by design:

- ◆ Maximum Power Reduction (MPR) is mandatory, i.e. built-in by design.
- ◆ A-MPR (additional MPR) must be disabled
- ◆ A-MPR was disabled during testing.

| Maximum Power Reduction (MPR) for Power Class 1, 2 and 3      |         |       |       |        |        |       |          |
|---------------------------------------------------------------|---------|-------|-------|--------|--------|-------|----------|
| Channel bandwidth / Transmission bandwidth configuration (RB) |         |       |       |        |        |       |          |
| Modulation                                                    | 1.4 MHz | 3 MHz | 5 MHz | 10 MHz | 15 MHz | 20MHz | MPR (dB) |
| QPSK                                                          | > 5     | > 4   | > 8   | > 12   | > 16   | > 18  | ≤ 1      |
| 16 QAM                                                        | ≤ 5     | ≤ 4   | ≤ 8   | ≤ 12   | ≤ 16   | ≤ 18  | ≤ 1      |
| 16 QAM                                                        | > 5     | > 4   | > 8   | > 12   | > 16   | > 18  | ≤ 2      |
| 64 QAM                                                        | ≤ 5     | ≤ 4   | ≤ 8   | ≤ 12   | ≤ 16   | ≤ 18  | ≤ 2      |
| 64 QAM                                                        | > 5     | > 4   | > 8   | > 12   | > 16   | > 18  | ≤ 3      |
| 256 QAM                                                       | ≥ 1     |       |       |        |        |       | ≤ 5      |

## 11.2.4 SAR Testing with LTE

### <General requirements>

1. Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. When the reported SAR is  $\leq 0.8$  W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel.
3. When the highest reported SAR for 1 RB and 50% RB allocation are  $> 0.8$  W/kg, SAR is measured for the highest output power channel in 100%RB.
4. When the reported SAR of a required test channel is  $> 1.45$  W/kg, SAR is required for all three RB offset configurations for that required test channel.
5. The procedures required for 1 RB allocation are applied to measure the SAR for QPSK with 50% RB allocation.
6. For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are  $\leq 0.8$  W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is  $> 1.45$  W/kg, the remaining required test channels must also be tested.
7. SAR is required only when the highest maximum output power for the configuration in the higher order modulation is  $> \frac{1}{2}$  dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is  $> 1.45$  W/kg.
8. According to 5.3 of KDB 941225 D05, that about the test reduction for other channel bandwidth, if the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is  $> \frac{1}{2}$  dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is  $> 1.45$  W/kg, then SAR need to test.
9. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing; therefore, the requirement for H, M, and L channels may not fully apply.

### <FDD Setup >

All SAR measurements for LTE were performed using the Anritsu MT8820C. A closed loop power control setting allowed the UE to transmit at the maximum output power during the SAR measurements. Configure the basestation to support LTE tests in respect to the 3GPP 36.521-1, and set ch , RB allocation number ,RB allocation offset , and send continuously Up power control commands to the device.

MPR was enabled for this device. A-MPR was disabled for all SAR test measurements.

### <TDD Setup >

All SAR measurements for LTE were performed using the Anritsu MT8820C. A closed loop power control setting allowed the UE to transmit at the maximum output power during the SAR measurements. Configure the basestation to support LTE tests in respect to the 3GPP 36.521-1, and set ch , TDD mode , RB allocation number ,RB allocation offset , and send continuously Up power control commands to the device.

MPR was enabled for this device. A-MPR was disabled for all SAR test measurements.

For 3GPP table 4.2.1 as below, support configurations and worst-case UpPTS information into the table.

**3GPP Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).**

| Special subframe configuration  | Normal cyclic prefix in downlink |                                |                                     | Extended cyclic prefix in downlink  |                                |                                  | EUT Support Special subframe        | Worst case UpPTS         |
|---------------------------------|----------------------------------|--------------------------------|-------------------------------------|-------------------------------------|--------------------------------|----------------------------------|-------------------------------------|--------------------------|
|                                 | DwPTS                            | UpPTS                          |                                     | DwPTS                               | UpPTS                          |                                  |                                     |                          |
|                                 |                                  | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink    |                                     | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |                                     |                          |
| 0                               | 6592×Ts                          | 2192×Ts                        | 2560×Ts                             | 7680×Ts                             | 2192×Ts                        | 2560×Ts                          | <input type="checkbox"/>            | <input type="checkbox"/> |
| 1                               | 19760×Ts                         |                                |                                     | 20480×Ts                            |                                |                                  | <input type="checkbox"/>            | <input type="checkbox"/> |
| 2                               | 21952×Ts                         |                                |                                     | 23040×Ts                            |                                |                                  | <input type="checkbox"/>            | <input type="checkbox"/> |
| 3                               | 24144×Ts                         |                                |                                     | 25600×Ts                            |                                |                                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4                               | 26336×Ts                         |                                |                                     | 7680×Ts                             |                                |                                  | 4384×Ts                             | 5120×Ts                  |
| 5                               | 6592×Ts                          | 20480×Ts                       | <input type="checkbox"/>            | <input type="checkbox"/>            |                                |                                  |                                     |                          |
| 6                               | 19760×Ts                         | 23040×Ts                       | <input type="checkbox"/>            | <input type="checkbox"/>            |                                |                                  |                                     |                          |
| 7                               | 21952×Ts                         | 12800×Ts                       | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                |                                  |                                     |                          |
| 8                               | 24144×Ts                         | -                              | -                                   | -                                   | <input type="checkbox"/>       | <input type="checkbox"/>         |                                     |                          |
| 9                               | 13168×Ts                         | -                              | -                                   | -                                   | <input type="checkbox"/>       | <input type="checkbox"/>         |                                     |                          |
| Duty cycle <sub>(maximum)</sub> |                                  |                                |                                     |                                     |                                |                                  |                                     | 43.33 %                  |

The EUT only supports the 40 % case, which is Table 4.2.2, configuration #1 below.

| Uplink-downlink configuration | Downlink-to-Uplink Switch-point periodicity | Subframe number |   |   |   |   |   |   |   |   |   | Type of EUT                         |
|-------------------------------|---------------------------------------------|-----------------|---|---|---|---|---|---|---|---|---|-------------------------------------|
|                               |                                             | 0               | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |                                     |
| 0                             | 5ms                                         | D               | S | U | U | U | D | S | U | U | U | <input type="checkbox"/>            |
| 1                             | 5ms                                         | D               | S | U | U | D | D | S | U | U | D | <input checked="" type="checkbox"/> |
| 2                             | 5ms                                         | D               | S | U | D | D | D | S | U | D | D | <input type="checkbox"/>            |
| 3                             | 10ms                                        | D               | S | U | U | U | D | D | D | D | D | <input type="checkbox"/>            |
| 4                             | 10ms                                        | D               | S | U | U | D | D | D | D | D | D | <input type="checkbox"/>            |
| 5                             | 10ms                                        | D               | S | U | D | D | D | D | D | D | D | <input type="checkbox"/>            |
| 6                             | 5ms                                         | D               | S | U | U | U | D | S | U | U | D | <input type="checkbox"/>            |

#### <Maximum power reduction (MPR) >

Identify the LTE voice/data requirements in each operating mode and exposure condition with respect to head and body test configurations, antenna locations, handset flip-cover or slide positions, antenna diversity conditions etc.

The voice and data transmission:

- ◆ Data only device.

Identify if Maximum Power Reduction (MPR) is optional or mandatory, i.e. built-in by design:

- ◆ Maximum Power Reduction (MPR) is mandatory, i.e. built-in by design.
- ◆ A-MPR (additional MPR) must be disabled
- ◆ A-MPR was disabled during testing.

| Maximum Power Reduction (MPR) for Power Class 1, 2 and 3      |         |       |       |        |        |       |          |
|---------------------------------------------------------------|---------|-------|-------|--------|--------|-------|----------|
| Channel bandwidth / Transmission bandwidth configuration (RB) |         |       |       |        |        |       |          |
| Modulation                                                    | 1.4 MHz | 3 MHz | 5 MHz | 10 MHz | 15 MHz | 20MHz | MPR (dB) |
| QPSK                                                          | > 5     | > 4   | > 8   | > 12   | > 16   | > 18  | ≤ 1      |
| 16 QAM                                                        | ≤ 5     | ≤ 4   | ≤ 8   | ≤ 12   | ≤ 16   | ≤ 18  | ≤ 1      |
| 16 QAM                                                        | > 5     | > 4   | > 8   | > 12   | > 16   | > 18  | ≤ 2      |
| 64 QAM                                                        | ≤ 5     | ≤ 4   | ≤ 8   | ≤ 12   | ≤ 16   | ≤ 18  | ≤ 2      |
| 64 QAM                                                        | > 5     | > 4   | > 8   | > 12   | > 16   | > 18  | ≤ 3      |
| 256 QAM                                                       | ≥ 1     |       |       |        |        |       | ≤ 5      |

## 11.2.5 Proximity Sensor

### 11.2.5.1 Proximity Sensor Evaluation and Test

The device supports WWAN, WLAN, and Bluetooth capabilities. It is designed with a proximity sensor which can trigger/not trigger power reduction for WCDMA and LTE on Bottom Face, Side 2 and Bottom of Laptop of DUT for SAR compliance. The power reduction is not implemented in the other RF capability.

### 11.2.5.2 Procedures for determining proximity sensor triggering distances

The proximity sensor triggering distance was determined per KDB 616217 for rear face and applicable edge.

Due to the proximity sensor is combined with antenna in one component, the procedure for determining antenna and proximity sensor coverage is not required.

Summary for power verification per distance is tabulated in the below table.

| Bottom Face (Near to Far) |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Gap (mm)                  | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    |
| Band                      | on    | on    | on    | on    | on    | on    | on    | off   | off   | off   | off   |
| WCDMA Band II             | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 24.50 | 24.50 | 24.50 | 24.50 |
| WCDMA Band IV             | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 24.50 | 24.50 | 24.50 | 24.50 |
| WCDMA Band V              | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 24.50 | 24.50 | 24.50 | 24.50 |
| LTE Band2                 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band4                 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band5                 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band7                 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band12                | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band13                | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band17                | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band26                | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band30                | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band38                | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band41                | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band66                | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 24.00 | 24.00 | 24.00 | 24.00 |

| Bottom Face (Far to Near) |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Gap (mm)                  | 19    | 18    | 17    | 16    | 15    | 14    | 13    | 12    | 11    | 10    | 9     |
| Band                      | off   | off   | off   | off   | on    | on    | on    | on    | on    | on    | on    |
| WCDMA Band II             | 24.50 | 24.50 | 24.50 | 24.50 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 |
| WCDMA Band IV             | 24.50 | 24.50 | 24.50 | 24.50 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 |
| WCDMA Band V              | 24.50 | 24.50 | 24.50 | 24.50 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 |
| LTE Band2                 | 24.00 | 24.00 | 24.00 | 24.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 |
| LTE Band4                 | 24.00 | 24.00 | 24.00 | 24.00 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 |
| LTE Band5                 | 24.00 | 24.00 | 24.00 | 24.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 |
| LTE Band7                 | 24.00 | 24.00 | 24.00 | 24.00 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 |
| LTE Band12                | 24.00 | 24.00 | 24.00 | 24.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 |
| LTE Band13                | 24.00 | 24.00 | 24.00 | 24.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 |
| LTE Band17                | 24.00 | 24.00 | 24.00 | 24.00 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 |
| LTE Band26                | 24.00 | 24.00 | 24.00 | 24.00 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 |
| LTE Band30                | 24.00 | 24.00 | 24.00 | 24.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| LTE Band38                | 24.00 | 24.00 | 24.00 | 24.00 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 |
| LTE Band41                | 24.00 | 24.00 | 24.00 | 24.00 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 |
| LTE Band66                | 24.00 | 24.00 | 24.00 | 24.00 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 |

| Side 2(Near to Far) |       |       |       |       |       |       |       |       |       |       |       |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Gap (mm)            | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    |
| Band                | on    | on    | on    | on    | on    | on    | on    | off   | off   | off   | off   |
| WCDMA Band II       | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 24.50 | 24.50 | 24.50 | 24.50 |
| WCDMA Band IV       | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 24.50 | 24.50 | 24.50 | 24.50 |
| LTE Band2           | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band4           | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band7           | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band38          | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band41          | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band66          | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 24.00 | 24.00 | 24.00 | 24.00 |

| Side 2(Far to Near) |       |       |       |       |       |       |       |       |       |       |       |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Gap (mm)            | 19    | 18    | 17    | 16    | 15    | 14    | 13    | 12    | 11    | 10    | 9     |
| Band                | off   | off   | off   | off   | on    | on    | on    | on    | on    | on    | on    |
| WCDMA Band II       | 24.50 | 24.50 | 24.50 | 24.50 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 |
| WCDMA Band IV       | 24.50 | 24.50 | 24.50 | 24.50 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 |
| LTE Band2           | 24.00 | 24.00 | 24.00 | 24.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 |
| LTE Band4           | 24.00 | 24.00 | 24.00 | 24.00 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 |
| LTE Band7           | 24.00 | 24.00 | 24.00 | 24.00 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 |
| LTE Band38          | 24.00 | 24.00 | 24.00 | 24.00 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 |
| LTE Band41          | 24.00 | 24.00 | 24.00 | 24.00 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 |
| LTE Band66          | 24.00 | 24.00 | 24.00 | 24.00 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 |



| Bottom of Laptop (Near to Far) |       |       |       |       |       |       |       |       |       |       |       |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Gap (mm)                       | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    |
| Band                           | on    | on    | on    | on    | on    | on    | on    | off   | off   | off   | off   |
| WCDMA Band II                  | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 24.50 | 24.50 | 24.50 | 24.50 |
| WCDMA Band IV                  | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 24.50 | 24.50 | 24.50 | 24.50 |
| WCDMA Band V                   | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 24.50 | 24.50 | 24.50 | 24.50 |
| LTE Band2                      | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band4                      | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band5                      | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band7                      | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band12                     | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band13                     | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band17                     | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band26                     | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band30                     | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band38                     | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band41                     | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 24.00 | 24.00 | 24.00 | 24.00 |
| LTE Band66                     | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 24.00 | 24.00 | 24.00 | 24.00 |

| Bottom of Laptop (Far to Near) |       |       |       |       |       |       |       |       |       |       |       |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Gap (mm)                       | 19    | 18    | 17    | 16    | 15    | 14    | 13    | 12    | 11    | 10    | 9     |
| Band                           | off   | off   | off   | off   | on    | on    | on    | on    | on    | on    | on    |
| WCDMA Band II                  | 24.50 | 24.50 | 24.50 | 24.50 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 |
| WCDMA Band IV                  | 24.50 | 24.50 | 24.50 | 24.50 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 | 18.00 |
| WCDMA Band V                   | 24.50 | 24.50 | 24.50 | 24.50 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 |
| LTE Band2                      | 24.00 | 24.00 | 24.00 | 24.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 | 19.00 |
| LTE Band4                      | 24.00 | 24.00 | 24.00 | 24.00 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 |
| LTE Band5                      | 24.00 | 24.00 | 24.00 | 24.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 |
| LTE Band7                      | 24.00 | 24.00 | 24.00 | 24.00 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 |
| LTE Band12                     | 24.00 | 24.00 | 24.00 | 24.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 | 23.00 |
| LTE Band13                     | 24.00 | 24.00 | 24.00 | 24.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 |
| LTE Band17                     | 24.00 | 24.00 | 24.00 | 24.00 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 |
| LTE Band26                     | 24.00 | 24.00 | 24.00 | 24.00 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 |
| LTE Band30                     | 24.00 | 24.00 | 24.00 | 24.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| LTE Band38                     | 24.00 | 24.00 | 24.00 | 24.00 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 |
| LTE Band41                     | 24.00 | 24.00 | 24.00 | 24.00 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 | 20.50 |
| LTE Band66                     | 24.00 | 24.00 | 24.00 | 24.00 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 | 18.50 |

### 11.2.5.3 Procedures for determining tablet tilt angle influences to proximity sensor triggering

The influence of table tilt angles to proximity sensor triggering is determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom, at the smallest sensor triggering test distance determined in KDB 616217. Summary for proximity sensor tilt angle influence is shown in below table.

| WWAN Antenna _Trigger Distance Test (Bottom Face) |             |             |
|---------------------------------------------------|-------------|-------------|
| Sensor Triggering Distance (mm)                   |             |             |
| Actual Test                                       | Far to Near | Near to Far |
|                                                   | 15          | 15          |
| Average triggering distance                       | 15          | 15          |
| Sensor on distance                                | 15          | 15          |

| WWAN Antenna _Trigger Distance Test (Side 2) |             |             |
|----------------------------------------------|-------------|-------------|
| Sensor Triggering Distance (mm)              |             |             |
| Actual Test                                  | Far to Near | Near to Far |
|                                              | 15          | 15          |
| Average triggering distance                  | 15          | 15          |
| Sensor on distance                           | 15          | 15          |

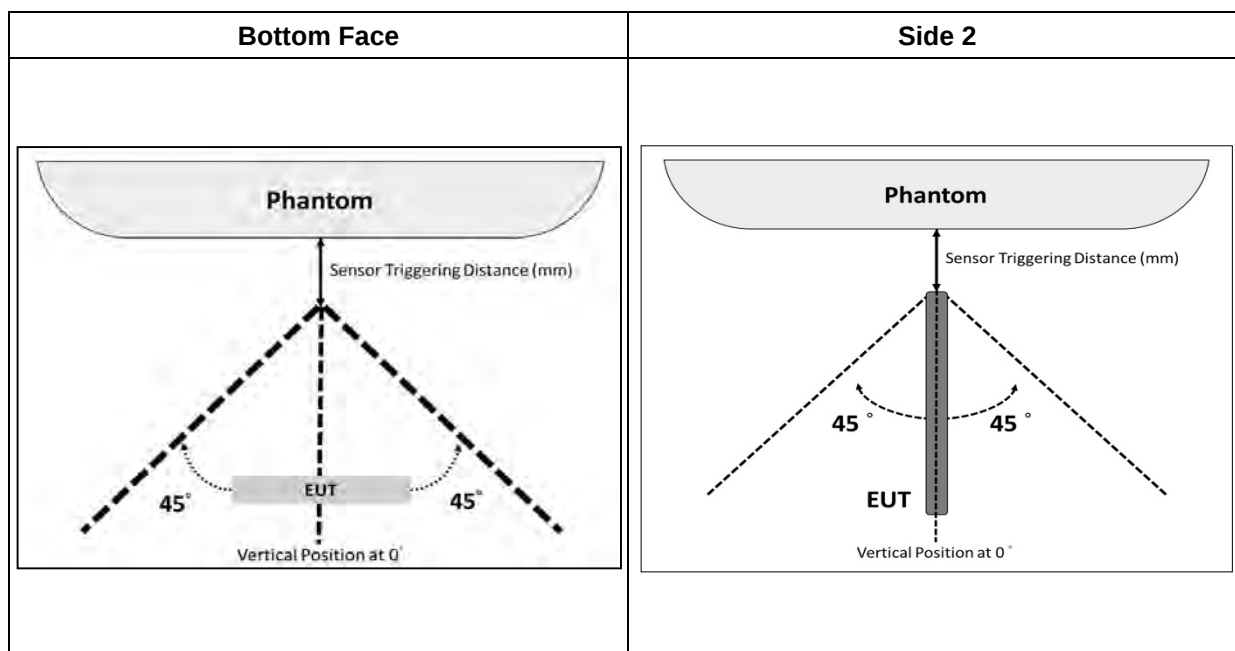
| WWAN Antenna _Trigger Distance Test (Bottom of Laptop) |             |             |
|--------------------------------------------------------|-------------|-------------|
| Sensor Triggering Distance (mm)                        |             |             |
| Actual Test                                            | Far to Near | Near to Far |
|                                                        | 15          | 15          |
| Average triggering distance                            | 15          | 15          |
| Sensor on distance                                     | 15          | 15          |

| WWAN Antenna _Trigger Distance Test (Bottom Face) |                                 |             |                      |
|---------------------------------------------------|---------------------------------|-------------|----------------------|
| Angle change                                      | Sensor Triggering Distance (mm) |             |                      |
|                                                   | Far to Near                     | Near to Far | Min trigger distance |
| 0 degree                                          | 15                              | 15          | 15                   |
| 10 degree                                         | Front toward to the phantom     |             | 15                   |
| 20 degree                                         |                                 |             | 15                   |
| 30 degree                                         |                                 |             | 15                   |
| 40 degree                                         |                                 |             | 15                   |
| 45 degree                                         |                                 |             | 15                   |
| -10 degree                                        | Back toward to the phantom      |             | 15                   |
| -20 degree                                        |                                 |             | 15                   |
| -30 degree                                        |                                 |             | 15                   |
| -40 degree                                        |                                 |             | 15                   |
| -45 degree                                        |                                 |             | 15                   |



| WWAN Antenna _Trigger Distance Test (Side 2) |                                 |             |                      |
|----------------------------------------------|---------------------------------|-------------|----------------------|
| Angle change                                 | Sensor Triggering Distance (mm) |             |                      |
|                                              | Far to Near                     | Near to Far | Min trigger distance |
| 0 degree                                     | 15                              | 15          | 15                   |
| 10 degree                                    | Front toward to the phantom     |             | 15                   |
| 20 degree                                    |                                 |             | 15                   |
| 30 degree                                    |                                 |             | 15                   |
| 40 degree                                    |                                 |             | 15                   |
| 45 degree                                    |                                 |             | 15                   |
| -10 degree                                   | Back toward to the phantom      |             | 15                   |
| -20 degree                                   |                                 |             | 15                   |
| -30 degree                                   |                                 |             | 15                   |
| -40 degree                                   |                                 |             | 15                   |
| -45 degree                                   |                                 |             | 15                   |

| WWAN Antenna _Trigger Distance Test (Bottom of Laptop) |                                 |             |                      |
|--------------------------------------------------------|---------------------------------|-------------|----------------------|
| Angle change                                           | Sensor Triggering Distance (mm) |             |                      |
|                                                        | Far to Near                     | Near to Far | Min trigger distance |
| 0 degree                                               | 15                              | 15          | 15                   |
| 10 degree                                              | Front toward to the phantom     |             | 15                   |
| 20 degree                                              |                                 |             | 15                   |
| 30 degree                                              |                                 |             | 15                   |
| 40 degree                                              |                                 |             | 15                   |
| 45 degree                                              |                                 |             | 15                   |
| -10 degree                                             | Back toward to the phantom      |             | 15                   |
| -20 degree                                             |                                 |             | 15                   |
| -30 degree                                             |                                 |             | 15                   |
| -40 degree                                             |                                 |             | 15                   |
| -45 degree                                             |                                 |             | 15                   |



#### 11.2.5.4 Proximity sensor triggering testing summary

The smallest power sensor triggering distance is 15 mm for DUT.

For the influence of tilt angle, test performed at the above separation distance until proximity sensor no longer release and the output power remained in reduced mode. The smallest separation distance for tilt angle influence is 15 mm consequently, and then subtract 1 mm for SAR measurement.

Considering SAR compliance and the conservative distance for sensor triggering, SAR test with power reduction was performed at 0 mm for Bottom Face, Side 2 and Bottom of Laptop, and performed without power reduction at 14 mm.

The power reduction is determined by proximity sensor input, and the proximity sensor function is set by manual operation with engineering testing software during SAR measurement.

### 11.3 Conducted Power Measurements

| Band     | Modulation | Date Rate<br>or<br>Sub-test | CH      |      | Frequency | Avg Conducted<br>power (dBm) | Tune up (dBm) |
|----------|------------|-----------------------------|---------|------|-----------|------------------------------|---------------|
| WCDMA II | RMC12.2K   | ---                         | Lowest  | 9262 | 1852.4    | 23.37                        | 24.50         |
|          |            |                             | Middle  | 9400 | 1880.0    | 23.50                        | 24.50         |
|          |            |                             | Highest | 9538 | 1907.6    | 23.42                        | 24.50         |
| HSDPA II | QPSK       | 1                           | Lowest  | 9262 | 1852.4    | 22.89                        | 24.50         |
|          |            |                             | Middle  | 9400 | 1880.0    | 23.28                        | 24.50         |
|          |            |                             | Highest | 9538 | 1907.6    | 23.21                        | 24.50         |
|          |            | 2                           | Lowest  | 9262 | 1852.4    | 22.87                        | 24.50         |
|          |            |                             | Middle  | 9400 | 1880.0    | 23.22                        | 24.50         |
|          |            |                             | Highest | 9538 | 1907.6    | 23.12                        | 24.50         |
|          |            | 3                           | Lowest  | 9262 | 1852.4    | 22.40                        | 24.00         |
|          |            |                             | Middle  | 9400 | 1880.0    | 22.79                        | 24.00         |
|          |            |                             | Highest | 9538 | 1907.6    | 22.67                        | 24.00         |
|          |            | 4                           | Lowest  | 9262 | 1852.4    | 22.40                        | 24.00         |
|          |            |                             | Middle  | 9400 | 1880.0    | 22.79                        | 24.00         |
|          |            |                             | Highest | 9538 | 1907.6    | 22.70                        | 24.00         |
| HSUPA II | QPSK       | 1                           | Lowest  | 9262 | 1852.4    | 22.90                        | 24.50         |
|          |            |                             | Middle  | 9400 | 1880.0    | 23.23                        | 24.50         |
|          |            |                             | Highest | 9538 | 1907.6    | 23.17                        | 24.50         |
|          |            | 2                           | Lowest  | 9262 | 1852.4    | 20.85                        | 22.50         |
|          |            |                             | Middle  | 9400 | 1880.0    | 21.22                        | 22.50         |
|          |            |                             | Highest | 9538 | 1907.6    | 21.15                        | 22.50         |
|          |            | 3                           | Lowest  | 9262 | 1852.4    | 21.87                        | 23.50         |
|          |            |                             | Middle  | 9400 | 1880.0    | 22.26                        | 23.50         |
|          |            |                             | Highest | 9538 | 1907.6    | 22.18                        | 23.50         |
|          |            | 4                           | Lowest  | 9262 | 1852.4    | 20.88                        | 22.50         |
|          |            |                             | Middle  | 9400 | 1880.0    | 21.25                        | 22.50         |
|          |            |                             | Highest | 9538 | 1907.6    | 21.17                        | 22.50         |
|          |            | 5                           | Lowest  | 9262 | 1852.4    | 22.90                        | 24.50         |
|          |            |                             | Middle  | 9400 | 1880.0    | 23.22                        | 24.50         |
|          |            |                             | Highest | 9538 | 1907.6    | 23.19                        | 24.50         |

| Band     | Modulation | Date Rate<br>or<br>Sub-test | CH      |      | Frequency<br>(MHz) | Avg Conducted<br>power (dBm) | Tune up (dBm) |
|----------|------------|-----------------------------|---------|------|--------------------|------------------------------|---------------|
| WCDMA IV | RMC12.2K   | ---                         | Lowest  | 1312 | 1712.4             | 23.69                        | 24.50         |
|          |            |                             | Middle  | 1413 | 1732.6             | 23.62                        | 24.50         |
|          |            |                             | Highest | 1513 | 1752.6             | 23.74                        | 24.50         |
| HSDPA IV | QPSK       | 1                           | Lowest  | 1312 | 1712.4             | 23.46                        | 24.50         |
|          |            |                             | Middle  | 1413 | 1732.6             | 23.39                        | 24.50         |
|          |            |                             | Highest | 1513 | 1752.6             | 23.63                        | 24.50         |
|          |            | 2                           | Lowest  | 1312 | 1712.4             | 23.45                        | 24.50         |
|          |            |                             | Middle  | 1413 | 1732.6             | 23.39                        | 24.50         |
|          |            |                             | Highest | 1513 | 1752.6             | 23.60                        | 24.50         |
|          |            | 3                           | Lowest  | 1312 | 1712.4             | 22.96                        | 24.00         |
|          |            |                             | Middle  | 1413 | 1732.6             | 22.95                        | 24.00         |
|          |            |                             | Highest | 1513 | 1752.6             | 23.08                        | 24.00         |
|          |            | 4                           | Lowest  | 1312 | 1712.4             | 22.97                        | 24.00         |
|          |            |                             | Middle  | 1413 | 1732.6             | 22.90                        | 24.00         |
|          |            |                             | Highest | 1513 | 1752.6             | 23.11                        | 24.00         |
| HSUPA IV |            | 1                           | Lowest  | 1312 | 1712.4             | 23.46                        | 24.50         |
|          |            |                             | Middle  | 1413 | 1732.6             | 23.46                        | 24.50         |
|          |            |                             | Highest | 1513 | 1752.6             | 23.58                        | 24.50         |
|          |            | 2                           | Lowest  | 1312 | 1712.4             | 21.49                        | 22.50         |
|          |            |                             | Middle  | 1413 | 1732.6             | 21.44                        | 22.50         |
|          |            |                             | Highest | 1513 | 1752.6             | 21.64                        | 22.50         |
|          |            | 3                           | Lowest  | 1312 | 1712.4             | 22.41                        | 23.50         |
|          |            |                             | Middle  | 1413 | 1732.6             | 22.46                        | 23.50         |
|          |            |                             | Highest | 1513 | 1752.6             | 22.62                        | 23.50         |
|          |            | 4                           | Lowest  | 1312 | 1712.4             | 21.48                        | 22.50         |
|          |            |                             | Middle  | 1413 | 1732.6             | 21.45                        | 22.50         |
|          |            |                             | Highest | 1513 | 1752.6             | 21.62                        | 22.50         |
|          |            | 5                           | Lowest  | 1312 | 1712.4             | 23.48                        | 24.50         |
|          |            |                             | Middle  | 1413 | 1732.6             | 23.47                        | 24.50         |
|          |            |                             | Highest | 1513 | 1752.6             | 23.56                        | 24.50         |

| Band    | Modulation | Date Rate<br>or<br>Sub-test | CH      |      | Frequency<br>(MHz) | Avg Conducted<br>power (dBm) | Tune up (dBm) |
|---------|------------|-----------------------------|---------|------|--------------------|------------------------------|---------------|
| WCDMA V | RMC12.2K   | ---                         | Lowest  | 4132 | 826.4              | 23.32                        | 24.50         |
|         |            |                             | Middle  | 4182 | 836.4              | 23.59                        | 24.50         |
|         |            |                             | Highest | 4233 | 846.6              | 23.42                        | 24.50         |
| HSDPA V | QPSK       | 1                           | Lowest  | 4132 | 826.4              | 22.69                        | 24.50         |
|         |            |                             | Middle  | 4182 | 836.4              | 22.82                        | 24.50         |
|         |            |                             | Highest | 4233 | 846.6              | 22.99                        | 24.50         |
|         |            | 2                           | Lowest  | 4132 | 826.4              | 22.68                        | 24.50         |
|         |            |                             | Middle  | 4182 | 836.4              | 22.84                        | 24.50         |
|         |            |                             | Highest | 4233 | 846.6              | 23.00                        | 24.50         |
|         |            | 3                           | Lowest  | 4132 | 826.4              | 22.15                        | 24.00         |
|         |            |                             | Middle  | 4182 | 836.4              | 22.32                        | 24.00         |
|         |            |                             | Highest | 4233 | 846.6              | 22.42                        | 24.00         |
|         |            | 4                           | Lowest  | 4132 | 826.4              | 22.15                        | 24.00         |
|         |            |                             | Middle  | 4182 | 836.4              | 22.31                        | 24.00         |
|         |            |                             | Highest | 4233 | 846.6              | 22.52                        | 24.00         |
| HSUPA V | QPSK       | 1                           | Lowest  | 4132 | 826.4              | 22.69                        | 24.50         |
|         |            |                             | Middle  | 4182 | 836.4              | 22.87                        | 24.50         |
|         |            |                             | Highest | 4233 | 846.6              | 22.93                        | 24.50         |
|         |            | 2                           | Lowest  | 4132 | 826.4              | 20.71                        | 22.50         |
|         |            |                             | Middle  | 4182 | 836.4              | 20.85                        | 22.50         |
|         |            |                             | Highest | 4233 | 846.6              | 20.98                        | 22.50         |
|         |            | 3                           | Lowest  | 4132 | 826.4              | 21.72                        | 23.50         |
|         |            |                             | Middle  | 4182 | 836.4              | 21.91                        | 23.50         |
|         |            |                             | Highest | 4233 | 846.6              | 21.97                        | 23.50         |
|         |            | 4                           | Lowest  | 4132 | 826.4              | 20.72                        | 22.50         |
|         |            |                             | Middle  | 4182 | 836.4              | 20.91                        | 22.50         |
|         |            |                             | Highest | 4233 | 846.6              | 20.93                        | 22.50         |
|         |            | 5                           | Lowest  | 4132 | 826.4              | 22.65                        | 24.50         |
|         |            |                             | Middle  | 4182 | 836.4              | 22.91                        | 24.50         |
|         |            |                             | Highest | 4233 | 846.6              | 22.97                        | 24.50         |

| LTE Band 2                  |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 18607                       | 18900 | 19193  | Channel       |            |           |                      |                       |
| 1850.7                      | 1880  | 1909.3 | Freq. (MHz)   |            |           |                      |                       |
| 22.30                       | 22.41 | 22.11  | 24            | QPSK       | 1.4MHz    | 1                    | 0                     |
| 22.27                       | 22.31 | 22.05  | 24            | QPSK       | 1.4MHz    | 1                    | 2                     |
| 22.39                       | 22.27 | 22.10  | 24            | QPSK       | 1.4MHz    | 1                    | 5                     |
| 22.35                       | 22.36 | 22.08  | 24            | QPSK       | 1.4MHz    | 3                    | 0                     |
| 22.24                       | 22.39 | 22.09  | 24            | QPSK       | 1.4MHz    | 3                    | 1                     |
| 22.25                       | 22.33 | 22.08  | 24            | QPSK       | 1.4MHz    | 3                    | 3                     |
| 21.26                       | 21.30 | 21.02  | 23            | QPSK       | 1.4MHz    | 6                    | 0                     |
| 21.72                       | 21.86 | 21.43  | 23            | 16QAM      | 1.4MHz    | 1                    | 0                     |
| 21.48                       | 21.83 | 21.48  | 23            | 16QAM      | 1.4MHz    | 1                    | 2                     |
| 21.65                       | 21.90 | 21.57  | 23            | 16QAM      | 1.4MHz    | 1                    | 5                     |
| 21.43                       | 21.46 | 21.08  | 23            | 16QAM      | 1.4MHz    | 3                    | 0                     |
| 21.40                       | 21.33 | 21.20  | 23            | 16QAM      | 1.4MHz    | 3                    | 1                     |
| 21.22                       | 21.26 | 21.08  | 23            | 16QAM      | 1.4MHz    | 3                    | 3                     |
| 20.27                       | 20.34 | 20.03  | 22            | 16QAM      | 1.4MHz    | 6                    | 0                     |

| LTE Band 2                  |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 18615                       | 18900 | 19185  | Channel       |            |           |                      |                       |
| 1851.5                      | 1880  | 1908.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.12                       | 22.21 | 22.15  | 24            | QPSK       | 3MHz      | 1                    | 0                     |
| 22.11                       | 22.29 | 22.06  | 24            | QPSK       | 3MHz      | 1                    | 7                     |
| 22.10                       | 22.33 | 22.03  | 24            | QPSK       | 3MHz      | 1                    | 14                    |
| 21.07                       | 21.29 | 21.02  | 23            | QPSK       | 3MHz      | 8                    | 0                     |
| 21.07                       | 21.26 | 21.02  | 23            | QPSK       | 3MHz      | 8                    | 3                     |
| 21.08                       | 21.23 | 21.00  | 23            | QPSK       | 3MHz      | 8                    | 7                     |
| 21.05                       | 21.22 | 21.00  | 23            | QPSK       | 3MHz      | 15                   | 0                     |
| 21.53                       | 21.57 | 21.43  | 23            | 16QAM      | 3MHz      | 1                    | 0                     |
| 21.02                       | 21.39 | 21.22  | 23            | 16QAM      | 3MHz      | 1                    | 7                     |
| 21.14                       | 21.48 | 21.02  | 23            | 16QAM      | 3MHz      | 1                    | 14                    |
| 20.24                       | 20.40 | 20.06  | 22            | 16QAM      | 3MHz      | 8                    | 0                     |
| 20.11                       | 20.31 | 20.03  | 22            | 16QAM      | 3MHz      | 8                    | 3                     |
| 20.11                       | 20.28 | 20.03  | 22            | 16QAM      | 3MHz      | 8                    | 7                     |
| 20.16                       | 20.24 | 20.08  | 22            | 16QAM      | 3MHz      | 15                   | 0                     |



| LTE Band 2                  |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 18625                       | 18900 | 19175  | Channel       |            |           |                      |                       |
| 1852.5                      | 1880  | 1907.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.48                       | 22.56 | 22.43  | 24            | QPSK       | 5MHz      | 1                    | 0                     |
| 22.54                       | 22.44 | 22.30  | 24            | QPSK       | 5MHz      | 1                    | 12                    |
| 22.25                       | 22.62 | 22.24  | 24            | QPSK       | 5MHz      | 1                    | 24                    |
| 21.49                       | 21.65 | 21.32  | 23            | QPSK       | 5MHz      | 12                   | 0                     |
| 21.46                       | 21.66 | 21.35  | 23            | QPSK       | 5MHz      | 12                   | 6                     |
| 21.40                       | 21.62 | 21.33  | 23            | QPSK       | 5MHz      | 12                   | 13                    |
| 21.48                       | 21.60 | 21.40  | 23            | QPSK       | 5MHz      | 25                   | 0                     |
| 21.75                       | 22.18 | 21.50  | 23            | 16QAM      | 5MHz      | 1                    | 0                     |
| 21.89                       | 21.62 | 21.94  | 23            | 16QAM      | 5MHz      | 1                    | 12                    |
| 21.93                       | 21.87 | 21.65  | 23            | 16QAM      | 5MHz      | 1                    | 24                    |
| 20.51                       | 20.72 | 20.23  | 22            | 16QAM      | 5MHz      | 12                   | 0                     |
| 20.51                       | 20.66 | 20.47  | 22            | 16QAM      | 5MHz      | 12                   | 6                     |
| 20.36                       | 20.78 | 20.45  | 22            | 16QAM      | 5MHz      | 12                   | 13                    |
| 20.53                       | 20.66 | 20.42  | 22            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 2                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 18650                       | 18900 | 19150 | Channel       |            |           |                      |                       |
| 1855                        | 1880  | 1905  | Freq. (MHz)   |            |           |                      |                       |
| 22.42                       | 22.60 | 22.13 | 24            | QPSK       | 10MHz     | 1                    | 0                     |
| 22.34                       | 22.51 | 22.31 | 24            | QPSK       | 10MHz     | 1                    | 24                    |
| 22.37                       | 22.54 | 22.27 | 24            | QPSK       | 10MHz     | 1                    | 49                    |
| 21.51                       | 21.71 | 21.27 | 23            | QPSK       | 10MHz     | 25                   | 0                     |
| 21.43                       | 21.68 | 21.29 | 23            | QPSK       | 10MHz     | 25                   | 12                    |
| 21.32                       | 21.56 | 21.37 | 23            | QPSK       | 10MHz     | 25                   | 25                    |
| 21.39                       | 21.57 | 21.32 | 23            | QPSK       | 10MHz     | 50                   | 0                     |
| 21.88                       | 21.59 | 21.76 | 23            | 16QAM      | 10MHz     | 1                    | 0                     |
| 21.76                       | 21.79 | 21.40 | 23            | 16QAM      | 10MHz     | 1                    | 24                    |
| 21.01                       | 21.99 | 21.79 | 23            | 16QAM      | 10MHz     | 1                    | 49                    |
| 20.53                       | 20.80 | 20.31 | 22            | 16QAM      | 10MHz     | 25                   | 0                     |
| 20.53                       | 20.69 | 20.38 | 22            | 16QAM      | 10MHz     | 25                   | 12                    |
| 20.39                       | 20.57 | 20.51 | 22            | 16QAM      | 10MHz     | 25                   | 25                    |
| 20.46                       | 20.60 | 20.44 | 22            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 2                  |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 18675                       | 18900 | 19125  | Channel       |            |           |                      |                       |
| 1857.5                      | 1880  | 1902.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.43                       | 22.50 | 22.15  | 24            | QPSK       | 15MHz     | 1                    | 0                     |
| 22.12                       | 22.47 | 22.20  | 24            | QPSK       | 15MHz     | 1                    | 37                    |
| 22.11                       | 22.35 | 22.17  | 24            | QPSK       | 15MHz     | 1                    | 74                    |
| 21.29                       | 21.55 | 21.13  | 23            | QPSK       | 15MHz     | 36                   | 0                     |
| 21.16                       | 21.57 | 21.27  | 23            | QPSK       | 15MHz     | 36                   | 19                    |
| 21.12                       | 21.49 | 21.28  | 23            | QPSK       | 15MHz     | 36                   | 39                    |
| 21.11                       | 21.48 | 21.20  | 23            | QPSK       | 15MHz     | 75                   | 0                     |
| 21.65                       | 21.61 | 21.16  | 23            | 16QAM      | 15MHz     | 1                    | 0                     |
| 21.27                       | 21.98 | 21.39  | 23            | 16QAM      | 15MHz     | 1                    | 37                    |
| 21.51                       | 21.67 | 21.45  | 23            | 16QAM      | 15MHz     | 1                    | 74                    |
| 20.31                       | 20.69 | 20.21  | 22            | 16QAM      | 15MHz     | 36                   | 0                     |
| 20.16                       | 20.71 | 20.22  | 22            | 16QAM      | 15MHz     | 36                   | 19                    |
| 20.16                       | 20.57 | 20.31  | 22            | 16QAM      | 15MHz     | 36                   | 39                    |
| 20.15                       | 20.54 | 20.48  | 22            | 16QAM      | 15MHz     | 75                   | 0                     |

| LTE Band 2                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 18700                       | 18900 | 19100 | Channel       |            |           |                      |                       |
| 1860                        | 1880  | 1900  | Freq. (MHz)   |            |           |                      |                       |
| 22.53                       | 22.47 | 22.28 | 24            | QPSK       | 20MHz     | 1                    | 0                     |
| 22.48                       | 22.73 | 22.61 | 24            | QPSK       | 20MHz     | 1                    | 49                    |
| 22.40                       | 22.50 | 22.47 | 24            | QPSK       | 20MHz     | 1                    | 99                    |
| 21.51                       | 21.66 | 21.37 | 23            | QPSK       | 20MHz     | 50                   | 0                     |
| 21.24                       | 21.53 | 21.11 | 23            | QPSK       | 20MHz     | 50                   | 25                    |
| 21.25                       | 21.44 | 21.32 | 23            | QPSK       | 20MHz     | 50                   | 50                    |
| 21.33                       | 21.60 | 21.38 | 23            | QPSK       | 20MHz     | 100                  | 0                     |
| 21.60                       | 21.72 | 21.49 | 23            | 16QAM      | 20MHz     | 1                    | 0                     |
| 21.47                       | 21.32 | 21.45 | 23            | 16QAM      | 20MHz     | 1                    | 49                    |
| 21.75                       | 21.69 | 21.24 | 23            | 16QAM      | 20MHz     | 1                    | 99                    |
| 20.38                       | 20.61 | 20.21 | 22            | 16QAM      | 20MHz     | 50                   | 0                     |
| 20.32                       | 20.54 | 20.22 | 22            | 16QAM      | 20MHz     | 50                   | 25                    |
| 20.33                       | 20.50 | 20.33 | 22            | 16QAM      | 20MHz     | 50                   | 50                    |
| 20.37                       | 20.64 | 20.58 | 22            | 16QAM      | 20MHz     | 100                  | 0                     |

| LTE Band 4                  |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 19957                       | 20175  | 20393  | Channel       |            |           |                      |                       |
| 1710.7                      | 1732.5 | 1754.3 | Freq. (MHz)   |            |           |                      |                       |
| 22.65                       | 22.80  | 23.13  | 24            | QPSK       | 1.4MHz    | 1                    | 0                     |
| 22.80                       | 22.65  | 23.03  | 24            | QPSK       | 1.4MHz    | 1                    | 2                     |
| 22.76                       | 22.82  | 23.04  | 24            | QPSK       | 1.4MHz    | 1                    | 5                     |
| 22.70                       | 22.73  | 23.01  | 24            | QPSK       | 1.4MHz    | 3                    | 0                     |
| 22.74                       | 22.70  | 23.02  | 24            | QPSK       | 1.4MHz    | 3                    | 1                     |
| 22.77                       | 22.69  | 23.02  | 24            | QPSK       | 1.4MHz    | 3                    | 3                     |
| 21.78                       | 21.75  | 22.07  | 23            | QPSK       | 1.4MHz    | 6                    | 0                     |
| 21.97                       | 21.87  | 22.34  | 23            | 16QAM      | 1.4MHz    | 1                    | 0                     |
| 22.29                       | 21.78  | 22.44  | 23            | 16QAM      | 1.4MHz    | 1                    | 2                     |
| 22.14                       | 21.82  | 22.42  | 23            | 16QAM      | 1.4MHz    | 1                    | 5                     |
| 21.68                       | 21.96  | 21.99  | 23            | 16QAM      | 1.4MHz    | 3                    | 0                     |
| 21.84                       | 21.93  | 22.09  | 23            | 16QAM      | 1.4MHz    | 3                    | 1                     |
| 21.74                       | 21.77  | 22.17  | 23            | 16QAM      | 1.4MHz    | 3                    | 3                     |
| 20.81                       | 20.91  | 21.15  | 22            | 16QAM      | 1.4MHz    | 6                    | 0                     |

| LTE Band 4                  |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 19965                       | 20175  | 20385  | Channel       |            |           |                      |                       |
| 1711.5                      | 1732.5 | 1753.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.74                       | 22.63  | 22.82  | 24            | QPSK       | 3MHz      | 1                    | 0                     |
| 22.84                       | 22.59  | 23.03  | 24            | QPSK       | 3MHz      | 1                    | 7                     |
| 22.75                       | 22.53  | 22.88  | 24            | QPSK       | 3MHz      | 1                    | 14                    |
| 21.73                       | 21.66  | 22.03  | 23            | QPSK       | 3MHz      | 8                    | 0                     |
| 21.75                       | 21.64  | 21.98  | 23            | QPSK       | 3MHz      | 8                    | 3                     |
| 21.81                       | 21.62  | 22.07  | 23            | QPSK       | 3MHz      | 8                    | 7                     |
| 21.73                       | 21.64  | 21.97  | 23            | QPSK       | 3MHz      | 15                   | 0                     |
| 22.19                       | 21.83  | 22.30  | 23            | 16QAM      | 3MHz      | 1                    | 0                     |
| 22.22                       | 21.79  | 22.34  | 23            | 16QAM      | 3MHz      | 1                    | 7                     |
| 22.15                       | 21.79  | 22.23  | 23            | 16QAM      | 3MHz      | 1                    | 14                    |
| 20.86                       | 20.75  | 21.08  | 22            | 16QAM      | 3MHz      | 8                    | 0                     |
| 20.65                       | 20.75  | 20.98  | 22            | 16QAM      | 3MHz      | 8                    | 3                     |
| 20.87                       | 20.56  | 21.12  | 22            | 16QAM      | 3MHz      | 8                    | 7                     |
| 20.79                       | 20.62  | 21.15  | 22            | 16QAM      | 3MHz      | 15                   | 0                     |

| LTE Band 4                  |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 19975                       | 20175  | 20375  | Channel       |            |           |                      |                       |
| 1712.5                      | 1732.5 | 1752.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.73                       | 22.87  | 23.07  | 24            | QPSK       | 5MHz      | 1                    | 0                     |
| 22.89                       | 22.66  | 22.98  | 24            | QPSK       | 5MHz      | 1                    | 12                    |
| 22.96                       | 22.68  | 22.92  | 24            | QPSK       | 5MHz      | 1                    | 24                    |
| 21.78                       | 21.79  | 21.97  | 23            | QPSK       | 5MHz      | 12                   | 0                     |
| 21.78                       | 21.71  | 22.02  | 23            | QPSK       | 5MHz      | 12                   | 6                     |
| 21.84                       | 21.66  | 21.98  | 23            | QPSK       | 5MHz      | 12                   | 13                    |
| 21.84                       | 21.70  | 21.99  | 23            | QPSK       | 5MHz      | 25                   | 0                     |
| 22.01                       | 22.28  | 22.27  | 23            | 16QAM      | 5MHz      | 1                    | 0                     |
| 21.86                       | 22.20  | 22.09  | 23            | 16QAM      | 5MHz      | 1                    | 12                    |
| 21.73                       | 22.11  | 22.51  | 23            | 16QAM      | 5MHz      | 1                    | 24                    |
| 20.88                       | 20.80  | 20.93  | 22            | 16QAM      | 5MHz      | 12                   | 0                     |
| 20.83                       | 20.78  | 21.08  | 22            | 16QAM      | 5MHz      | 12                   | 6                     |
| 20.85                       | 20.78  | 21.06  | 22            | 16QAM      | 5MHz      | 12                   | 13                    |
| 20.82                       | 20.74  | 21.05  | 22            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 4                  |        |       |               |            |           |                      |                       |
|-----------------------------|--------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20000                       | 20175  | 20350 | Channel       |            |           |                      |                       |
| 1715                        | 1732.5 | 1750  | Freq. (MHz)   |            |           |                      |                       |
| 22.93                       | 23.05  | 22.82 | 24            | QPSK       | 10MHz     | 1                    | 0                     |
| 22.95                       | 22.77  | 22.99 | 24            | QPSK       | 10MHz     | 1                    | 24                    |
| 23.06                       | 22.78  | 22.98 | 24            | QPSK       | 10MHz     | 1                    | 49                    |
| 21.95                       | 21.88  | 21.97 | 23            | QPSK       | 10MHz     | 25                   | 0                     |
| 21.98                       | 21.77  | 22.01 | 23            | QPSK       | 10MHz     | 25                   | 12                    |
| 22.11                       | 21.64  | 21.97 | 23            | QPSK       | 10MHz     | 25                   | 25                    |
| 21.96                       | 21.71  | 22.00 | 23            | QPSK       | 10MHz     | 50                   | 0                     |
| 21.45                       | 22.43  | 22.26 | 23            | 16QAM      | 10MHz     | 1                    | 0                     |
| 22.29                       | 21.99  | 22.27 | 23            | 16QAM      | 10MHz     | 1                    | 24                    |
| 22.38                       | 21.92  | 21.87 | 23            | 16QAM      | 10MHz     | 1                    | 49                    |
| 21.07                       | 20.93  | 21.01 | 22            | 16QAM      | 10MHz     | 25                   | 0                     |
| 21.04                       | 20.77  | 21.11 | 22            | 16QAM      | 10MHz     | 25                   | 12                    |
| 21.03                       | 20.71  | 21.20 | 22            | 16QAM      | 10MHz     | 25                   | 25                    |
| 21.00                       | 20.79  | 21.03 | 22            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 4                  |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20025                       | 20175  | 20325  | Channel       |            |           |                      |                       |
| 1717.5                      | 1732.5 | 1747.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.76                       | 22.94  | 22.46  | 24            | QPSK       | 15MHz     | 1                    | 0                     |
| 22.94                       | 22.84  | 22.85  | 24            | QPSK       | 15MHz     | 1                    | 37                    |
| 22.80                       | 22.48  | 22.98  | 24            | QPSK       | 15MHz     | 1                    | 74                    |
| 21.90                       | 21.80  | 21.75  | 23            | QPSK       | 15MHz     | 36                   | 0                     |
| 21.99                       | 21.64  | 21.91  | 23            | QPSK       | 15MHz     | 36                   | 19                    |
| 21.95                       | 21.60  | 22.00  | 23            | QPSK       | 15MHz     | 36                   | 39                    |
| 22.02                       | 21.64  | 21.96  | 23            | QPSK       | 15MHz     | 75                   | 0                     |
| 21.94                       | 22.74  | 21.97  | 23            | 16QAM      | 15MHz     | 1                    | 0                     |
| 22.34                       | 21.93  | 22.18  | 23            | 16QAM      | 15MHz     | 1                    | 37                    |
| 22.10                       | 21.98  | 22.25  | 23            | 16QAM      | 15MHz     | 1                    | 74                    |
| 21.00                       | 20.87  | 20.79  | 22            | 16QAM      | 15MHz     | 36                   | 0                     |
| 21.12                       | 20.77  | 20.98  | 22            | 16QAM      | 15MHz     | 36                   | 19                    |
| 20.94                       | 20.64  | 21.06  | 22            | 16QAM      | 15MHz     | 36                   | 39                    |
| 21.05                       | 20.77  | 20.98  | 22            | 16QAM      | 15MHz     | 75                   | 0                     |

| LTE Band 4                  |        |       |               |            |           |                      |                       |
|-----------------------------|--------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20050                       | 20175  | 20300 | Channel       |            |           |                      |                       |
| 1720                        | 1732.5 | 1745  | Freq. (MHz)   |            |           |                      |                       |
| 22.92                       | 23.07  | 22.95 | 24            | QPSK       | 20MHz     | 1                    | 0                     |
| 23.07                       | 22.91  | 22.82 | 24            | QPSK       | 20MHz     | 1                    | 49                    |
| 22.94                       | 22.77  | 23.15 | 24            | QPSK       | 20MHz     | 1                    | 99                    |
| 21.98                       | 21.91  | 21.66 | 23            | QPSK       | 20MHz     | 50                   | 0                     |
| 21.95                       | 21.71  | 21.82 | 23            | QPSK       | 20MHz     | 50                   | 25                    |
| 21.94                       | 21.59  | 21.92 | 23            | QPSK       | 20MHz     | 50                   | 50                    |
| 22.04                       | 21.79  | 21.97 | 23            | QPSK       | 20MHz     | 100                  | 0                     |
| 22.06                       | 22.38  | 22.03 | 23            | 16QAM      | 20MHz     | 1                    | 0                     |
| 22.58                       | 21.89  | 21.97 | 23            | 16QAM      | 20MHz     | 1                    | 49                    |
| 22.14                       | 21.95  | 22.14 | 23            | 16QAM      | 20MHz     | 1                    | 99                    |
| 21.04                       | 20.92  | 20.70 | 22            | 16QAM      | 20MHz     | 50                   | 0                     |
| 21.00                       | 20.73  | 20.84 | 22            | 16QAM      | 20MHz     | 50                   | 25                    |
| 20.96                       | 20.71  | 20.95 | 22            | 16QAM      | 20MHz     | 50                   | 50                    |
| 21.01                       | 20.80  | 20.98 | 22            | 16QAM      | 20MHz     | 100                  | 0                     |

| LTE Band 5                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20407                       | 20525 | 20643 | Channel       |            |           |                      |                       |
| 824.7                       | 836.5 | 848.3 | Freq. (MHz)   |            |           |                      |                       |
| 22.05                       | 22.15 | 22.12 | 24            | QPSK       | 1.4MHz    | 1                    | 0                     |
| 22.04                       | 22.17 | 22.18 | 24            | QPSK       | 1.4MHz    | 1                    | 2                     |
| 22.14                       | 22.11 | 22.25 | 24            | QPSK       | 1.4MHz    | 1                    | 5                     |
| 22.09                       | 22.19 | 22.19 | 24            | QPSK       | 1.4MHz    | 3                    | 0                     |
| 22.09                       | 22.16 | 22.16 | 24            | QPSK       | 1.4MHz    | 3                    | 1                     |
| 22.10                       | 22.16 | 22.19 | 24            | QPSK       | 1.4MHz    | 3                    | 3                     |
| 21.08                       | 21.18 | 21.13 | 23            | QPSK       | 1.4MHz    | 6                    | 0                     |
| 21.52                       | 21.45 | 21.74 | 23            | 16QAM      | 1.4MHz    | 1                    | 0                     |
| 21.45                       | 21.28 | 21.68 | 23            | 16QAM      | 1.4MHz    | 1                    | 2                     |
| 21.62                       | 21.61 | 21.58 | 23            | 16QAM      | 1.4MHz    | 1                    | 5                     |
| 21.08                       | 21.21 | 21.29 | 23            | 16QAM      | 1.4MHz    | 3                    | 0                     |
| 21.12                       | 21.21 | 21.15 | 23            | 16QAM      | 1.4MHz    | 3                    | 1                     |
| 21.27                       | 21.33 | 21.29 | 23            | 16QAM      | 1.4MHz    | 3                    | 3                     |
| 20.41                       | 20.24 | 20.21 | 22            | 16QAM      | 1.4MHz    | 6                    | 0                     |

| LTE Band 5                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20415                       | 20525 | 20635 | Channel       |            |           |                      |                       |
| 825.5                       | 836.5 | 847.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.02                       | 22.13 | 22.18 | 24            | QPSK       | 3MHz      | 1                    | 0                     |
| 22.14                       | 22.20 | 22.13 | 24            | QPSK       | 3MHz      | 1                    | 7                     |
| 22.09                       | 22.14 | 22.13 | 24            | QPSK       | 3MHz      | 1                    | 14                    |
| 21.10                       | 21.18 | 21.26 | 23            | QPSK       | 3MHz      | 8                    | 0                     |
| 21.10                       | 21.15 | 21.30 | 23            | QPSK       | 3MHz      | 8                    | 3                     |
| 21.15                       | 21.14 | 21.12 | 23            | QPSK       | 3MHz      | 8                    | 7                     |
| 21.14                       | 21.13 | 21.23 | 23            | QPSK       | 3MHz      | 15                   | 0                     |
| 21.59                       | 21.26 | 21.31 | 23            | 16QAM      | 3MHz      | 1                    | 0                     |
| 21.70                       | 21.27 | 21.38 | 23            | 16QAM      | 3MHz      | 1                    | 7                     |
| 20.83                       | 21.60 | 21.53 | 23            | 16QAM      | 3MHz      | 1                    | 14                    |
| 20.19                       | 20.31 | 20.36 | 22            | 16QAM      | 3MHz      | 8                    | 0                     |
| 20.17                       | 20.32 | 20.25 | 22            | 16QAM      | 3MHz      | 8                    | 3                     |
| 20.31                       | 20.14 | 20.21 | 22            | 16QAM      | 3MHz      | 8                    | 7                     |
| 20.28                       | 20.24 | 20.15 | 22            | 16QAM      | 3MHz      | 15                   | 0                     |

| LTE Band 5                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20425                       | 20525 | 20625 | Channel       |            |           |                      |                       |
| 826.5                       | 836.5 | 846.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.08                       | 22.13 | 22.19 | 24            | QPSK       | 5MHz      | 1                    | 0                     |
| 22.12                       | 22.07 | 22.19 | 24            | QPSK       | 5MHz      | 1                    | 12                    |
| 22.22                       | 22.10 | 22.17 | 24            | QPSK       | 5MHz      | 1                    | 24                    |
| 21.11                       | 21.13 | 21.18 | 23            | QPSK       | 5MHz      | 12                   | 0                     |
| 21.10                       | 21.13 | 21.04 | 23            | QPSK       | 5MHz      | 12                   | 6                     |
| 21.21                       | 21.14 | 21.13 | 23            | QPSK       | 5MHz      | 12                   | 13                    |
| 21.18                       | 21.14 | 21.19 | 23            | QPSK       | 5MHz      | 25                   | 0                     |
| 21.61                       | 21.61 | 21.40 | 23            | 16QAM      | 5MHz      | 1                    | 0                     |
| 21.44                       | 21.62 | 21.63 | 23            | 16QAM      | 5MHz      | 1                    | 12                    |
| 21.44                       | 21.47 | 21.60 | 23            | 16QAM      | 5MHz      | 1                    | 24                    |
| 20.33                       | 20.23 | 20.30 | 22            | 16QAM      | 5MHz      | 12                   | 0                     |
| 20.28                       | 20.20 | 20.24 | 22            | 16QAM      | 5MHz      | 12                   | 6                     |
| 20.24                       | 20.05 | 20.35 | 22            | 16QAM      | 5MHz      | 12                   | 13                    |
| 20.25                       | 20.16 | 20.26 | 22            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 5                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20450                       | 20525 | 20600 | Channel       |            |           |                      |                       |
| 829                         | 836.5 | 844   | Freq. (MHz)   |            |           |                      |                       |
| 22.46                       | 22.64 | 22.43 | 24            | QPSK       | 10MHz     | 1                    | 0                     |
| 22.33                       | 22.16 | 22.28 | 24            | QPSK       | 10MHz     | 1                    | 24                    |
| 22.39                       | 22.40 | 22.23 | 24            | QPSK       | 10MHz     | 1                    | 49                    |
| 21.30                       | 21.25 | 21.26 | 23            | QPSK       | 10MHz     | 25                   | 0                     |
| 21.31                       | 21.25 | 21.34 | 23            | QPSK       | 10MHz     | 25                   | 12                    |
| 21.42                       | 21.25 | 21.54 | 23            | QPSK       | 10MHz     | 25                   | 25                    |
| 21.41                       | 21.21 | 21.37 | 23            | QPSK       | 10MHz     | 50                   | 0                     |
| 21.67                       | 21.06 | 21.79 | 23            | 16QAM      | 10MHz     | 1                    | 0                     |
| 21.43                       | 21.22 | 21.77 | 23            | 16QAM      | 10MHz     | 1                    | 24                    |
| 21.64                       | 21.69 | 21.93 | 23            | 16QAM      | 10MHz     | 1                    | 49                    |
| 20.47                       | 20.31 | 20.40 | 22            | 16QAM      | 10MHz     | 25                   | 0                     |
| 20.38                       | 20.30 | 20.50 | 22            | 16QAM      | 10MHz     | 25                   | 12                    |
| 20.60                       | 20.36 | 20.48 | 22            | 16QAM      | 10MHz     | 25                   | 25                    |
| 20.46                       | 20.31 | 20.55 | 22            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 7                  |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20775                       | 21100 | 21425  | Channel       |            |           |                      |                       |
| 2502.5                      | 2535  | 2567.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.63                       | 22.78 | 22.86  | 24            | QPSK       | 5MHz      | 1                    | 0                     |
| 22.74                       | 22.72 | 22.80  | 24            | QPSK       | 5MHz      | 1                    | 12                    |
| 22.67                       | 22.78 | 22.93  | 24            | QPSK       | 5MHz      | 1                    | 24                    |
| 21.79                       | 21.77 | 22.00  | 23            | QPSK       | 5MHz      | 12                   | 0                     |
| 21.78                       | 21.77 | 21.95  | 23            | QPSK       | 5MHz      | 12                   | 6                     |
| 21.83                       | 21.79 | 21.96  | 23            | QPSK       | 5MHz      | 12                   | 13                    |
| 21.79                       | 21.81 | 21.96  | 23            | QPSK       | 5MHz      | 25                   | 0                     |
| 22.02                       | 21.97 | 22.02  | 23            | 16QAM      | 5MHz      | 1                    | 0                     |
| 22.15                       | 21.54 | 22.13  | 23            | 16QAM      | 5MHz      | 1                    | 12                    |
| 22.02                       | 22.03 | 22.16  | 23            | 16QAM      | 5MHz      | 1                    | 24                    |
| 20.85                       | 20.75 | 20.96  | 22            | 16QAM      | 5MHz      | 12                   | 0                     |
| 20.89                       | 20.75 | 20.95  | 22            | 16QAM      | 5MHz      | 12                   | 6                     |
| 20.91                       | 20.95 | 21.11  | 22            | 16QAM      | 5MHz      | 12                   | 13                    |
| 20.82                       | 20.79 | 21.01  | 22            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 7                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20800                       | 21100 | 21400 | Channel       |            |           |                      |                       |
| 2505                        | 2535  | 2565  | Freq. (MHz)   |            |           |                      |                       |
| 22.62                       | 22.73 | 22.92 | 24            | QPSK       | 10MHz     | 1                    | 0                     |
| 22.78                       | 22.76 | 22.94 | 24            | QPSK       | 10MHz     | 1                    | 24                    |
| 22.76                       | 22.82 | 22.93 | 24            | QPSK       | 10MHz     | 1                    | 49                    |
| 21.84                       | 21.85 | 22.01 | 23            | QPSK       | 10MHz     | 25                   | 0                     |
| 21.84                       | 21.87 | 22.03 | 23            | QPSK       | 10MHz     | 25                   | 12                    |
| 21.83                       | 21.89 | 22.05 | 23            | QPSK       | 10MHz     | 25                   | 25                    |
| 21.80                       | 21.82 | 22.05 | 23            | QPSK       | 10MHz     | 50                   | 0                     |
| 21.98                       | 22.14 | 22.29 | 23            | 16QAM      | 10MHz     | 1                    | 0                     |
| 22.16                       | 21.47 | 21.95 | 23            | 16QAM      | 10MHz     | 1                    | 24                    |
| 22.22                       | 22.30 | 21.75 | 23            | 16QAM      | 10MHz     | 1                    | 49                    |
| 20.88                       | 20.94 | 21.00 | 22            | 16QAM      | 10MHz     | 25                   | 0                     |
| 20.90                       | 20.85 | 20.99 | 22            | 16QAM      | 10MHz     | 25                   | 12                    |
| 20.82                       | 20.86 | 21.05 | 22            | 16QAM      | 10MHz     | 25                   | 25                    |
| 20.83                       | 20.84 | 21.07 | 22            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 7                  |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20825                       | 21100 | 21375  | Channel       |            |           |                      |                       |
| 2507.5                      | 2535  | 2562.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.60                       | 22.57 | 22.77  | 24            | QPSK       | 15MHz     | 1                    | 0                     |
| 22.57                       | 22.66 | 22.76  | 24            | QPSK       | 15MHz     | 1                    | 37                    |
| 22.72                       | 22.84 | 22.77  | 24            | QPSK       | 15MHz     | 1                    | 74                    |
| 21.82                       | 21.70 | 21.87  | 23            | QPSK       | 15MHz     | 36                   | 0                     |
| 21.76                       | 21.77 | 21.89  | 23            | QPSK       | 15MHz     | 36                   | 19                    |
| 21.77                       | 21.91 | 21.96  | 23            | QPSK       | 15MHz     | 36                   | 39                    |
| 21.71                       | 21.86 | 21.88  | 23            | QPSK       | 15MHz     | 75                   | 0                     |
| 21.93                       | 21.78 | 22.04  | 23            | 16QAM      | 15MHz     | 1                    | 0                     |
| 21.51                       | 21.95 | 22.20  | 23            | 16QAM      | 15MHz     | 1                    | 37                    |
| 21.59                       | 21.08 | 22.03  | 23            | 16QAM      | 15MHz     | 1                    | 74                    |
| 20.78                       | 20.73 | 20.89  | 22            | 16QAM      | 15MHz     | 36                   | 0                     |
| 20.79                       | 20.86 | 20.96  | 22            | 16QAM      | 15MHz     | 36                   | 19                    |
| 20.76                       | 20.84 | 21.05  | 22            | 16QAM      | 15MHz     | 36                   | 39                    |
| 20.69                       | 20.86 | 20.93  | 22            | 16QAM      | 15MHz     | 75                   | 0                     |

| LTE Band 7                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20850                       | 21100 | 21350 | Channel       |            |           |                      |                       |
| 2510                        | 2535  | 2560  | Freq. (MHz)   |            |           |                      |                       |
| 22.76                       | 22.58 | 22.97 | 24            | QPSK       | 20MHz     | 1                    | 0                     |
| 22.78                       | 22.62 | 22.80 | 24            | QPSK       | 20MHz     | 1                    | 49                    |
| 22.63                       | 22.81 | 22.78 | 24            | QPSK       | 20MHz     | 1                    | 99                    |
| 21.96                       | 21.92 | 21.89 | 23            | QPSK       | 20MHz     | 50                   | 0                     |
| 21.77                       | 21.77 | 21.86 | 23            | QPSK       | 20MHz     | 50                   | 25                    |
| 21.75                       | 21.91 | 22.01 | 23            | QPSK       | 20MHz     | 50                   | 50                    |
| 21.87                       | 21.94 | 22.04 | 23            | QPSK       | 20MHz     | 100                  | 0                     |
| 21.65                       | 22.07 | 22.23 | 23            | 16QAM      | 20MHz     | 1                    | 0                     |
| 21.95                       | 21.83 | 21.63 | 23            | 16QAM      | 20MHz     | 1                    | 49                    |
| 21.86                       | 22.32 | 22.19 | 23            | 16QAM      | 20MHz     | 1                    | 99                    |
| 20.76                       | 20.74 | 20.95 | 22            | 16QAM      | 20MHz     | 50                   | 0                     |
| 20.76                       | 20.84 | 20.97 | 22            | 16QAM      | 20MHz     | 50                   | 25                    |
| 20.73                       | 20.92 | 21.08 | 22            | 16QAM      | 20MHz     | 50                   | 50                    |
| 20.75                       | 20.91 | 21.06 | 22            | 16QAM      | 20MHz     | 100                  | 0                     |

| LTE Band 12                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23017                       | 23095 | 23173 | Channel       |            |           |                      |                       |
| 699.7                       | 707.5 | 715.3 | Freq. (MHz)   |            |           |                      |                       |
| 22.84                       | 22.60 | 22.64 | 24            | QPSK       | 1.4MHz    | 1                    | 0                     |
| 22.61                       | 22.48 | 22.61 | 24            | QPSK       | 1.4MHz    | 1                    | 2                     |
| 22.72                       | 22.68 | 22.49 | 24            | QPSK       | 1.4MHz    | 1                    | 5                     |
| 22.83                       | 22.57 | 22.57 | 24            | QPSK       | 1.4MHz    | 3                    | 0                     |
| 22.64                       | 22.53 | 22.56 | 24            | QPSK       | 1.4MHz    | 3                    | 1                     |
| 22.71                       | 22.71 | 22.61 | 24            | QPSK       | 1.4MHz    | 3                    | 3                     |
| 21.67                       | 21.59 | 21.47 | 23            | QPSK       | 1.4MHz    | 6                    | 0                     |
| 21.97                       | 21.81 | 21.94 | 23            | 16QAM      | 1.4MHz    | 1                    | 0                     |
| 22.11                       | 21.66 | 21.90 | 23            | 16QAM      | 1.4MHz    | 1                    | 2                     |
| 22.40                       | 22.03 | 21.37 | 23            | 16QAM      | 1.4MHz    | 1                    | 5                     |
| 21.71                       | 21.61 | 21.81 | 23            | 16QAM      | 1.4MHz    | 3                    | 0                     |
| 21.81                       | 21.72 | 21.67 | 23            | 16QAM      | 1.4MHz    | 3                    | 1                     |
| 21.78                       | 21.71 | 21.63 | 23            | 16QAM      | 1.4MHz    | 3                    | 3                     |
| 20.87                       | 20.63 | 20.57 | 22            | 16QAM      | 1.4MHz    | 6                    | 0                     |

| LTE Band 12                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23025                       | 23095 | 23165 | Channel       |            |           |                      |                       |
| 700.5                       | 707.5 | 714.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.84                       | 22.54 | 22.68 | 24            | QPSK       | 3MHz      | 1                    | 0                     |
| 22.76                       | 22.57 | 22.73 | 24            | QPSK       | 3MHz      | 1                    | 7                     |
| 22.76                       | 22.61 | 22.50 | 24            | QPSK       | 3MHz      | 1                    | 14                    |
| 21.61                       | 21.59 | 21.66 | 23            | QPSK       | 3MHz      | 8                    | 0                     |
| 21.64                       | 21.57 | 21.59 | 23            | QPSK       | 3MHz      | 8                    | 3                     |
| 21.68                       | 21.61 | 21.70 | 23            | QPSK       | 3MHz      | 8                    | 7                     |
| 21.70                       | 21.59 | 21.69 | 23            | QPSK       | 3MHz      | 15                   | 0                     |
| 21.94                       | 21.68 | 21.78 | 23            | 16QAM      | 3MHz      | 1                    | 0                     |
| 21.87                       | 21.78 | 21.84 | 23            | 16QAM      | 3MHz      | 1                    | 7                     |
| 21.99                       | 21.70 | 21.89 | 23            | 16QAM      | 3MHz      | 1                    | 14                    |
| 20.65                       | 20.70 | 20.63 | 22            | 16QAM      | 3MHz      | 8                    | 0                     |
| 20.73                       | 20.59 | 20.66 | 22            | 16QAM      | 3MHz      | 8                    | 3                     |
| 20.64                       | 20.64 | 20.83 | 22            | 16QAM      | 3MHz      | 8                    | 7                     |
| 20.89                       | 20.67 | 20.71 | 22            | 16QAM      | 3MHz      | 15                   | 0                     |

| LTE Band 12                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23035                       | 23095 | 23155 | Channel       |            |           |                      |                       |
| 701.5                       | 707.5 | 713.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.53                       | 22.47 | 22.56 | 24            | QPSK       | 5MHz      | 1                    | 0                     |
| 22.50                       | 22.56 | 22.56 | 24            | QPSK       | 5MHz      | 1                    | 12                    |
| 22.57                       | 22.73 | 22.60 | 24            | QPSK       | 5MHz      | 1                    | 24                    |
| 21.68                       | 21.59 | 21.74 | 23            | QPSK       | 5MHz      | 12                   | 0                     |
| 21.60                       | 21.55 | 21.61 | 23            | QPSK       | 5MHz      | 12                   | 6                     |
| 21.68                       | 21.66 | 21.48 | 23            | QPSK       | 5MHz      | 12                   | 13                    |
| 21.70                       | 21.60 | 21.66 | 23            | QPSK       | 5MHz      | 25                   | 0                     |
| 21.85                       | 22.01 | 22.08 | 23            | 16QAM      | 5MHz      | 1                    | 0                     |
| 21.83                       | 21.86 | 22.06 | 23            | 16QAM      | 5MHz      | 1                    | 12                    |
| 22.29                       | 21.85 | 21.89 | 23            | 16QAM      | 5MHz      | 1                    | 24                    |
| 20.89                       | 20.59 | 20.78 | 22            | 16QAM      | 5MHz      | 12                   | 0                     |
| 20.75                       | 20.68 | 20.60 | 22            | 16QAM      | 5MHz      | 12                   | 6                     |
| 20.80                       | 20.78 | 20.64 | 22            | 16QAM      | 5MHz      | 12                   | 13                    |
| 20.76                       | 20.63 | 20.65 | 22            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 12                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23060                       | 23095 | 23130 | Channel       |            |           |                      |                       |
| 704                         | 707.5 | 711   | Freq. (MHz)   |            |           |                      |                       |
| 22.49                       | 22.57 | 22.46 | 24            | QPSK       | 10MHz     | 1                    | 0                     |
| 22.53                       | 22.49 | 22.62 | 24            | QPSK       | 10MHz     | 1                    | 24                    |
| 22.62                       | 22.85 | 22.69 | 24            | QPSK       | 10MHz     | 1                    | 49                    |
| 21.65                       | 21.60 | 21.74 | 23            | QPSK       | 10MHz     | 25                   | 0                     |
| 21.74                       | 21.62 | 21.82 | 23            | QPSK       | 10MHz     | 25                   | 12                    |
| 21.66                       | 21.73 | 21.83 | 23            | QPSK       | 10MHz     | 25                   | 25                    |
| 21.61                       | 21.79 | 21.94 | 23            | QPSK       | 10MHz     | 50                   | 0                     |
| 22.22                       | 22.16 | 22.00 | 23            | 16QAM      | 10MHz     | 1                    | 0                     |
| 21.66                       | 22.06 | 21.86 | 23            | 16QAM      | 10MHz     | 1                    | 24                    |
| 22.09                       | 22.20 | 21.96 | 23            | 16QAM      | 10MHz     | 1                    | 49                    |
| 20.72                       | 20.55 | 20.80 | 22            | 16QAM      | 10MHz     | 25                   | 0                     |
| 20.92                       | 20.62 | 20.98 | 22            | 16QAM      | 10MHz     | 25                   | 12                    |
| 20.68                       | 20.82 | 20.77 | 22            | 16QAM      | 10MHz     | 25                   | 25                    |
| 20.76                       | 20.87 | 21.00 | 22            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 13                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23205                       | 23230 | 23255 | Channel       |            |           |                      |                       |
| 779.5                       | 782   | 784.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.81                       | 22.77 | 22.85 | 24            | QPSK       | 5MHz      | 1                    | 0                     |
| 22.55                       | 22.87 | 22.64 | 24            | QPSK       | 5MHz      | 1                    | 12                    |
| 22.82                       | 22.76 | 22.64 | 24            | QPSK       | 5MHz      | 1                    | 24                    |
| 21.52                       | 21.73 | 21.74 | 23            | QPSK       | 5MHz      | 12                   | 0                     |
| 21.97                       | 21.82 | 21.67 | 23            | QPSK       | 5MHz      | 12                   | 6                     |
| 21.87                       | 21.79 | 21.73 | 23            | QPSK       | 5MHz      | 12                   | 13                    |
| 21.73                       | 21.81 | 21.65 | 23            | QPSK       | 5MHz      | 25                   | 0                     |
| 21.96                       | 22.20 | 22.20 | 23            | 16QAM      | 5MHz      | 1                    | 0                     |
| 21.99                       | 22.18 | 22.11 | 23            | 16QAM      | 5MHz      | 1                    | 12                    |
| 22.28                       | 21.93 | 22.02 | 23            | 16QAM      | 5MHz      | 1                    | 24                    |
| 20.99                       | 20.82 | 20.88 | 22            | 16QAM      | 5MHz      | 12                   | 0                     |
| 20.84                       | 20.80 | 20.78 | 22            | 16QAM      | 5MHz      | 12                   | 6                     |
| 20.85                       | 20.75 | 20.72 | 22            | 16QAM      | 5MHz      | 12                   | 13                    |
| 20.78                       | 20.81 | 20.79 | 22            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 13                 |  |               |            |           |                      |                       |
|-----------------------------|--|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |  | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23230                       |  | Channel       |            |           |                      |                       |
| 782                         |  | Freq. (MHz)   |            |           |                      |                       |
| 22.94                       |  | 24            | QPSK       | 10MHz     | 1                    | 0                     |
| 22.84                       |  | 24            | QPSK       | 10MHz     | 1                    | 24                    |
| 22.90                       |  | 24            | QPSK       | 10MHz     | 1                    | 49                    |
| 21.96                       |  | 23            | QPSK       | 10MHz     | 25                   | 0                     |
| 21.76                       |  | 23            | QPSK       | 10MHz     | 25                   | 12                    |
| 21.84                       |  | 23            | QPSK       | 10MHz     | 25                   | 25                    |
| 21.95                       |  | 23            | QPSK       | 10MHz     | 50                   | 0                     |
| 22.27                       |  | 23            | 16QAM      | 10MHz     | 1                    | 0                     |
| 22.18                       |  | 23            | 16QAM      | 10MHz     | 1                    | 24                    |
| 22.35                       |  | 23            | 16QAM      | 10MHz     | 1                    | 49                    |
| 21.06                       |  | 22            | 16QAM      | 10MHz     | 25                   | 0                     |
| 20.98                       |  | 22            | 16QAM      | 10MHz     | 25                   | 12                    |
| 20.89                       |  | 22            | 16QAM      | 10MHz     | 25                   | 25                    |
| 21.20                       |  | 22            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 17                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23755                       | 23790 | 23825 | Channel       |            |           |                      |                       |
| 706.5                       | 710   | 713.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.68                       | 22.63 | 22.61 | 24            | QPSK       | 5MHz      | 1                    | 0                     |
| 22.58                       | 22.70 | 22.72 | 24            | QPSK       | 5MHz      | 1                    | 12                    |
| 22.62                       | 22.79 | 22.70 | 24            | QPSK       | 5MHz      | 1                    | 24                    |
| 21.65                       | 21.61 | 21.74 | 23            | QPSK       | 5MHz      | 12                   | 0                     |
| 21.66                       | 21.72 | 21.66 | 23            | QPSK       | 5MHz      | 12                   | 6                     |
| 21.69                       | 21.71 | 21.54 | 23            | QPSK       | 5MHz      | 12                   | 13                    |
| 21.60                       | 21.72 | 21.64 | 23            | QPSK       | 5MHz      | 25                   | 0                     |
| 22.07                       | 21.57 | 22.16 | 23            | 16QAM      | 5MHz      | 1                    | 0                     |
| 21.41                       | 22.11 | 22.33 | 23            | 16QAM      | 5MHz      | 1                    | 12                    |
| 21.85                       | 21.87 | 22.10 | 23            | 16QAM      | 5MHz      | 1                    | 24                    |
| 20.78                       | 20.78 | 20.82 | 22            | 16QAM      | 5MHz      | 12                   | 0                     |
| 20.77                       | 20.83 | 20.69 | 22            | 16QAM      | 5MHz      | 12                   | 6                     |
| 20.86                       | 20.86 | 20.79 | 22            | 16QAM      | 5MHz      | 12                   | 13                    |
| 20.74                       | 20.66 | 20.72 | 22            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 17                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23780                       | 23790 | 23800 | Channel       |            |           |                      |                       |
| 709                         | 710   | 711   | Freq. (MHz)   |            |           |                      |                       |
| 22.84                       | 22.60 | 22.69 | 24            | QPSK       | 10MHz     | 1                    | 0                     |
| 22.59                       | 22.71 | 22.75 | 24            | QPSK       | 10MHz     | 1                    | 24                    |
| 22.71                       | 22.96 | 22.68 | 24            | QPSK       | 10MHz     | 1                    | 49                    |
| 21.65                       | 21.72 | 21.72 | 23            | QPSK       | 10MHz     | 25                   | 0                     |
| 21.84                       | 21.73 | 21.96 | 23            | QPSK       | 10MHz     | 25                   | 12                    |
| 21.77                       | 21.94 | 21.78 | 23            | QPSK       | 10MHz     | 25                   | 25                    |
| 22.00                       | 21.97 | 21.99 | 23            | QPSK       | 10MHz     | 50                   | 0                     |
| 22.20                       | 22.11 | 21.80 | 23            | 16QAM      | 10MHz     | 1                    | 0                     |
| 22.10                       | 21.78 | 21.80 | 23            | 16QAM      | 10MHz     | 1                    | 24                    |
| 22.16                       | 22.15 | 22.00 | 23            | 16QAM      | 10MHz     | 1                    | 49                    |
| 20.89                       | 20.79 | 20.87 | 22            | 16QAM      | 10MHz     | 25                   | 0                     |
| 20.93                       | 20.79 | 20.89 | 22            | 16QAM      | 10MHz     | 25                   | 12                    |
| 20.92                       | 21.15 | 20.78 | 22            | 16QAM      | 10MHz     | 25                   | 25                    |
| 21.05                       | 21.00 | 20.99 | 22            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 26                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 26697                       | 26865 | 27033 | Channel       |            |           |                      |                       |
| 814.7                       | 831.5 | 848.3 | Freq. (MHz)   |            |           |                      |                       |
| 22.48                       | 22.69 | 22.71 | 24            | QPSK       | 1.4MHz    | 1                    | 0                     |
| 22.39                       | 22.61 | 22.62 | 24            | QPSK       | 1.4MHz    | 1                    | 2                     |
| 22.43                       | 22.67 | 22.60 | 24            | QPSK       | 1.4MHz    | 1                    | 5                     |
| 22.47                       | 22.70 | 22.60 | 24            | QPSK       | 1.4MHz    | 3                    | 0                     |
| 22.62                       | 22.66 | 22.65 | 24            | QPSK       | 1.4MHz    | 3                    | 1                     |
| 22.43                       | 22.69 | 22.59 | 24            | QPSK       | 1.4MHz    | 3                    | 3                     |
| 21.47                       | 21.71 | 21.49 | 23            | QPSK       | 1.4MHz    | 6                    | 0                     |
| 21.80                       | 22.25 | 22.07 | 23            | 16QAM      | 1.4MHz    | 1                    | 0                     |
| 21.62                       | 22.34 | 21.92 | 23            | 16QAM      | 1.4MHz    | 1                    | 2                     |
| 21.96                       | 22.02 | 21.91 | 23            | 16QAM      | 1.4MHz    | 1                    | 5                     |
| 21.68                       | 21.56 | 21.62 | 23            | 16QAM      | 1.4MHz    | 3                    | 0                     |
| 21.72                       | 21.85 | 21.92 | 23            | 16QAM      | 1.4MHz    | 3                    | 1                     |
| 21.50                       | 21.80 | 21.61 | 23            | 16QAM      | 1.4MHz    | 3                    | 3                     |
| 20.73                       | 20.81 | 20.63 | 22            | 16QAM      | 1.4MHz    | 6                    | 0                     |

| LTE Band 26                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 26705                       | 26865 | 27025 | Channel       |            |           |                      |                       |
| 815.5                       | 831.5 | 847.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.41                       | 22.58 | 22.50 | 24            | QPSK       | 3MHz      | 1                    | 0                     |
| 22.42                       | 22.76 | 22.44 | 24            | QPSK       | 3MHz      | 1                    | 7                     |
| 22.46                       | 22.55 | 22.44 | 24            | QPSK       | 3MHz      | 1                    | 14                    |
| 21.48                       | 21.65 | 21.56 | 23            | QPSK       | 3MHz      | 8                    | 0                     |
| 21.50                       | 21.78 | 21.56 | 23            | QPSK       | 3MHz      | 8                    | 3                     |
| 21.53                       | 21.70 | 21.58 | 23            | QPSK       | 3MHz      | 8                    | 7                     |
| 21.48                       | 21.74 | 21.65 | 23            | QPSK       | 3MHz      | 15                   | 0                     |
| 21.44                       | 21.63 | 21.74 | 23            | 16QAM      | 3MHz      | 1                    | 0                     |
| 21.94                       | 22.34 | 22.19 | 23            | 16QAM      | 3MHz      | 1                    | 7                     |
| 21.66                       | 22.09 | 22.16 | 23            | 16QAM      | 3MHz      | 1                    | 14                    |
| 20.63                       | 20.71 | 20.62 | 22            | 16QAM      | 3MHz      | 8                    | 0                     |
| 20.51                       | 20.83 | 20.53 | 22            | 16QAM      | 3MHz      | 8                    | 3                     |
| 20.71                       | 20.89 | 20.59 | 22            | 16QAM      | 3MHz      | 8                    | 7                     |
| 20.52                       | 20.77 | 20.48 | 22            | 16QAM      | 3MHz      | 15                   | 0                     |

| LTE Band 26                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 26715                       | 26865 | 27015 | Channel       |            |           |                      |                       |
| 816.5                       | 831.5 | 846.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.43                       | 22.79 | 22.55 | 24            | QPSK       | 5MHz      | 1                    | 0                     |
| 22.50                       | 22.76 | 22.58 | 24            | QPSK       | 5MHz      | 1                    | 12                    |
| 22.41                       | 22.71 | 22.56 | 24            | QPSK       | 5MHz      | 1                    | 24                    |
| 21.45                       | 21.67 | 21.58 | 23            | QPSK       | 5MHz      | 12                   | 0                     |
| 21.51                       | 21.65 | 21.56 | 23            | QPSK       | 5MHz      | 12                   | 6                     |
| 21.51                       | 21.63 | 21.61 | 23            | QPSK       | 5MHz      | 12                   | 13                    |
| 21.53                       | 21.70 | 21.54 | 23            | QPSK       | 5MHz      | 25                   | 0                     |
| 21.87                       | 22.13 | 21.81 | 23            | 16QAM      | 5MHz      | 1                    | 0                     |
| 21.88                       | 21.80 | 21.78 | 23            | 16QAM      | 5MHz      | 1                    | 12                    |
| 21.99                       | 21.63 | 21.78 | 23            | 16QAM      | 5MHz      | 1                    | 24                    |
| 20.48                       | 20.71 | 20.72 | 22            | 16QAM      | 5MHz      | 12                   | 0                     |
| 20.60                       | 20.69 | 20.54 | 22            | 16QAM      | 5MHz      | 12                   | 6                     |
| 20.57                       | 20.71 | 20.46 | 22            | 16QAM      | 5MHz      | 12                   | 13                    |
| 20.62                       | 20.74 | 20.63 | 22            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 26                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 26740                       | 26865 | 26990 | Channel       |            |           |                      |                       |
| 819                         | 831.5 | 844   | Freq. (MHz)   |            |           |                      |                       |
| 22.68                       | 22.70 | 22.65 | 24            | QPSK       | 10MHz     | 1                    | 0                     |
| 22.40                       | 22.81 | 22.71 | 24            | QPSK       | 10MHz     | 1                    | 24                    |
| 22.50                       | 22.53 | 22.64 | 24            | QPSK       | 10MHz     | 1                    | 49                    |
| 21.59                       | 21.69 | 21.72 | 23            | QPSK       | 10MHz     | 25                   | 0                     |
| 21.55                       | 21.67 | 21.76 | 23            | QPSK       | 10MHz     | 25                   | 12                    |
| 21.42                       | 21.66 | 21.70 | 23            | QPSK       | 10MHz     | 25                   | 25                    |
| 21.44                       | 21.77 | 21.82 | 23            | QPSK       | 10MHz     | 50                   | 0                     |
| 22.11                       | 21.82 | 22.11 | 23            | 16QAM      | 10MHz     | 1                    | 0                     |
| 21.22                       | 22.07 | 21.75 | 23            | 16QAM      | 10MHz     | 1                    | 24                    |
| 21.54                       | 22.09 | 21.89 | 23            | 16QAM      | 10MHz     | 1                    | 49                    |
| 20.75                       | 20.87 | 20.74 | 22            | 16QAM      | 10MHz     | 25                   | 0                     |
| 20.64                       | 20.97 | 20.80 | 22            | 16QAM      | 10MHz     | 25                   | 12                    |
| 20.63                       | 20.72 | 20.80 | 22            | 16QAM      | 10MHz     | 25                   | 25                    |
| 20.74                       | 20.84 | 20.78 | 22            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 26                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 26765                       | 26865 | 26965 | Channel       |            |           |                      |                       |
| 821.5                       | 831.5 | 841.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.54                       | 22.57 | 22.57 | 24            | QPSK       | 15MHz     | 1                    | 0                     |
| 22.51                       | 22.72 | 22.70 | 24            | QPSK       | 15MHz     | 1                    | 37                    |
| 22.71                       | 22.55 | 22.66 | 24            | QPSK       | 15MHz     | 1                    | 74                    |
| 21.62                       | 21.74 | 21.60 | 23            | QPSK       | 15MHz     | 36                   | 0                     |
| 21.59                       | 21.81 | 21.63 | 23            | QPSK       | 15MHz     | 36                   | 19                    |
| 21.63                       | 21.67 | 21.62 | 23            | QPSK       | 15MHz     | 36                   | 39                    |
| 21.76                       | 21.93 | 21.87 | 23            | QPSK       | 15MHz     | 75                   | 0                     |
| 21.83                       | 21.47 | 21.83 | 23            | 16QAM      | 15MHz     | 1                    | 0                     |
| 21.60                       | 22.29 | 21.66 | 23            | 16QAM      | 15MHz     | 1                    | 37                    |
| 22.18                       | 21.73 | 22.02 | 23            | 16QAM      | 15MHz     | 1                    | 74                    |
| 20.61                       | 20.82 | 20.78 | 22            | 16QAM      | 15MHz     | 36                   | 0                     |
| 20.55                       | 20.96 | 20.87 | 22            | 16QAM      | 15MHz     | 36                   | 19                    |
| 20.81                       | 20.72 | 20.80 | 22            | 16QAM      | 15MHz     | 36                   | 39                    |
| 20.96                       | 20.90 | 20.86 | 22            | 16QAM      | 15MHz     | 75                   | 0                     |

| LTE Band 30                 |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 27685                       | 27710 | 27735  | Channel       |            |           |                      |                       |
| 2307.5                      | 2310  | 2312.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.77                       | 22.76 | 22.77  | 24            | QPSK       | 5MHz      | 1                    | 0                     |
| 22.71                       | 22.77 | 22.67  | 24            | QPSK       | 5MHz      | 1                    | 12                    |
| 22.80                       | 22.69 | 22.59  | 24            | QPSK       | 5MHz      | 1                    | 24                    |
| 21.83                       | 21.77 | 21.75  | 23            | QPSK       | 5MHz      | 12                   | 0                     |
| 21.78                       | 21.74 | 21.68  | 23            | QPSK       | 5MHz      | 12                   | 6                     |
| 21.83                       | 21.76 | 21.69  | 23            | QPSK       | 5MHz      | 12                   | 13                    |
| 21.76                       | 21.83 | 21.63  | 23            | QPSK       | 5MHz      | 25                   | 0                     |
| 22.13                       | 21.79 | 21.86  | 23            | 16QAM      | 5MHz      | 1                    | 0                     |
| 21.79                       | 22.13 | 21.79  | 23            | 16QAM      | 5MHz      | 1                    | 12                    |
| 21.65                       | 21.73 | 22.26  | 23            | 16QAM      | 5MHz      | 1                    | 24                    |
| 20.76                       | 20.92 | 20.78  | 22            | 16QAM      | 5MHz      | 12                   | 0                     |
| 20.84                       | 20.90 | 20.69  | 22            | 16QAM      | 5MHz      | 12                   | 6                     |
| 20.91                       | 20.75 | 20.75  | 22            | 16QAM      | 5MHz      | 12                   | 13                    |
| 20.78                       | 20.77 | 20.82  | 22            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 30                 |               |            |           |                      |                       |
|-----------------------------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 27710                       | Channel       |            |           |                      |                       |
| 2310                        | Freq. (MHz)   |            |           |                      |                       |
| 22.87                       | 24            | QPSK       | 10MHz     | 1                    | 0                     |
| 22.78                       | 24            | QPSK       | 10MHz     | 1                    | 24                    |
| 22.76                       | 24            | QPSK       | 10MHz     | 1                    | 49                    |
| 21.86                       | 23            | QPSK       | 10MHz     | 25                   | 0                     |
| 21.92                       | 23            | QPSK       | 10MHz     | 25                   | 12                    |
| 21.81                       | 23            | QPSK       | 10MHz     | 25                   | 25                    |
| 22.05                       | 23            | QPSK       | 10MHz     | 50                   | 0                     |
| 22.50                       | 23            | 16QAM      | 10MHz     | 1                    | 0                     |
| 22.05                       | 23            | 16QAM      | 10MHz     | 1                    | 24                    |
| 21.71                       | 23            | 16QAM      | 10MHz     | 1                    | 49                    |
| 20.90                       | 22            | 16QAM      | 10MHz     | 25                   | 0                     |
| 21.03                       | 22            | 16QAM      | 10MHz     | 25                   | 12                    |
| 21.02                       | 22            | 16QAM      | 10MHz     | 25                   | 25                    |
| 21.09                       | 22            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 38                 |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 37775                       | 38000 | 38225  | Channel       |            |           |                      |                       |
| 2572.5                      | 2595  | 2617.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.77                       | 22.68 | 22.87  | 24            | QPSK       | 5MHz      | 1                    | 0                     |
| 22.75                       | 22.66 | 22.84  | 24            | QPSK       | 5MHz      | 1                    | 12                    |
| 22.78                       | 22.70 | 22.86  | 24            | QPSK       | 5MHz      | 1                    | 24                    |
| 21.77                       | 21.65 | 21.85  | 23            | QPSK       | 5MHz      | 12                   | 0                     |
| 21.75                       | 21.69 | 21.86  | 23            | QPSK       | 5MHz      | 12                   | 6                     |
| 21.76                       | 21.68 | 21.87  | 23            | QPSK       | 5MHz      | 12                   | 13                    |
| 21.75                       | 21.67 | 21.86  | 23            | QPSK       | 5MHz      | 25                   | 0                     |
| 21.92                       | 21.80 | 22.05  | 23            | 16QAM      | 5MHz      | 1                    | 0                     |
| 21.86                       | 21.81 | 22.01  | 23            | 16QAM      | 5MHz      | 1                    | 12                    |
| 21.89                       | 21.84 | 22.04  | 23            | 16QAM      | 5MHz      | 1                    | 24                    |
| 20.88                       | 20.81 | 20.98  | 22            | 16QAM      | 5MHz      | 12                   | 0                     |
| 20.87                       | 20.78 | 20.97  | 22            | 16QAM      | 5MHz      | 12                   | 6                     |
| 20.86                       | 20.81 | 20.99  | 22            | 16QAM      | 5MHz      | 12                   | 13                    |
| 20.79                       | 20.75 | 20.88  | 22            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 38                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 37800                       | 38000 | 38200 | Channel       |            |           |                      |                       |
| 2575                        | 2595  | 2615  | Freq. (MHz)   |            |           |                      |                       |
| 22.82                       | 22.74 | 22.87 | 24            | QPSK       | 10MHz     | 1                    | 0                     |
| 22.78                       | 22.70 | 22.86 | 24            | QPSK       | 10MHz     | 1                    | 24                    |
| 22.79                       | 22.71 | 22.89 | 24            | QPSK       | 10MHz     | 1                    | 49                    |
| 21.80                       | 21.73 | 21.91 | 23            | QPSK       | 10MHz     | 25                   | 0                     |
| 21.80                       | 21.74 | 21.91 | 23            | QPSK       | 10MHz     | 25                   | 12                    |
| 21.80                       | 21.75 | 21.92 | 23            | QPSK       | 10MHz     | 25                   | 25                    |
| 21.76                       | 21.67 | 21.86 | 23            | QPSK       | 10MHz     | 50                   | 0                     |
| 22.04                       | 21.93 | 22.14 | 23            | 16QAM      | 10MHz     | 1                    | 0                     |
| 22.00                       | 21.91 | 22.12 | 23            | 16QAM      | 10MHz     | 1                    | 24                    |
| 21.95                       | 21.94 | 22.15 | 23            | 16QAM      | 10MHz     | 1                    | 49                    |
| 20.89                       | 20.84 | 20.99 | 22            | 16QAM      | 10MHz     | 25                   | 0                     |
| 20.89                       | 20.81 | 20.99 | 22            | 16QAM      | 10MHz     | 25                   | 12                    |
| 20.88                       | 20.83 | 21.02 | 22            | 16QAM      | 10MHz     | 25                   | 25                    |
| 20.78                       | 20.70 | 20.91 | 22            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 38                 |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 37825                       | 38000 | 38175  | Channel       |            |           |                      |                       |
| 2577.5                      | 2595  | 2612.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.79                       | 22.72 | 22.86  | 24            | QPSK       | 15MHz     | 1                    | 0                     |
| 22.76                       | 22.71 | 22.87  | 24            | QPSK       | 15MHz     | 1                    | 37                    |
| 22.75                       | 22.72 | 22.86  | 24            | QPSK       | 15MHz     | 1                    | 74                    |
| 21.71                       | 21.66 | 21.83  | 23            | QPSK       | 15MHz     | 36                   | 0                     |
| 21.73                       | 21.68 | 21.86  | 23            | QPSK       | 15MHz     | 36                   | 19                    |
| 21.70                       | 21.67 | 21.87  | 23            | QPSK       | 15MHz     | 36                   | 39                    |
| 21.72                       | 21.68 | 21.87  | 23            | QPSK       | 15MHz     | 75                   | 0                     |
| 21.97                       | 21.89 | 22.08  | 23            | 16QAM      | 15MHz     | 1                    | 0                     |
| 21.92                       | 21.89 | 22.11  | 23            | 16QAM      | 15MHz     | 1                    | 37                    |
| 21.89                       | 21.92 | 22.14  | 23            | 16QAM      | 15MHz     | 1                    | 74                    |
| 20.94                       | 20.84 | 20.98  | 22            | 16QAM      | 15MHz     | 36                   | 0                     |
| 20.92                       | 20.86 | 21.03  | 22            | 16QAM      | 15MHz     | 36                   | 19                    |
| 20.88                       | 20.86 | 21.06  | 22            | 16QAM      | 15MHz     | 36                   | 39                    |
| 20.73                       | 20.70 | 20.88  | 22            | 16QAM      | 15MHz     | 75                   | 0                     |

| LTE Band 38                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 37850                       | 38000 | 38150 | Channel       |            |           |                      |                       |
| 2580                        | 2595  | 2610  | Freq. (MHz)   |            |           |                      |                       |
| 22.71                       | 22.68 | 22.81 | 24            | QPSK       | 20MHz     | 1                    | 0                     |
| 22.69                       | 22.65 | 22.80 | 24            | QPSK       | 20MHz     | 1                    | 49                    |
| 22.79                       | 22.74 | 22.90 | 24            | QPSK       | 20MHz     | 1                    | 99                    |
| 21.66                       | 21.63 | 21.76 | 23            | QPSK       | 20MHz     | 50                   | 0                     |
| 21.67                       | 21.61 | 21.77 | 23            | QPSK       | 20MHz     | 50                   | 25                    |
| 21.72                       | 21.64 | 21.80 | 23            | QPSK       | 20MHz     | 50                   | 50                    |
| 21.73                       | 21.69 | 21.83 | 23            | QPSK       | 20MHz     | 100                  | 0                     |
| 21.98                       | 21.89 | 22.06 | 23            | 16QAM      | 20MHz     | 1                    | 0                     |
| 21.88                       | 21.83 | 22.04 | 23            | 16QAM      | 20MHz     | 1                    | 49                    |
| 21.85                       | 21.92 | 22.11 | 23            | 16QAM      | 20MHz     | 1                    | 99                    |
| 20.70                       | 20.64 | 20.79 | 22            | 16QAM      | 20MHz     | 50                   | 0                     |
| 20.68                       | 20.63 | 20.80 | 22            | 16QAM      | 20MHz     | 50                   | 25                    |
| 20.66                       | 20.63 | 20.83 | 22            | 16QAM      | 20MHz     | 50                   | 50                    |
| 20.72                       | 20.69 | 20.83 | 22            | 16QAM      | 20MHz     | 100                  | 0                     |

| LTE Band 41                 |        |       |        |        |               |            |           |                      |                       |
|-----------------------------|--------|-------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |       |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 39675                       | 40148  | 40620 | 41093  | 41565  | Channel       |            |           |                      |                       |
| 2498.5                      | 2545.8 | 2593  | 2640.3 | 2687.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.17                       | 22.51  | 22.37 | 22.77  | 22.62  | 24            | QPSK       | 5MHz      | 1                    | 0                     |
| 22.14                       | 22.49  | 22.33 | 22.74  | 22.56  | 24            | QPSK       | 5MHz      | 1                    | 12                    |
| 22.16                       | 22.53  | 22.37 | 22.79  | 22.66  | 24            | QPSK       | 5MHz      | 1                    | 24                    |
| 21.19                       | 21.53  | 21.37 | 21.84  | 21.67  | 23            | QPSK       | 5MHz      | 12                   | 0                     |
| 21.18                       | 21.51  | 21.36 | 21.82  | 21.65  | 23            | QPSK       | 5MHz      | 12                   | 6                     |
| 21.18                       | 21.52  | 21.37 | 21.84  | 21.67  | 23            | QPSK       | 5MHz      | 12                   | 13                    |
| 21.18                       | 21.51  | 21.37 | 21.81  | 21.67  | 23            | QPSK       | 5MHz      | 25                   | 0                     |
| 21.39                       | 21.76  | 21.51 | 22.09  | 21.76  | 23            | 16QAM      | 5MHz      | 1                    | 0                     |
| 21.34                       | 21.72  | 21.48 | 22.05  | 21.75  | 23            | 16QAM      | 5MHz      | 1                    | 12                    |
| 21.38                       | 21.74  | 21.54 | 22.08  | 21.84  | 23            | 16QAM      | 5MHz      | 1                    | 24                    |
| 20.32                       | 20.65  | 20.47 | 21.00  | 20.81  | 22            | 16QAM      | 5MHz      | 12                   | 0                     |
| 20.31                       | 20.64  | 20.45 | 20.97  | 20.80  | 22            | 16QAM      | 5MHz      | 12                   | 6                     |
| 20.32                       | 20.65  | 20.48 | 20.98  | 20.82  | 22            | 16QAM      | 5MHz      | 12                   | 13                    |
| 20.24                       | 20.56  | 20.37 | 20.89  | 20.69  | 22            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 41                 |       |       |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 39700                       | 40160 | 40620 | 41080 | 41540 | Channel       |            |           |                      |                       |
| 2501                        | 2547  | 2593  | 2639  | 2685  | Freq. (MHz)   |            |           |                      |                       |
| 22.23                       | 22.50 | 22.39 | 22.79 | 22.64 | 24            | QPSK       | 10MHz     | 1                    | 0                     |
| 22.17                       | 22.49 | 22.33 | 22.77 | 22.57 | 24            | QPSK       | 10MHz     | 1                    | 24                    |
| 22.15                       | 22.58 | 22.36 | 22.75 | 22.68 | 24            | QPSK       | 10MHz     | 1                    | 49                    |
| 21.21                       | 21.53 | 21.37 | 21.79 | 21.74 | 23            | QPSK       | 10MHz     | 25                   | 0                     |
| 21.19                       | 21.52 | 21.36 | 21.79 | 21.72 | 23            | QPSK       | 10MHz     | 25                   | 12                    |
| 21.19                       | 21.59 | 21.36 | 21.81 | 21.74 | 23            | QPSK       | 10MHz     | 25                   | 25                    |
| 21.20                       | 21.51 | 21.31 | 21.79 | 21.65 | 23            | QPSK       | 10MHz     | 50                   | 0                     |
| 21.41                       | 21.78 | 21.55 | 22.11 | 21.84 | 23            | 16QAM      | 10MHz     | 1                    | 0                     |
| 21.39                       | 21.77 | 21.52 | 22.08 | 21.85 | 23            | 16QAM      | 10MHz     | 1                    | 24                    |
| 21.38                       | 21.83 | 21.56 | 22.11 | 21.97 | 23            | 16QAM      | 10MHz     | 1                    | 49                    |
| 20.31                       | 20.62 | 20.47 | 20.93 | 20.79 | 22            | 16QAM      | 10MHz     | 25                   | 0                     |
| 20.29                       | 20.63 | 20.44 | 20.93 | 20.81 | 22            | 16QAM      | 10MHz     | 25                   | 12                    |
| 20.29                       | 20.69 | 20.44 | 20.93 | 20.81 | 22            | 16QAM      | 10MHz     | 25                   | 25                    |
| 20.25                       | 20.54 | 20.35 | 20.82 | 20.65 | 22            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 41                 |        |       |        |        |               |            |           |                      |                       |
|-----------------------------|--------|-------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |       |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 39725                       | 40173  | 40620 | 41068  | 41515  | Channel       |            |           |                      |                       |
| 2503.5                      | 2548.3 | 2593  | 2637.8 | 2682.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.13                       | 22.45  | 22.32 | 22.75  | 22.52  | 24            | QPSK       | 15MHz     | 1                    | 0                     |
| 22.12                       | 22.47  | 22.31 | 22.74  | 22.54  | 24            | QPSK       | 15MHz     | 1                    | 37                    |
| 22.12                       | 22.52  | 22.30 | 22.72  | 22.62  | 24            | QPSK       | 15MHz     | 1                    | 74                    |
| 21.15                       | 21.44  | 21.27 | 21.69  | 21.51  | 23            | QPSK       | 15MHz     | 36                   | 0                     |
| 21.12                       | 21.45  | 21.26 | 21.71  | 21.58  | 23            | QPSK       | 15MHz     | 36                   | 19                    |
| 21.11                       | 21.52  | 21.27 | 21.71  | 21.57  | 23            | QPSK       | 15MHz     | 36                   | 39                    |
| 21.15                       | 21.41  | 21.28 | 21.68  | 21.68  | 23            | QPSK       | 15MHz     | 75                   | 0                     |
| 21.36                       | 21.73  | 21.50 | 21.99  | 21.68  | 23            | 16QAM      | 15MHz     | 1                    | 0                     |
| 21.35                       | 21.73  | 21.47 | 22.01  | 21.74  | 23            | 16QAM      | 15MHz     | 1                    | 37                    |
| 21.38                       | 21.79  | 21.51 | 22.05  | 21.87  | 23            | 16QAM      | 15MHz     | 1                    | 74                    |
| 20.34                       | 20.66  | 20.44 | 20.92  | 20.64  | 22            | 16QAM      | 15MHz     | 36                   | 0                     |
| 20.33                       | 20.67  | 20.45 | 20.94  | 20.71  | 22            | 16QAM      | 15MHz     | 36                   | 19                    |
| 20.31                       | 20.71  | 20.44 | 20.95  | 20.72  | 22            | 16QAM      | 15MHz     | 36                   | 39                    |
| 20.18                       | 20.48  | 20.33 | 20.78  | 20.63  | 22            | 16QAM      | 15MHz     | 75                   | 0                     |

| LTE Band 41                 |        |       |        |       |               |            |           |                      |                       |
|-----------------------------|--------|-------|--------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |       |        |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 39750                       | 40185  | 40620 | 41055  | 41490 | Channel       |            |           |                      |                       |
| 2506                        | 2549.5 | 2593  | 2636.5 | 2680  | Freq. (MHz)   |            |           |                      |                       |
| 22.18                       | 22.48  | 22.37 | 22.81  | 22.61 | 24            | QPSK       | 20MHz     | 1                    | 0                     |
| 22.13                       | 22.49  | 22.27 | 22.70  | 22.47 | 24            | QPSK       | 20MHz     | 1                    | 49                    |
| 22.17                       | 22.54  | 22.32 | 22.69  | 22.53 | 24            | QPSK       | 20MHz     | 1                    | 99                    |
| 21.19                       | 21.47  | 21.29 | 21.70  | 21.51 | 23            | QPSK       | 20MHz     | 50                   | 0                     |
| 21.16                       | 21.53  | 21.27 | 21.68  | 21.51 | 23            | QPSK       | 20MHz     | 50                   | 25                    |
| 21.17                       | 21.53  | 21.26 | 21.72  | 21.52 | 23            | QPSK       | 20MHz     | 50                   | 50                    |
| 21.22                       | 21.53  | 21.33 | 21.68  | 21.77 | 23            | QPSK       | 20MHz     | 100                  | 0                     |
| 21.46                       | 21.79  | 21.56 | 22.01  | 21.75 | 23            | 16QAM      | 20MHz     | 1                    | 0                     |
| 21.39                       | 21.82  | 21.51 | 21.99  | 21.65 | 23            | 16QAM      | 20MHz     | 1                    | 49                    |
| 21.45                       | 21.82  | 21.56 | 22.01  | 21.81 | 23            | 16QAM      | 20MHz     | 1                    | 99                    |
| 20.21                       | 20.49  | 20.29 | 20.73  | 20.51 | 22            | 16QAM      | 20MHz     | 50                   | 0                     |
| 20.17                       | 20.55  | 20.30 | 20.71  | 20.53 | 22            | 16QAM      | 20MHz     | 50                   | 25                    |
| 20.19                       | 20.55  | 20.34 | 20.74  | 20.53 | 22            | 16QAM      | 20MHz     | 50                   | 50                    |
| 20.26                       | 20.56  | 20.37 | 20.75  | 20.60 | 22            | 16QAM      | 20MHz     | 100                  | 0                     |

| LTE Band 66                 |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 131979                      | 132322 | 132665 | Channel       |            |           |                      |                       |
| 1710.7                      | 1745   | 1779.3 | Freq. (MHz)   |            |           |                      |                       |
| 22.98                       | 22.93  | 22.91  | 24            | QPSK       | 1.4MHz    | 1                    | 0                     |
| 22.88                       | 22.84  | 22.85  | 24            | QPSK       | 1.4MHz    | 1                    | 2                     |
| 22.88                       | 22.91  | 22.91  | 24            | QPSK       | 1.4MHz    | 1                    | 5                     |
| 22.91                       | 22.89  | 22.88  | 24            | QPSK       | 1.4MHz    | 3                    | 0                     |
| 22.87                       | 22.94  | 22.87  | 24            | QPSK       | 1.4MHz    | 3                    | 1                     |
| 22.88                       | 22.94  | 22.92  | 24            | QPSK       | 1.4MHz    | 3                    | 3                     |
| 21.93                       | 21.92  | 21.92  | 23            | QPSK       | 1.4MHz    | 6                    | 0                     |
| 22.25                       | 22.39  | 22.19  | 23            | 16QAM      | 1.4MHz    | 1                    | 0                     |
| 22.19                       | 22.33  | 22.66  | 23            | 16QAM      | 1.4MHz    | 1                    | 2                     |
| 22.33                       | 22.36  | 22.38  | 23            | 16QAM      | 1.4MHz    | 1                    | 5                     |
| 22.16                       | 22.17  | 22.09  | 23            | 16QAM      | 1.4MHz    | 3                    | 0                     |
| 22.06                       | 22.12  | 22.15  | 23            | 16QAM      | 1.4MHz    | 3                    | 1                     |
| 21.94                       | 21.96  | 22.27  | 23            | 16QAM      | 1.4MHz    | 3                    | 3                     |
| 21.09                       | 20.90  | 20.98  | 22            | 16QAM      | 1.4MHz    | 6                    | 0                     |

| LTE Band 66                 |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 131987                      | 132322 | 132657 | Channel       |            |           |                      |                       |
| 1711.5                      | 1745   | 1778.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.95                       | 22.84  | 22.89  | 24            | QPSK       | 3MHz      | 1                    | 0                     |
| 22.94                       | 22.82  | 22.90  | 24            | QPSK       | 3MHz      | 1                    | 7                     |
| 22.83                       | 22.92  | 22.87  | 24            | QPSK       | 3MHz      | 1                    | 14                    |
| 21.92                       | 21.91  | 21.89  | 23            | QPSK       | 3MHz      | 8                    | 0                     |
| 21.89                       | 21.90  | 21.88  | 23            | QPSK       | 3MHz      | 8                    | 3                     |
| 21.86                       | 21.90  | 21.87  | 23            | QPSK       | 3MHz      | 8                    | 7                     |
| 21.89                       | 21.94  | 21.87  | 23            | QPSK       | 3MHz      | 15                   | 0                     |
| 22.17                       | 22.26  | 22.52  | 23            | 16QAM      | 3MHz      | 1                    | 0                     |
| 22.37                       | 22.20  | 22.35  | 23            | 16QAM      | 3MHz      | 1                    | 7                     |
| 22.34                       | 22.38  | 21.86  | 23            | 16QAM      | 3MHz      | 1                    | 14                    |
| 20.93                       | 21.10  | 20.98  | 22            | 16QAM      | 3MHz      | 8                    | 0                     |
| 20.93                       | 20.99  | 20.84  | 22            | 16QAM      | 3MHz      | 8                    | 3                     |
| 21.06                       | 21.10  | 21.01  | 22            | 16QAM      | 3MHz      | 8                    | 7                     |
| 20.94                       | 20.99  | 20.91  | 22            | 16QAM      | 3MHz      | 15                   | 0                     |

| LTE Band 66                 |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 131997                      | 132322 | 132647 | Channel       |            |           |                      |                       |
| 1712.5                      | 1745   | 1777.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.80                       | 22.85  | 22.77  | 24            | QPSK       | 5MHz      | 1                    | 0                     |
| 22.77                       | 22.68  | 22.63  | 24            | QPSK       | 5MHz      | 1                    | 12                    |
| 22.77                       | 22.79  | 22.70  | 24            | QPSK       | 5MHz      | 1                    | 24                    |
| 21.74                       | 21.70  | 21.71  | 23            | QPSK       | 5MHz      | 12                   | 0                     |
| 21.74                       | 21.77  | 21.63  | 23            | QPSK       | 5MHz      | 12                   | 6                     |
| 21.77                       | 21.85  | 21.73  | 23            | QPSK       | 5MHz      | 12                   | 13                    |
| 21.74                       | 21.62  | 21.69  | 23            | QPSK       | 5MHz      | 25                   | 0                     |
| 21.99                       | 21.83  | 21.83  | 23            | 16QAM      | 5MHz      | 1                    | 0                     |
| 21.92                       | 21.90  | 22.16  | 23            | 16QAM      | 5MHz      | 1                    | 12                    |
| 21.74                       | 21.84  | 22.10  | 23            | 16QAM      | 5MHz      | 1                    | 24                    |
| 20.94                       | 20.77  | 20.66  | 22            | 16QAM      | 5MHz      | 12                   | 0                     |
| 20.83                       | 20.85  | 20.67  | 22            | 16QAM      | 5MHz      | 12                   | 6                     |
| 20.84                       | 20.82  | 20.81  | 22            | 16QAM      | 5MHz      | 12                   | 13                    |
| 20.95                       | 20.72  | 20.72  | 22            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 66                 |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 132022                      | 132322 | 132622 | Channel       |            |           |                      |                       |
| 1715                        | 1745   | 1775   | Freq. (MHz)   |            |           |                      |                       |
| 22.94                       | 23.04  | 22.96  | 24            | QPSK       | 10MHz     | 1                    | 0                     |
| 22.95                       | 22.89  | 22.91  | 24            | QPSK       | 10MHz     | 1                    | 24                    |
| 22.81                       | 22.93  | 22.78  | 24            | QPSK       | 10MHz     | 1                    | 49                    |
| 21.99                       | 21.86  | 21.86  | 23            | QPSK       | 10MHz     | 25                   | 0                     |
| 21.99                       | 21.90  | 21.93  | 23            | QPSK       | 10MHz     | 25                   | 12                    |
| 22.00                       | 21.72  | 21.83  | 23            | QPSK       | 10MHz     | 25                   | 25                    |
| 21.91                       | 21.93  | 22.00  | 23            | QPSK       | 10MHz     | 50                   | 0                     |
| 22.18                       | 21.67  | 22.49  | 23            | 16QAM      | 10MHz     | 1                    | 0                     |
| 22.07                       | 21.95  | 21.77  | 23            | 16QAM      | 10MHz     | 1                    | 24                    |
| 21.95                       | 21.92  | 22.12  | 23            | 16QAM      | 10MHz     | 1                    | 49                    |
| 20.99                       | 20.95  | 21.03  | 22            | 16QAM      | 10MHz     | 25                   | 0                     |
| 21.02                       | 20.91  | 20.93  | 22            | 16QAM      | 10MHz     | 25                   | 12                    |
| 21.04                       | 20.85  | 20.90  | 22            | 16QAM      | 10MHz     | 25                   | 25                    |
| 20.97                       | 20.99  | 21.07  | 22            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 66                 |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 132047                      | 132322 | 132597 | Channel       |            |           |                      |                       |
| 1717.5                      | 1745   | 1772.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.77                       | 22.96  | 23.01  | 24            | QPSK       | 15MHz     | 1                    | 0                     |
| 22.80                       | 22.83  | 22.88  | 24            | QPSK       | 15MHz     | 1                    | 37                    |
| 22.93                       | 23.02  | 22.89  | 24            | QPSK       | 15MHz     | 1                    | 74                    |
| 21.98                       | 22.02  | 22.01  | 23            | QPSK       | 15MHz     | 36                   | 0                     |
| 21.90                       | 21.92  | 21.91  | 23            | QPSK       | 15MHz     | 36                   | 19                    |
| 21.97                       | 22.01  | 22.00  | 23            | QPSK       | 15MHz     | 36                   | 39                    |
| 21.98                       | 22.04  | 22.07  | 23            | QPSK       | 15MHz     | 75                   | 0                     |
| 21.54                       | 21.60  | 22.27  | 23            | 16QAM      | 15MHz     | 1                    | 0                     |
| 22.11                       | 22.18  | 22.15  | 23            | 16QAM      | 15MHz     | 1                    | 37                    |
| 22.39                       | 22.19  | 22.00  | 23            | 16QAM      | 15MHz     | 1                    | 74                    |
| 21.01                       | 21.14  | 21.10  | 22            | 16QAM      | 15MHz     | 36                   | 0                     |
| 20.98                       | 21.04  | 21.05  | 22            | 16QAM      | 15MHz     | 36                   | 19                    |
| 20.92                       | 20.98  | 21.02  | 22            | 16QAM      | 15MHz     | 36                   | 39                    |
| 21.03                       | 21.06  | 21.09  | 22            | 16QAM      | 15MHz     | 75                   | 0                     |



| LTE Band 66                 |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 132072                      | 132322 | 132572 | Channel       |            |           |                      |                       |
| 1720                        | 1745   | 1770   | Freq. (MHz)   |            |           |                      |                       |
| 23.08                       | 23.02  | 23.03  | 24            | QPSK       | 20MHz     | 1                    | 0                     |
| 22.92                       | 23.06  | 22.99  | 24            | QPSK       | 20MHz     | 1                    | 49                    |
| 23.14                       | 23.06  | 23.11  | 24            | QPSK       | 20MHz     | 1                    | 99                    |
| 22.14                       | 22.11  | 22.14  | 23            | QPSK       | 20MHz     | 50                   | 0                     |
| 22.13                       | 22.11  | 22.13  | 23            | QPSK       | 20MHz     | 50                   | 25                    |
| 22.18                       | 22.21  | 22.17  | 23            | QPSK       | 20MHz     | 50                   | 50                    |
| 22.27                       | 22.23  | 22.25  | 23            | QPSK       | 20MHz     | 100                  | 0                     |
| 22.18                       | 22.32  | 22.41  | 23            | 16QAM      | 20MHz     | 1                    | 0                     |
| 21.86                       | 21.85  | 22.35  | 23            | 16QAM      | 20MHz     | 1                    | 49                    |
| 22.31                       | 21.99  | 22.30  | 23            | 16QAM      | 20MHz     | 1                    | 99                    |
| 21.18                       | 21.17  | 21.20  | 22            | 16QAM      | 20MHz     | 50                   | 0                     |
| 21.16                       | 21.10  | 21.18  | 22            | 16QAM      | 20MHz     | 50                   | 25                    |
| 21.32                       | 21.25  | 21.25  | 22            | 16QAM      | 20MHz     | 50                   | 50                    |
| 21.32                       | 21.23  | 21.28  | 22            | 16QAM      | 20MHz     | 100                  | 0                     |

# 11.4 Power Reduction

| Band     | Modulation | Date Rate<br>or<br>Sub-test | CH      |      | Frequency | Avg Conducted<br>power (dBm) | Tune up (dBm) |
|----------|------------|-----------------------------|---------|------|-----------|------------------------------|---------------|
| WCDMA II | RMC12.2K   | ---                         | Lowest  | 9262 | 1852.4    | 18.63                        | 19.00         |
|          |            |                             | Middle  | 9400 | 1880.0    | 18.66                        | 19.00         |
|          |            |                             | Highest | 9538 | 1907.6    | 18.57                        | 19.00         |
| HSDPA II | QPSK       | 1                           | Lowest  | 9262 | 1852.4    | 17.73                        | 19.00         |
|          |            |                             | Middle  | 9400 | 1880.0    | 17.91                        | 19.00         |
|          |            |                             | Highest | 9538 | 1907.6    | 17.77                        | 19.00         |
|          |            | 2                           | Lowest  | 9262 | 1852.4    | 17.66                        | 19.00         |
|          |            |                             | Middle  | 9400 | 1880.0    | 17.96                        | 19.00         |
|          |            |                             | Highest | 9538 | 1907.6    | 17.80                        | 19.00         |
|          |            | 3                           | Lowest  | 9262 | 1852.4    | 17.22                        | 18.50         |
|          |            |                             | Middle  | 9400 | 1880.0    | 17.42                        | 18.50         |
|          |            |                             | Highest | 9538 | 1907.6    | 17.22                        | 18.50         |
|          |            | 4                           | Lowest  | 9262 | 1852.4    | 17.15                        | 18.00         |
|          |            |                             | Middle  | 9400 | 1880.0    | 17.37                        | 18.00         |
|          |            |                             | Highest | 9538 | 1907.6    | 17.28                        | 18.00         |
| HSUPA II | QPSK       | 1                           | Lowest  | 9262 | 1852.4    | 17.74                        | 19.00         |
|          |            |                             | Middle  | 9400 | 1880.0    | 17.90                        | 19.00         |
|          |            |                             | Highest | 9538 | 1907.6    | 17.80                        | 19.00         |
|          |            | 2                           | Lowest  | 9262 | 1852.4    | 15.71                        | 17.00         |
|          |            |                             | Middle  | 9400 | 1880.0    | 15.90                        | 17.00         |
|          |            |                             | Highest | 9538 | 1907.6    | 15.72                        | 17.00         |
|          |            | 3                           | Lowest  | 9262 | 1852.4    | 16.68                        | 18.00         |
|          |            |                             | Middle  | 9400 | 1880.0    | 16.92                        | 18.00         |
|          |            |                             | Highest | 9538 | 1907.6    | 16.74                        | 18.00         |
|          |            | 4                           | Lowest  | 9262 | 1852.4    | 15.68                        | 17.00         |
|          |            |                             | Middle  | 9400 | 1880.0    | 15.93                        | 17.00         |
|          |            |                             | Highest | 9538 | 1907.6    | 15.77                        | 17.00         |
|          |            | 5                           | Lowest  | 9262 | 1852.4    | 17.67                        | 19.00         |
|          |            |                             | Middle  | 9400 | 1880.0    | 17.88                        | 19.00         |
|          |            |                             | Highest | 9538 | 1907.6    | 17.76                        | 19.00         |

| Band     | Modulation | Date Rate<br>or<br>Sub-test | CH      |      | Frequency<br>(MHz) | Avg Conducted<br>power (dBm) | Tune up (dBm) |
|----------|------------|-----------------------------|---------|------|--------------------|------------------------------|---------------|
| WCDMA IV | RMC12.2K   | ---                         | Lowest  | 1312 | 1712.4             | 17.15                        | 18.00         |
|          |            |                             | Middle  | 1413 | 1732.6             | 17.26                        | 18.00         |
|          |            |                             | Highest | 1513 | 1752.6             | 17.19                        | 18.00         |
| HSDPA IV | QPSK       | 1                           | Lowest  | 1312 | 1712.4             | 16.57                        | 18.00         |
|          |            |                             | Middle  | 1413 | 1732.6             | 16.81                        | 18.00         |
|          |            |                             | Highest | 1513 | 1752.6             | 16.74                        | 18.00         |
|          |            | 2                           | Lowest  | 1312 | 1712.4             | 16.59                        | 18.00         |
|          |            |                             | Middle  | 1413 | 1732.6             | 16.89                        | 18.00         |
|          |            |                             | Highest | 1513 | 1752.6             | 16.72                        | 18.00         |
|          |            | 3                           | Lowest  | 1312 | 1712.4             | 16.11                        | 17.50         |
|          |            |                             | Middle  | 1413 | 1732.6             | 16.35                        | 17.50         |
|          |            |                             | Highest | 1513 | 1752.6             | 16.25                        | 17.50         |
|          |            | 4                           | Lowest  | 1312 | 1712.4             | 16.14                        | 17.50         |
|          |            |                             | Middle  | 1413 | 1732.6             | 16.34                        | 17.50         |
|          |            |                             | Highest | 1513 | 1752.6             | 16.27                        | 17.50         |
| HSUPA IV |            | 1                           | Lowest  | 1312 | 1712.4             | 16.55                        | 18.00         |
|          |            |                             | Middle  | 1413 | 1732.6             | 16.87                        | 18.00         |
|          |            |                             | Highest | 1513 | 1752.6             | 16.77                        | 18.00         |
|          |            | 2                           | Lowest  | 1312 | 1712.4             | 14.60                        | 16.00         |
|          |            |                             | Middle  | 1413 | 1732.6             | 14.80                        | 16.00         |
|          |            |                             | Highest | 1513 | 1752.6             | 14.74                        | 16.00         |
|          |            | 3                           | Lowest  | 1312 | 1712.4             | 15.57                        | 17.00         |
|          |            |                             | Middle  | 1413 | 1732.6             | 15.86                        | 17.00         |
|          |            |                             | Highest | 1513 | 1752.6             | 15.76                        | 17.00         |
|          |            | 4                           | Lowest  | 1312 | 1712.4             | 14.61                        | 16.00         |
|          |            |                             | Middle  | 1413 | 1732.6             | 14.86                        | 16.00         |
|          |            |                             | Highest | 1513 | 1752.6             | 14.79                        | 16.00         |
|          |            | 5                           | Lowest  | 1312 | 1712.4             | 16.57                        | 18.00         |
|          |            |                             | Middle  | 1413 | 1732.6             | 16.85                        | 18.00         |
|          |            |                             | Highest | 1513 | 1752.6             | 16.82                        | 18.00         |

| Band    | Modulation | Date Rate<br>or<br>Sub-test | CH      |       | Frequency<br>(MHz) | Avg Conducted<br>power (dBm) | Tune up (dBm) |
|---------|------------|-----------------------------|---------|-------|--------------------|------------------------------|---------------|
| WCDMA V | RMC12.2K   | ---                         | Lowest  | 4132  | 826.4              | 20.44                        | 21.00         |
|         |            |                             | Middle  | 4182  | 836.4              | 20.47                        | 21.00         |
|         |            |                             | Highest | 4233  | 846.6              | 20.41                        | 21.00         |
| HSDPA V | QPSK       | 1                           | Lowest  | 4132  | 826.4              | 19.65                        | 21.00         |
|         |            |                             | Middle  | 4182  | 836.4              | 19.88                        | 21.00         |
|         |            |                             | Highest | 4233  | 846.6              | 19.70                        | 21.00         |
|         |            | 2                           | Lowest  | 4132  | 826.4              | 19.44                        | 21.00         |
|         |            |                             | Middle  | 41832 | 836.4              | 19.91                        | 21.00         |
|         |            |                             | Highest | 4233  | 846.6              | 19.55                        | 21.00         |
|         |            | 3                           | Lowest  | 4132  | 826.4              | 18.92                        | 20.50         |
|         |            |                             | Middle  | 4182  | 836.4              | 19.10                        | 20.50         |
|         |            |                             | Highest | 4233  | 846.6              | 19.07                        | 20.50         |
|         |            | 4                           | Lowest  | 4132  | 826.4              | 18.94                        | 20.50         |
|         |            |                             | Middle  | 4182  | 836.4              | 19.21                        | 20.50         |
|         |            |                             | Highest | 4233  | 846.6              | 19.26                        | 20.50         |
| HSUPA V |            | 1                           | Lowest  | 4132  | 826.4              | 19.48                        | 21.00         |
|         |            |                             | Middle  | 4182  | 836.4              | 19.58                        | 21.00         |
|         |            |                             | Highest | 4233  | 846.6              | 19.46                        | 21.00         |
|         |            | 2                           | Lowest  | 4132  | 826.4              | 17.29                        | 19.00         |
|         |            |                             | Middle  | 4182  | 836.4              | 17.83                        | 19.00         |
|         |            |                             | Highest | 4233  | 846.6              | 17.57                        | 19.00         |
|         |            | 3                           | Lowest  | 4132  | 826.4              | 18.45                        | 20.00         |
|         |            |                             | Middle  | 4182  | 836.4              | 18.76                        | 20.00         |
|         |            |                             | Highest | 4233  | 846.6              | 18.68                        | 20.00         |
|         |            | 4                           | Lowest  | 4132  | 826.4              | 17.58                        | 19.00         |
|         |            |                             | Middle  | 4182  | 836.4              | 17.80                        | 19.00         |
|         |            |                             | Highest | 4233  | 846.6              | 17.76                        | 19.00         |
|         |            | 5                           | Lowest  | 4132  | 826.4              | 19.34                        | 21.00         |
|         |            |                             | Middle  | 4182  | 836.4              | 19.61                        | 21.00         |
|         |            |                             | Highest | 4233  | 846.6              | 19.78                        | 21.00         |

| LTE Band 2                  |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 18607                       | 18900 | 19193  | Channel       |            |           |                      |                       |
| 1850.7                      | 1880  | 1909.3 | Freq. (MHz)   |            |           |                      |                       |
| 18.55                       | 18.60 | 18.42  | 19            | QPSK       | 1.4MHz    | 1                    | 0                     |
| 18.47                       | 18.50 | 18.24  | 19            | QPSK       | 1.4MHz    | 1                    | 2                     |
| 18.40                       | 18.56 | 18.29  | 19            | QPSK       | 1.4MHz    | 1                    | 5                     |
| 18.51                       | 18.56 | 18.36  | 19            | QPSK       | 1.4MHz    | 3                    | 0                     |
| 18.42                       | 18.54 | 18.36  | 19            | QPSK       | 1.4MHz    | 3                    | 1                     |
| 18.44                       | 18.48 | 18.31  | 19            | QPSK       | 1.4MHz    | 3                    | 3                     |
| 17.42                       | 17.53 | 17.27  | 18            | QPSK       | 1.4MHz    | 6                    | 0                     |
| 17.89                       | 17.92 | 17.90  | 18            | 16QAM      | 1.4MHz    | 1                    | 0                     |
| 17.52                       | 17.77 | 17.27  | 18            | 16QAM      | 1.4MHz    | 1                    | 2                     |
| 17.95                       | 17.93 | 17.65  | 18            | 16QAM      | 1.4MHz    | 1                    | 5                     |
| 17.62                       | 17.57 | 17.20  | 18            | 16QAM      | 1.4MHz    | 3                    | 0                     |
| 17.59                       | 17.55 | 17.19  | 18            | 16QAM      | 1.4MHz    | 3                    | 1                     |
| 17.45                       | 17.39 | 17.28  | 18            | 16QAM      | 1.4MHz    | 3                    | 3                     |
| 16.50                       | 16.56 | 16.18  | 17            | 16QAM      | 1.4MHz    | 6                    | 0                     |

| LTE Band 2                  |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 18615                       | 18900 | 19185  | Channel       |            |           |                      |                       |
| 1851.5                      | 1880  | 1908.5 | Freq. (MHz)   |            |           |                      |                       |
| 18.33                       | 18.44 | 18.28  | 19            | QPSK       | 3MHz      | 1                    | 0                     |
| 18.28                       | 18.49 | 18.23  | 19            | QPSK       | 3MHz      | 1                    | 7                     |
| 18.27                       | 18.42 | 18.08  | 19            | QPSK       | 3MHz      | 1                    | 14                    |
| 17.32                       | 17.54 | 17.29  | 18            | QPSK       | 3MHz      | 8                    | 0                     |
| 17.32                       | 17.51 | 17.27  | 18            | QPSK       | 3MHz      | 8                    | 3                     |
| 17.30                       | 17.48 | 17.25  | 18            | QPSK       | 3MHz      | 8                    | 7                     |
| 17.31                       | 17.48 | 17.29  | 18            | QPSK       | 3MHz      | 15                   | 0                     |
| 17.82                       | 17.14 | 17.41  | 18            | 16QAM      | 3MHz      | 1                    | 0                     |
| 17.60                       | 17.59 | 17.41  | 18            | 16QAM      | 3MHz      | 1                    | 7                     |
| 17.03                       | 17.61 | 17.58  | 18            | 16QAM      | 3MHz      | 1                    | 14                    |
| 16.29                       | 16.55 | 16.22  | 17            | 16QAM      | 3MHz      | 8                    | 0                     |
| 16.44                       | 16.57 | 16.36  | 17            | 16QAM      | 3MHz      | 8                    | 3                     |
| 16.56                       | 16.50 | 16.29  | 17            | 16QAM      | 3MHz      | 8                    | 7                     |
| 16.37                       | 16.56 | 16.27  | 17            | 16QAM      | 3MHz      | 15                   | 0                     |

| LTE Band 2                  |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 18625                       | 18900 | 19175  | Channel       |            |           |                      |                       |
| 1852.5                      | 1880  | 1907.5 | Freq. (MHz)   |            |           |                      |                       |
| 18.42                       | 18.59 | 18.23  | 19            | QPSK       | 5MHz      | 1                    | 0                     |
| 18.26                       | 18.48 | 18.28  | 19            | QPSK       | 5MHz      | 1                    | 12                    |
| 18.24                       | 18.44 | 18.17  | 19            | QPSK       | 5MHz      | 1                    | 24                    |
| 17.37                       | 17.49 | 17.17  | 18            | QPSK       | 5MHz      | 12                   | 0                     |
| 17.36                       | 17.51 | 17.24  | 18            | QPSK       | 5MHz      | 12                   | 6                     |
| 17.24                       | 17.47 | 17.24  | 18            | QPSK       | 5MHz      | 12                   | 13                    |
| 17.36                       | 17.49 | 17.30  | 18            | QPSK       | 5MHz      | 25                   | 0                     |
| 17.64                       | 17.89 | 17.50  | 18            | 16QAM      | 5MHz      | 1                    | 0                     |
| 17.32                       | 17.56 | 17.59  | 18            | 16QAM      | 5MHz      | 1                    | 12                    |
| 17.45                       | 17.74 | 17.38  | 18            | 16QAM      | 5MHz      | 1                    | 24                    |
| 16.41                       | 16.66 | 16.19  | 17            | 16QAM      | 5MHz      | 12                   | 0                     |
| 16.41                       | 16.64 | 16.30  | 17            | 16QAM      | 5MHz      | 12                   | 6                     |
| 16.26                       | 16.51 | 16.19  | 17            | 16QAM      | 5MHz      | 12                   | 13                    |
| 16.37                       | 16.46 | 16.25  | 17            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 2                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 18650                       | 18900 | 19150 | Channel       |            |           |                      |                       |
| 1855                        | 1880  | 1905  | Freq. (MHz)   |            |           |                      |                       |
| 18.51                       | 18.67 | 18.26 | 19            | QPSK       | 10MHz     | 1                    | 0                     |
| 18.42                       | 18.57 | 18.36 | 19            | QPSK       | 10MHz     | 1                    | 24                    |
| 18.19                       | 18.61 | 18.33 | 19            | QPSK       | 10MHz     | 1                    | 49                    |
| 17.55                       | 17.62 | 17.26 | 18            | QPSK       | 10MHz     | 25                   | 0                     |
| 17.44                       | 17.60 | 17.26 | 18            | QPSK       | 10MHz     | 25                   | 12                    |
| 17.40                       | 17.53 | 17.38 | 18            | QPSK       | 10MHz     | 25                   | 25                    |
| 17.41                       | 17.51 | 17.24 | 18            | QPSK       | 10MHz     | 50                   | 0                     |
| 17.36                       | 17.18 | 17.26 | 18            | 16QAM      | 10MHz     | 1                    | 0                     |
| 17.86                       | 17.34 | 17.62 | 18            | 16QAM      | 10MHz     | 1                    | 24                    |
| 17.67                       | 17.89 | 17.73 | 18            | 16QAM      | 10MHz     | 1                    | 49                    |
| 16.49                       | 16.72 | 16.28 | 17            | 16QAM      | 10MHz     | 25                   | 0                     |
| 16.43                       | 16.73 | 16.38 | 17            | 16QAM      | 10MHz     | 25                   | 12                    |
| 16.25                       | 16.60 | 16.46 | 17            | 16QAM      | 10MHz     | 25                   | 25                    |
| 16.44                       | 16.60 | 16.37 | 17            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 2                  |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 18675                       | 18900 | 19125  | Channel       |            |           |                      |                       |
| 1857.5                      | 1880  | 1902.5 | Freq. (MHz)   |            |           |                      |                       |
| 18.47                       | 18.49 | 18.08  | 19            | QPSK       | 15MHz     | 1                    | 0                     |
| 18.32                       | 18.50 | 18.19  | 19            | QPSK       | 15MHz     | 1                    | 37                    |
| 18.18                       | 18.41 | 18.34  | 19            | QPSK       | 15MHz     | 1                    | 74                    |
| 17.40                       | 17.57 | 17.20  | 18            | QPSK       | 15MHz     | 36                   | 0                     |
| 17.30                       | 17.60 | 17.26  | 18            | QPSK       | 15MHz     | 36                   | 19                    |
| 17.28                       | 17.49 | 17.37  | 18            | QPSK       | 15MHz     | 36                   | 39                    |
| 17.35                       | 17.51 | 17.30  | 18            | QPSK       | 15MHz     | 75                   | 0                     |
| 17.49                       | 17.91 | 17.25  | 18            | 16QAM      | 15MHz     | 1                    | 0                     |
| 17.56                       | 17.96 | 17.26  | 18            | 16QAM      | 15MHz     | 1                    | 37                    |
| 17.51                       | 17.43 | 17.49  | 18            | 16QAM      | 15MHz     | 1                    | 74                    |
| 16.39                       | 16.66 | 16.22  | 17            | 16QAM      | 15MHz     | 36                   | 0                     |
| 16.33                       | 16.74 | 16.23  | 17            | 16QAM      | 15MHz     | 36                   | 19                    |
| 16.36                       | 16.67 | 16.39  | 17            | 16QAM      | 15MHz     | 36                   | 39                    |
| 16.37                       | 16.61 | 16.57  | 17            | 16QAM      | 15MHz     | 75                   | 0                     |

| LTE Band 2                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 18700                       | 18900 | 19100 | Channel       |            |           |                      |                       |
| 1860                        | 1880  | 1900  | Freq. (MHz)   |            |           |                      |                       |
| 18.79                       | 18.65 | 18.77 | 19            | QPSK       | 20MHz     | 1                    | 0                     |
| 18.51                       | 18.85 | 18.43 | 19            | QPSK       | 20MHz     | 1                    | 49                    |
| 18.58                       | 18.53 | 18.30 | 19            | QPSK       | 20MHz     | 1                    | 99                    |
| 17.55                       | 17.65 | 17.36 | 18            | QPSK       | 20MHz     | 50                   | 0                     |
| 17.45                       | 17.59 | 17.30 | 18            | QPSK       | 20MHz     | 50                   | 25                    |
| 17.41                       | 17.56 | 17.35 | 18            | QPSK       | 20MHz     | 50                   | 50                    |
| 17.51                       | 17.68 | 17.54 | 18            | QPSK       | 20MHz     | 100                  | 0                     |
| 17.11                       | 17.83 | 17.81 | 18            | 16QAM      | 20MHz     | 1                    | 0                     |
| 17.57                       | 17.32 | 16.85 | 18            | 16QAM      | 20MHz     | 1                    | 49                    |
| 17.79                       | 17.20 | 17.91 | 18            | 16QAM      | 20MHz     | 1                    | 99                    |
| 16.51                       | 16.66 | 16.20 | 17            | 16QAM      | 20MHz     | 50                   | 0                     |
| 16.42                       | 16.65 | 16.34 | 17            | 16QAM      | 20MHz     | 50                   | 25                    |
| 16.51                       | 16.58 | 16.39 | 17            | 16QAM      | 20MHz     | 50                   | 50                    |
| 16.59                       | 16.69 | 16.55 | 17            | 16QAM      | 20MHz     | 100                  | 0                     |

| LTE Band 4                  |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 19957                       | 20175  | 20393  | Channel       |            |           |                      |                       |
| 1710.7                      | 1732.5 | 1754.3 | Freq. (MHz)   |            |           |                      |                       |
| 17.49                       | 17.58  | 17.86  | 18.5          | QPSK       | 1.4MHz    | 1                    | 0                     |
| 17.43                       | 17.61  | 17.86  | 18.5          | QPSK       | 1.4MHz    | 1                    | 2                     |
| 17.63                       | 17.57  | 17.81  | 18.5          | QPSK       | 1.4MHz    | 1                    | 5                     |
| 17.50                       | 17.58  | 17.91  | 18.5          | QPSK       | 1.4MHz    | 3                    | 0                     |
| 17.58                       | 17.58  | 17.91  | 18.5          | QPSK       | 1.4MHz    | 3                    | 1                     |
| 17.61                       | 17.63  | 17.86  | 18.5          | QPSK       | 1.4MHz    | 3                    | 3                     |
| 16.64                       | 16.65  | 16.94  | 17.5          | QPSK       | 1.4MHz    | 6                    | 0                     |
| 16.81                       | 17.06  | 17.37  | 17.5          | 16QAM      | 1.4MHz    | 1                    | 0                     |
| 16.98                       | 16.94  | 17.37  | 17.5          | 16QAM      | 1.4MHz    | 1                    | 2                     |
| 16.71                       | 17.00  | 17.09  | 17.5          | 16QAM      | 1.4MHz    | 1                    | 5                     |
| 16.52                       | 16.77  | 16.95  | 17.5          | 16QAM      | 1.4MHz    | 3                    | 0                     |
| 16.51                       | 16.87  | 16.76  | 17.5          | 16QAM      | 1.4MHz    | 3                    | 1                     |
| 16.67                       | 16.92  | 16.87  | 17.5          | 16QAM      | 1.4MHz    | 3                    | 3                     |
| 15.77                       | 15.52  | 16.15  | 16.5          | 16QAM      | 1.4MHz    | 6                    | 0                     |

| LTE Band 4                  |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 19965                       | 20175  | 20385  | Channel       |            |           |                      |                       |
| 1711.5                      | 1732.5 | 1753.5 | Freq. (MHz)   |            |           |                      |                       |
| 17.56                       | 17.54  | 17.74  | 18.5          | QPSK       | 3MHz      | 1                    | 0                     |
| 17.55                       | 17.58  | 17.88  | 18.5          | QPSK       | 3MHz      | 1                    | 7                     |
| 17.74                       | 17.57  | 17.82  | 18.5          | QPSK       | 3MHz      | 1                    | 14                    |
| 16.62                       | 16.69  | 16.88  | 17.5          | QPSK       | 3MHz      | 8                    | 0                     |
| 16.60                       | 16.66  | 16.82  | 17.5          | QPSK       | 3MHz      | 8                    | 3                     |
| 16.65                       | 16.60  | 16.92  | 17.5          | QPSK       | 3MHz      | 8                    | 7                     |
| 16.61                       | 16.66  | 16.82  | 17.5          | QPSK       | 3MHz      | 15                   | 0                     |
| 16.87                       | 16.95  | 17.35  | 17.5          | 16QAM      | 3MHz      | 1                    | 0                     |
| 16.27                       | 16.92  | 17.03  | 17.5          | 16QAM      | 3MHz      | 1                    | 7                     |
| 17.00                       | 16.89  | 17.17  | 17.5          | 16QAM      | 3MHz      | 1                    | 14                    |
| 15.77                       | 15.72  | 15.84  | 16.5          | 16QAM      | 3MHz      | 8                    | 0                     |
| 15.69                       | 15.71  | 15.89  | 16.5          | 16QAM      | 3MHz      | 8                    | 3                     |
| 15.67                       | 15.60  | 15.93  | 16.5          | 16QAM      | 3MHz      | 8                    | 7                     |
| 15.64                       | 15.68  | 15.98  | 16.5          | 16QAM      | 3MHz      | 15                   | 0                     |

| LTE Band 4                  |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 19975                       | 20175  | 20375  | Channel       |            |           |                      |                       |
| 1712.5                      | 1732.5 | 1752.5 | Freq. (MHz)   |            |           |                      |                       |
| 17.58                       | 17.79  | 17.88  | 18.5          | QPSK       | 5MHz      | 1                    | 0                     |
| 17.64                       | 17.68  | 17.87  | 18.5          | QPSK       | 5MHz      | 1                    | 12                    |
| 17.72                       | 17.65  | 17.93  | 18.5          | QPSK       | 5MHz      | 1                    | 24                    |
| 16.66                       | 16.69  | 16.81  | 17.5          | QPSK       | 5MHz      | 12                   | 0                     |
| 16.69                       | 16.66  | 16.87  | 17.5          | QPSK       | 5MHz      | 12                   | 6                     |
| 16.73                       | 16.60  | 16.88  | 17.5          | QPSK       | 5MHz      | 12                   | 13                    |
| 16.73                       | 16.73  | 16.96  | 17.5          | QPSK       | 5MHz      | 25                   | 0                     |
| 16.83                       | 16.45  | 17.08  | 17.5          | 16QAM      | 5MHz      | 1                    | 0                     |
| 16.81                       | 17.12  | 17.13  | 17.5          | 16QAM      | 5MHz      | 1                    | 12                    |
| 16.87                       | 16.88  | 17.33  | 17.5          | 16QAM      | 5MHz      | 1                    | 24                    |
| 15.58                       | 15.78  | 15.82  | 16.5          | 16QAM      | 5MHz      | 12                   | 0                     |
| 15.72                       | 15.79  | 15.85  | 16.5          | 16QAM      | 5MHz      | 12                   | 6                     |
| 15.83                       | 15.60  | 15.93  | 16.5          | 16QAM      | 5MHz      | 12                   | 13                    |
| 15.79                       | 15.71  | 16.01  | 16.5          | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 4                  |        |       |               |            |           |                      |                       |
|-----------------------------|--------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20000                       | 20175  | 20350 | Channel       |            |           |                      |                       |
| 1715                        | 1732.5 | 1750  | Freq. (MHz)   |            |           |                      |                       |
| 17.64                       | 17.95  | 17.73 | 18.5          | QPSK       | 10MHz     | 1                    | 0                     |
| 17.77                       | 17.82  | 17.84 | 18.5          | QPSK       | 10MHz     | 1                    | 24                    |
| 17.96                       | 17.59  | 17.92 | 18.5          | QPSK       | 10MHz     | 1                    | 49                    |
| 16.81                       | 16.78  | 16.85 | 17.5          | QPSK       | 10MHz     | 25                   | 0                     |
| 16.79                       | 16.73  | 16.88 | 17.5          | QPSK       | 10MHz     | 25                   | 12                    |
| 16.93                       | 16.65  | 16.87 | 17.5          | QPSK       | 10MHz     | 25                   | 25                    |
| 16.84                       | 16.65  | 16.87 | 17.5          | QPSK       | 10MHz     | 50                   | 0                     |
| 16.71                       | 17.11  | 16.84 | 17.5          | 16QAM      | 10MHz     | 1                    | 0                     |
| 17.05                       | 17.29  | 16.98 | 17.5          | 16QAM      | 10MHz     | 1                    | 24                    |
| 17.14                       | 16.93  | 17.00 | 17.5          | 16QAM      | 10MHz     | 1                    | 49                    |
| 15.88                       | 15.90  | 15.94 | 16.5          | 16QAM      | 10MHz     | 25                   | 0                     |
| 16.01                       | 15.91  | 15.91 | 16.5          | 16QAM      | 10MHz     | 25                   | 12                    |
| 16.04                       | 15.70  | 15.97 | 16.5          | 16QAM      | 10MHz     | 25                   | 25                    |
| 15.89                       | 15.78  | 15.97 | 16.5          | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 4                  |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20025                       | 20175  | 20325  | Channel       |            |           |                      |                       |
| 1717.5                      | 1732.5 | 1747.5 | Freq. (MHz)   |            |           |                      |                       |
| 17.73                       | 17.93  | 17.73  | 18.5          | QPSK       | 15MHz     | 1                    | 0                     |
| 17.90                       | 17.62  | 17.74  | 18.5          | QPSK       | 15MHz     | 1                    | 37                    |
| 17.84                       | 17.37  | 17.92  | 18.5          | QPSK       | 15MHz     | 1                    | 74                    |
| 16.86                       | 16.83  | 16.69  | 17.5          | QPSK       | 15MHz     | 36                   | 0                     |
| 16.96                       | 16.72  | 16.84  | 17.5          | QPSK       | 15MHz     | 36                   | 19                    |
| 16.90                       | 16.64  | 16.87  | 17.5          | QPSK       | 15MHz     | 36                   | 39                    |
| 17.01                       | 16.69  | 16.91  | 17.5          | QPSK       | 15MHz     | 75                   | 0                     |
| 16.95                       | 17.21  | 16.82  | 17.5          | 16QAM      | 15MHz     | 1                    | 0                     |
| 17.32                       | 16.87  | 16.46  | 17.5          | 16QAM      | 15MHz     | 1                    | 37                    |
| 17.13                       | 16.84  | 17.45  | 17.5          | 16QAM      | 15MHz     | 1                    | 74                    |
| 15.99                       | 15.81  | 15.67  | 16.5          | 16QAM      | 15MHz     | 36                   | 0                     |
| 15.99                       | 15.73  | 15.83  | 16.5          | 16QAM      | 15MHz     | 36                   | 19                    |
| 16.08                       | 15.56  | 15.78  | 16.5          | 16QAM      | 15MHz     | 36                   | 39                    |
| 15.95                       | 15.75  | 15.94  | 16.5          | 16QAM      | 15MHz     | 75                   | 0                     |

| LTE Band 4                  |        |       |               |            |           |                      |                       |
|-----------------------------|--------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20050                       | 20175  | 20300 | Channel       |            |           |                      |                       |
| 1720                        | 1732.5 | 1745  | Freq. (MHz)   |            |           |                      |                       |
| 17.84                       | 18.06  | 17.81 | 18.5          | QPSK       | 20MHz     | 1                    | 0                     |
| 18.03                       | 17.94  | 17.62 | 18.5          | QPSK       | 20MHz     | 1                    | 49                    |
| 17.81                       | 17.55  | 17.95 | 18.5          | QPSK       | 20MHz     | 1                    | 99                    |
| 16.92                       | 16.88  | 16.70 | 17.5          | QPSK       | 20MHz     | 50                   | 0                     |
| 16.87                       | 16.71  | 16.79 | 17.5          | QPSK       | 20MHz     | 50                   | 25                    |
| 16.95                       | 16.65  | 16.84 | 17.5          | QPSK       | 20MHz     | 50                   | 50                    |
| 16.95                       | 16.87  | 16.93 | 17.5          | QPSK       | 20MHz     | 100                  | 0                     |
| 17.19                       | 17.41  | 17.41 | 17.5          | 16QAM      | 20MHz     | 1                    | 0                     |
| 17.42                       | 17.10  | 17.16 | 17.5          | 16QAM      | 20MHz     | 1                    | 49                    |
| 16.91                       | 17.05  | 16.83 | 17.5          | 16QAM      | 20MHz     | 1                    | 99                    |
| 16.00                       | 15.90  | 15.75 | 16.5          | 16QAM      | 20MHz     | 50                   | 0                     |
| 15.89                       | 15.73  | 15.80 | 16.5          | 16QAM      | 20MHz     | 50                   | 25                    |
| 16.04                       | 15.63  | 15.92 | 16.5          | 16QAM      | 20MHz     | 50                   | 50                    |
| 16.07                       | 15.85  | 16.05 | 16.5          | 16QAM      | 20MHz     | 100                  | 0                     |

| LTE Band 5                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20407                       | 20525 | 20643 | Channel       |            |           |                      |                       |
| 824.7                       | 836.5 | 848.3 | Freq. (MHz)   |            |           |                      |                       |
| 19.90                       | 19.95 | 20.04 | 21            | QPSK       | 1.4MHz    | 1                    | 0                     |
| 19.85                       | 20.03 | 19.97 | 21            | QPSK       | 1.4MHz    | 1                    | 2                     |
| 19.92                       | 20.00 | 19.93 | 21            | QPSK       | 1.4MHz    | 1                    | 5                     |
| 19.88                       | 19.97 | 20.03 | 21            | QPSK       | 1.4MHz    | 3                    | 0                     |
| 19.91                       | 19.97 | 19.99 | 21            | QPSK       | 1.4MHz    | 3                    | 1                     |
| 19.91                       | 20.00 | 19.97 | 21            | QPSK       | 1.4MHz    | 3                    | 3                     |
| 18.86                       | 18.98 | 18.96 | 20            | QPSK       | 1.4MHz    | 6                    | 0                     |
| 19.39                       | 19.00 | 19.05 | 20            | 16QAM      | 1.4MHz    | 1                    | 0                     |
| 19.20                       | 19.56 | 19.54 | 20            | 16QAM      | 1.4MHz    | 1                    | 2                     |
| 19.21                       | 19.37 | 19.69 | 20            | 16QAM      | 1.4MHz    | 1                    | 5                     |
| 19.13                       | 19.21 | 19.28 | 20            | 16QAM      | 1.4MHz    | 3                    | 0                     |
| 19.03                       | 18.89 | 19.27 | 20            | 16QAM      | 1.4MHz    | 3                    | 1                     |
| 19.16                       | 18.90 | 19.01 | 20            | 16QAM      | 1.4MHz    | 3                    | 3                     |
| 17.98                       | 17.91 | 18.14 | 19            | 16QAM      | 1.4MHz    | 6                    | 0                     |

| LTE Band 5                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20415                       | 20525 | 20635 | Channel       |            |           |                      |                       |
| 825.5                       | 836.5 | 847.5 | Freq. (MHz)   |            |           |                      |                       |
| 19.78                       | 19.90 | 20.01 | 21            | QPSK       | 3MHz      | 1                    | 0                     |
| 19.99                       | 20.01 | 19.87 | 21            | QPSK       | 3MHz      | 1                    | 7                     |
| 19.89                       | 19.86 | 19.83 | 21            | QPSK       | 3MHz      | 1                    | 14                    |
| 18.84                       | 18.90 | 18.95 | 20            | QPSK       | 3MHz      | 8                    | 0                     |
| 18.90                       | 18.88 | 18.84 | 20            | QPSK       | 3MHz      | 8                    | 3                     |
| 18.86                       | 18.88 | 18.92 | 20            | QPSK       | 3MHz      | 8                    | 7                     |
| 18.89                       | 18.89 | 18.81 | 20            | QPSK       | 3MHz      | 15                   | 0                     |
| 19.43                       | 19.40 | 19.19 | 20            | 16QAM      | 3MHz      | 1                    | 0                     |
| 19.19                       | 19.33 | 19.07 | 20            | 16QAM      | 3MHz      | 1                    | 7                     |
| 19.02                       | 19.48 | 19.04 | 20            | 16QAM      | 3MHz      | 1                    | 14                    |
| 17.90                       | 17.96 | 17.97 | 19            | 16QAM      | 3MHz      | 8                    | 0                     |
| 17.84                       | 18.01 | 17.80 | 19            | 16QAM      | 3MHz      | 8                    | 3                     |
| 17.89                       | 17.95 | 17.93 | 19            | 16QAM      | 3MHz      | 8                    | 7                     |
| 17.85                       | 17.90 | 17.70 | 19            | 16QAM      | 3MHz      | 15                   | 0                     |

| LTE Band 5                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20425                       | 20525 | 20625 | Channel       |            |           |                      |                       |
| 826.5                       | 836.5 | 846.5 | Freq. (MHz)   |            |           |                      |                       |
| 19.95                       | 19.96 | 20.04 | 21            | QPSK       | 5MHz      | 1                    | 0                     |
| 20.05                       | 19.88 | 19.97 | 21            | QPSK       | 5MHz      | 1                    | 12                    |
| 20.09                       | 19.94 | 19.91 | 21            | QPSK       | 5MHz      | 1                    | 24                    |
| 18.92                       | 18.94 | 18.88 | 20            | QPSK       | 5MHz      | 12                   | 0                     |
| 18.93                       | 18.92 | 19.00 | 20            | QPSK       | 5MHz      | 12                   | 6                     |
| 18.97                       | 18.92 | 18.93 | 20            | QPSK       | 5MHz      | 12                   | 13                    |
| 18.97                       | 18.97 | 18.99 | 20            | QPSK       | 5MHz      | 25                   | 0                     |
| 19.09                       | 19.24 | 19.55 | 20            | 16QAM      | 5MHz      | 1                    | 0                     |
| 18.72                       | 19.40 | 19.53 | 20            | 16QAM      | 5MHz      | 1                    | 12                    |
| 19.31                       | 19.34 | 19.25 | 20            | 16QAM      | 5MHz      | 1                    | 24                    |
| 17.98                       | 18.06 | 17.95 | 19            | 16QAM      | 5MHz      | 12                   | 0                     |
| 17.91                       | 18.04 | 18.04 | 19            | 16QAM      | 5MHz      | 12                   | 6                     |
| 18.07                       | 17.94 | 17.98 | 19            | 16QAM      | 5MHz      | 12                   | 13                    |
| 18.04                       | 18.05 | 17.89 | 19            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 5                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20450                       | 20525 | 20600 | Channel       |            |           |                      |                       |
| 829                         | 836.5 | 844   | Freq. (MHz)   |            |           |                      |                       |
| 20.14                       | 20.20 | 20.08 | 21            | QPSK       | 10MHz     | 1                    | 0                     |
| 20.12                       | 19.96 | 20.07 | 21            | QPSK       | 10MHz     | 1                    | 24                    |
| 20.12                       | 20.08 | 19.94 | 21            | QPSK       | 10MHz     | 1                    | 49                    |
| 19.07                       | 19.06 | 19.07 | 20            | QPSK       | 10MHz     | 25                   | 0                     |
| 19.10                       | 19.03 | 19.12 | 20            | QPSK       | 10MHz     | 25                   | 12                    |
| 19.21                       | 19.07 | 19.07 | 20            | QPSK       | 10MHz     | 25                   | 25                    |
| 19.16                       | 19.02 | 19.12 | 20            | QPSK       | 10MHz     | 50                   | 0                     |
| 19.62                       | 19.81 | 19.54 | 20            | 16QAM      | 10MHz     | 1                    | 0                     |
| 19.71                       | 19.47 | 19.35 | 20            | 16QAM      | 10MHz     | 1                    | 24                    |
| 19.64                       | 19.47 | 19.45 | 20            | 16QAM      | 10MHz     | 1                    | 49                    |
| 18.20                       | 18.17 | 18.13 | 19            | 16QAM      | 10MHz     | 25                   | 0                     |
| 18.27                       | 18.11 | 18.18 | 19            | 16QAM      | 10MHz     | 25                   | 12                    |
| 18.37                       | 18.02 | 18.11 | 19            | 16QAM      | 10MHz     | 25                   | 25                    |
| 18.22                       | 18.11 | 18.30 | 19            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 7                  |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20775                       | 21100 | 21425  | Channel       |            |           |                      |                       |
| 2502.5                      | 2535  | 2567.5 | Freq. (MHz)   |            |           |                      |                       |
| 14.52                       | 14.53 | 14.83  | 15.5          | QPSK       | 5MHz      | 1                    | 0                     |
| 14.50                       | 14.51 | 14.82  | 15.5          | QPSK       | 5MHz      | 1                    | 12                    |
| 14.56                       | 14.56 | 14.86  | 15.5          | QPSK       | 5MHz      | 1                    | 24                    |
| 13.55                       | 13.59 | 13.83  | 14.5          | QPSK       | 5MHz      | 12                   | 0                     |
| 13.63                       | 13.61 | 13.82  | 14.5          | QPSK       | 5MHz      | 12                   | 6                     |
| 13.59                       | 13.63 | 13.82  | 14.5          | QPSK       | 5MHz      | 12                   | 13                    |
| 13.60                       | 13.63 | 13.81  | 14.5          | QPSK       | 5MHz      | 25                   | 0                     |
| 13.45                       | 14.04 | 14.08  | 14.5          | 16QAM      | 5MHz      | 1                    | 0                     |
| 13.63                       | 14.00 | 13.94  | 14.5          | 16QAM      | 5MHz      | 1                    | 12                    |
| 13.73                       | 13.82 | 14.14  | 14.5          | 16QAM      | 5MHz      | 1                    | 24                    |
| 12.65                       | 12.64 | 12.76  | 13.5          | 16QAM      | 5MHz      | 12                   | 0                     |
| 12.66                       | 12.56 | 12.79  | 13.5          | 16QAM      | 5MHz      | 12                   | 6                     |
| 12.62                       | 12.72 | 12.73  | 13.5          | 16QAM      | 5MHz      | 12                   | 13                    |
| 12.60                       | 12.61 | 12.82  | 13.5          | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 7                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20800                       | 21100 | 21400 | Channel       |            |           |                      |                       |
| 2505                        | 2535  | 2565  | Freq. (MHz)   |            |           |                      |                       |
| 14.65                       | 14.50 | 14.94 | 15.5          | QPSK       | 10MHz     | 1                    | 0                     |
| 14.54                       | 14.57 | 14.90 | 15.5          | QPSK       | 10MHz     | 1                    | 24                    |
| 14.71                       | 14.91 | 14.92 | 15.5          | QPSK       | 10MHz     | 1                    | 49                    |
| 13.64                       | 13.73 | 13.88 | 14.5          | QPSK       | 10MHz     | 25                   | 0                     |
| 13.66                       | 13.68 | 13.92 | 14.5          | QPSK       | 10MHz     | 25                   | 12                    |
| 13.64                       | 13.70 | 13.91 | 14.5          | QPSK       | 10MHz     | 25                   | 25                    |
| 13.58                       | 13.73 | 13.89 | 14.5          | QPSK       | 10MHz     | 50                   | 0                     |
| 13.51                       | 13.89 | 14.08 | 14.5          | 16QAM      | 10MHz     | 1                    | 0                     |
| 13.25                       | 13.58 | 13.51 | 14.5          | 16QAM      | 10MHz     | 1                    | 24                    |
| 13.80                       | 14.04 | 13.51 | 14.5          | 16QAM      | 10MHz     | 1                    | 49                    |
| 12.68                       | 12.78 | 12.90 | 13.5          | 16QAM      | 10MHz     | 25                   | 0                     |
| 12.73                       | 12.77 | 12.94 | 13.5          | 16QAM      | 10MHz     | 25                   | 12                    |
| 12.69                       | 12.74 | 12.93 | 13.5          | 16QAM      | 10MHz     | 25                   | 25                    |
| 12.56                       | 12.69 | 12.97 | 13.5          | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 7                  |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20825                       | 21100 | 21375  | Channel       |            |           |                      |                       |
| 2507.5                      | 2535  | 2562.5 | Freq. (MHz)   |            |           |                      |                       |
| 14.51                       | 14.59 | 14.89  | 15.5          | QPSK       | 15MHz     | 1                    | 0                     |
| 14.54                       | 14.65 | 14.87  | 15.5          | QPSK       | 15MHz     | 1                    | 37                    |
| 14.65                       | 14.71 | 14.90  | 15.5          | QPSK       | 15MHz     | 1                    | 74                    |
| 13.68                       | 13.64 | 13.96  | 14.5          | QPSK       | 15MHz     | 36                   | 0                     |
| 13.59                       | 13.74 | 13.95  | 14.5          | QPSK       | 15MHz     | 36                   | 19                    |
| 13.67                       | 13.86 | 13.98  | 14.5          | QPSK       | 15MHz     | 36                   | 39                    |
| 13.69                       | 13.79 | 13.98  | 14.5          | QPSK       | 15MHz     | 75                   | 0                     |
| 13.77                       | 14.14 | 14.11  | 14.5          | 16QAM      | 15MHz     | 1                    | 0                     |
| 13.77                       | 14.10 | 14.01  | 14.5          | 16QAM      | 15MHz     | 1                    | 37                    |
| 13.96                       | 13.92 | 14.29  | 14.5          | 16QAM      | 15MHz     | 1                    | 74                    |
| 12.71                       | 12.72 | 12.92  | 13.5          | 16QAM      | 15MHz     | 36                   | 0                     |
| 12.59                       | 12.73 | 13.00  | 13.5          | 16QAM      | 15MHz     | 36                   | 19                    |
| 12.65                       | 12.81 | 12.96  | 13.5          | 16QAM      | 15MHz     | 36                   | 39                    |
| 12.75                       | 12.78 | 12.94  | 13.5          | 16QAM      | 15MHz     | 75                   | 0                     |

| LTE Band 7                  |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 20850                       | 21100 | 21350 | Channel       |            |           |                      |                       |
| 2510                        | 2535  | 2560  | Freq. (MHz)   |            |           |                      |                       |
| 14.77                       | 14.84 | 14.97 | 15.5          | QPSK       | 20MHz     | 1                    | 0                     |
| 14.71                       | 14.75 | 14.94 | 15.5          | QPSK       | 20MHz     | 1                    | 49                    |
| 14.66                       | 14.63 | 14.96 | 15.5          | QPSK       | 20MHz     | 1                    | 99                    |
| 13.74                       | 13.72 | 14.03 | 14.5          | QPSK       | 20MHz     | 50                   | 0                     |
| 13.77                       | 13.82 | 13.99 | 14.5          | QPSK       | 20MHz     | 50                   | 25                    |
| 13.78                       | 13.97 | 14.04 | 14.5          | QPSK       | 20MHz     | 50                   | 50                    |
| 13.84                       | 14.05 | 14.02 | 14.5          | QPSK       | 20MHz     | 100                  | 0                     |
| 13.98                       | 14.08 | 14.22 | 14.5          | 16QAM      | 20MHz     | 1                    | 0                     |
| 13.77                       | 13.97 | 14.25 | 14.5          | 16QAM      | 20MHz     | 1                    | 49                    |
| 14.12                       | 14.17 | 14.31 | 14.5          | 16QAM      | 20MHz     | 1                    | 99                    |
| 12.73                       | 12.81 | 13.02 | 13.5          | 16QAM      | 20MHz     | 50                   | 0                     |
| 12.78                       | 12.79 | 12.98 | 13.5          | 16QAM      | 20MHz     | 50                   | 25                    |
| 12.78                       | 12.88 | 13.03 | 13.5          | 16QAM      | 20MHz     | 50                   | 50                    |
| 12.90                       | 12.96 | 13.07 | 13.5          | 16QAM      | 20MHz     | 100                  | 0                     |

| LTE Band 12                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23017                       | 23095 | 23173 | Channel       |            |           |                      |                       |
| 699.7                       | 707.5 | 715.3 | Freq. (MHz)   |            |           |                      |                       |
| 22.62                       | 22.21 | 22.37 | 23            | QPSK       | 1.4MHz    | 1                    | 0                     |
| 22.38                       | 22.16 | 22.30 | 23            | QPSK       | 1.4MHz    | 1                    | 2                     |
| 22.36                       | 22.26 | 22.20 | 23            | QPSK       | 1.4MHz    | 1                    | 5                     |
| 22.43                       | 22.27 | 22.32 | 23            | QPSK       | 1.4MHz    | 3                    | 0                     |
| 22.32                       | 22.35 | 22.31 | 23            | QPSK       | 1.4MHz    | 3                    | 1                     |
| 22.33                       | 22.36 | 22.26 | 23            | QPSK       | 1.4MHz    | 3                    | 3                     |
| 21.36                       | 21.34 | 21.17 | 22            | QPSK       | 1.4MHz    | 6                    | 0                     |
| 21.43                       | 21.81 | 21.57 | 22            | 16QAM      | 1.4MHz    | 1                    | 0                     |
| 21.71                       | 21.85 | 21.82 | 22            | 16QAM      | 1.4MHz    | 1                    | 2                     |
| 21.81                       | 21.74 | 21.81 | 22            | 16QAM      | 1.4MHz    | 1                    | 5                     |
| 21.48                       | 21.39 | 21.44 | 22            | 16QAM      | 1.4MHz    | 3                    | 0                     |
| 21.48                       | 21.41 | 21.34 | 22            | 16QAM      | 1.4MHz    | 3                    | 1                     |
| 21.57                       | 21.48 | 21.37 | 22            | 16QAM      | 1.4MHz    | 3                    | 3                     |
| 20.36                       | 20.32 | 20.55 | 21            | 16QAM      | 1.4MHz    | 6                    | 0                     |

| LTE Band 12                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23025                       | 23095 | 23165 | Channel       |            |           |                      |                       |
| 700.5                       | 707.5 | 714.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.32                       | 22.21 | 22.29 | 23            | QPSK       | 3MHz      | 1                    | 0                     |
| 22.47                       | 22.45 | 22.50 | 23            | QPSK       | 3MHz      | 1                    | 7                     |
| 22.43                       | 22.33 | 22.40 | 23            | QPSK       | 3MHz      | 1                    | 14                    |
| 21.32                       | 21.39 | 21.36 | 22            | QPSK       | 3MHz      | 8                    | 0                     |
| 21.49                       | 21.32 | 21.38 | 22            | QPSK       | 3MHz      | 8                    | 3                     |
| 21.38                       | 21.46 | 21.36 | 22            | QPSK       | 3MHz      | 8                    | 7                     |
| 21.48                       | 21.40 | 21.21 | 22            | QPSK       | 3MHz      | 15                   | 0                     |
| 21.83                       | 21.62 | 21.62 | 22            | 16QAM      | 3MHz      | 1                    | 0                     |
| 21.97                       | 21.67 | 21.72 | 22            | 16QAM      | 3MHz      | 1                    | 7                     |
| 21.75                       | 21.71 | 21.59 | 22            | 16QAM      | 3MHz      | 1                    | 14                    |
| 20.52                       | 20.41 | 20.43 | 21            | 16QAM      | 3MHz      | 8                    | 0                     |
| 20.61                       | 20.39 | 20.46 | 21            | 16QAM      | 3MHz      | 8                    | 3                     |
| 20.55                       | 20.49 | 20.39 | 21            | 16QAM      | 3MHz      | 8                    | 7                     |
| 20.51                       | 20.34 | 20.25 | 21            | 16QAM      | 3MHz      | 15                   | 0                     |

| LTE Band 12                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23035                       | 23095 | 23155 | Channel       |            |           |                      |                       |
| 701.5                       | 707.5 | 713.5 | Freq. (MHz)   |            |           |                      |                       |
| 22.26                       | 22.28 | 22.42 | 23            | QPSK       | 5MHz      | 1                    | 0                     |
| 22.32                       | 22.25 | 22.39 | 23            | QPSK       | 5MHz      | 1                    | 12                    |
| 22.45                       | 22.46 | 22.35 | 23            | QPSK       | 5MHz      | 1                    | 24                    |
| 21.46                       | 21.34 | 21.51 | 22            | QPSK       | 5MHz      | 12                   | 0                     |
| 21.46                       | 21.35 | 21.34 | 22            | QPSK       | 5MHz      | 12                   | 6                     |
| 21.45                       | 21.46 | 21.31 | 22            | QPSK       | 5MHz      | 12                   | 13                    |
| 21.45                       | 21.39 | 21.49 | 22            | QPSK       | 5MHz      | 25                   | 0                     |
| 21.86                       | 21.90 | 21.79 | 22            | 16QAM      | 5MHz      | 1                    | 0                     |
| 21.33                       | 21.79 | 21.95 | 22            | 16QAM      | 5MHz      | 1                    | 12                    |
| 21.87                       | 21.84 | 21.77 | 22            | 16QAM      | 5MHz      | 1                    | 24                    |
| 20.71                       | 20.53 | 20.45 | 21            | 16QAM      | 5MHz      | 12                   | 0                     |
| 20.47                       | 20.45 | 20.50 | 21            | 16QAM      | 5MHz      | 12                   | 6                     |
| 20.53                       | 20.55 | 20.54 | 21            | 16QAM      | 5MHz      | 12                   | 13                    |
| 20.55                       | 20.44 | 20.47 | 21            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 12                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23060                       | 23095 | 23130 | Channel       |            |           |                      |                       |
| 704                         | 707.5 | 711   | Freq. (MHz)   |            |           |                      |                       |
| 22.32                       | 22.40 | 22.42 | 23            | QPSK       | 10MHz     | 1                    | 0                     |
| 22.48                       | 22.37 | 22.38 | 23            | QPSK       | 10MHz     | 1                    | 24                    |
| 22.42                       | 22.53 | 22.44 | 23            | QPSK       | 10MHz     | 1                    | 49                    |
| 21.64                       | 21.46 | 21.51 | 22            | QPSK       | 10MHz     | 25                   | 0                     |
| 21.60                       | 21.45 | 21.48 | 22            | QPSK       | 10MHz     | 25                   | 12                    |
| 21.46                       | 21.48 | 21.45 | 22            | QPSK       | 10MHz     | 25                   | 25                    |
| 21.43                       | 21.49 | 21.46 | 22            | QPSK       | 10MHz     | 50                   | 0                     |
| 21.72                       | 21.78 | 21.54 | 22            | 16QAM      | 10MHz     | 1                    | 0                     |
| 21.94                       | 21.72 | 21.35 | 22            | 16QAM      | 10MHz     | 1                    | 24                    |
| 22.00                       | 21.94 | 21.79 | 22            | 16QAM      | 10MHz     | 1                    | 49                    |
| 20.63                       | 20.46 | 20.54 | 21            | 16QAM      | 10MHz     | 25                   | 0                     |
| 20.65                       | 20.46 | 20.58 | 21            | 16QAM      | 10MHz     | 25                   | 12                    |
| 20.65                       | 20.83 | 20.65 | 21            | 16QAM      | 10MHz     | 25                   | 25                    |
| 20.72                       | 20.61 | 20.60 | 21            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 13                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23205                       | 23230 | 23255 | Channel       |            |           |                      |                       |
| 779.5                       | 782   | 784.5 | Freq. (MHz)   |            |           |                      |                       |
| 20.38                       | 20.41 | 20.50 | 21            | QPSK       | 5MHz      | 1                    | 0                     |
| 20.29                       | 20.49 | 20.36 | 21            | QPSK       | 5MHz      | 1                    | 12                    |
| 20.45                       | 20.42 | 20.28 | 21            | QPSK       | 5MHz      | 1                    | 24                    |
| 19.49                       | 19.27 | 19.36 | 20            | QPSK       | 5MHz      | 12                   | 0                     |
| 19.31                       | 19.28 | 19.26 | 20            | QPSK       | 5MHz      | 12                   | 6                     |
| 19.29                       | 19.45 | 19.30 | 20            | QPSK       | 5MHz      | 12                   | 13                    |
| 19.51                       | 19.36 | 19.27 | 20            | QPSK       | 5MHz      | 25                   | 0                     |
| 19.72                       | 19.60 | 19.56 | 20            | 16QAM      | 5MHz      | 1                    | 0                     |
| 19.70                       | 19.56 | 19.81 | 20            | 16QAM      | 5MHz      | 1                    | 12                    |
| 19.61                       | 19.88 | 19.90 | 20            | 16QAM      | 5MHz      | 1                    | 24                    |
| 18.56                       | 18.28 | 18.49 | 19            | 16QAM      | 5MHz      | 12                   | 0                     |
| 18.32                       | 18.34 | 18.37 | 19            | 16QAM      | 5MHz      | 12                   | 6                     |
| 18.32                       | 18.33 | 18.27 | 19            | 16QAM      | 5MHz      | 12                   | 13                    |
| 18.40                       | 18.41 | 18.23 | 19            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 13                 |               |            |           |                      |                       |
|-----------------------------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23230                       | Channel       |            |           |                      |                       |
| 782                         | Freq. (MHz)   |            |           |                      |                       |
| 20.52                       | 21            | QPSK       | 10MHz     | 1                    | 0                     |
| 20.44                       | 21            | QPSK       | 10MHz     | 1                    | 24                    |
| 20.39                       | 21            | QPSK       | 10MHz     | 1                    | 49                    |
| 19.49                       | 20            | QPSK       | 10MHz     | 25                   | 0                     |
| 19.44                       | 20            | QPSK       | 10MHz     | 25                   | 12                    |
| 19.40                       | 20            | QPSK       | 10MHz     | 25                   | 25                    |
| 19.62                       | 20            | QPSK       | 10MHz     | 50                   | 0                     |
| 19.46                       | 20            | 16QAM      | 10MHz     | 1                    | 0                     |
| 19.78                       | 20            | 16QAM      | 10MHz     | 1                    | 24                    |
| 19.20                       | 20            | 16QAM      | 10MHz     | 1                    | 49                    |
| 18.23                       | 19            | 16QAM      | 10MHz     | 25                   | 0                     |
| 18.45                       | 19            | 16QAM      | 10MHz     | 25                   | 12                    |
| 18.37                       | 19            | 16QAM      | 10MHz     | 25                   | 25                    |
| 18.64                       | 19            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 17                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23755                       | 23790 | 23825 | Channel       |            |           |                      |                       |
| 706.5                       | 710   | 713.5 | Freq. (MHz)   |            |           |                      |                       |
| 20.62                       | 20.28 | 20.45 | 21.5          | QPSK       | 5MHz      | 1                    | 0                     |
| 20.28                       | 20.50 | 20.43 | 21.5          | QPSK       | 5MHz      | 1                    | 12                    |
| 20.48                       | 20.57 | 20.47 | 21.5          | QPSK       | 5MHz      | 1                    | 24                    |
| 19.46                       | 19.41 | 19.50 | 20.5          | QPSK       | 5MHz      | 12                   | 0                     |
| 19.34                       | 19.41 | 19.41 | 20.5          | QPSK       | 5MHz      | 12                   | 6                     |
| 19.43                       | 19.44 | 19.57 | 20.5          | QPSK       | 5MHz      | 12                   | 13                    |
| 19.45                       | 19.58 | 19.36 | 20.5          | QPSK       | 5MHz      | 25                   | 0                     |
| 20.14                       | 19.70 | 19.37 | 20.5          | 16QAM      | 5MHz      | 1                    | 0                     |
| 20.02                       | 19.94 | 19.81 | 20.5          | 16QAM      | 5MHz      | 1                    | 12                    |
| 20.03                       | 19.87 | 19.78 | 20.5          | 16QAM      | 5MHz      | 1                    | 24                    |
| 18.49                       | 18.50 | 18.56 | 19.5          | 16QAM      | 5MHz      | 12                   | 0                     |
| 18.42                       | 18.46 | 18.56 | 19.5          | 16QAM      | 5MHz      | 12                   | 6                     |
| 18.59                       | 18.55 | 18.42 | 19.5          | 16QAM      | 5MHz      | 12                   | 13                    |
| 18.43                       | 18.56 | 18.41 | 19.5          | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 17                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 23780                       | 23790 | 23800 | Channel       |            |           |                      |                       |
| 709                         | 710   | 711   | Freq. (MHz)   |            |           |                      |                       |
| 20.43                       | 20.72 | 20.36 | 21.5          | QPSK       | 10MHz     | 1                    | 0                     |
| 20.33                       | 20.46 | 20.44 | 21.5          | QPSK       | 10MHz     | 1                    | 24                    |
| 20.57                       | 20.62 | 20.45 | 21.5          | QPSK       | 10MHz     | 1                    | 49                    |
| 19.43                       | 19.45 | 19.51 | 20.5          | QPSK       | 10MHz     | 25                   | 0                     |
| 19.54                       | 19.60 | 19.57 | 20.5          | QPSK       | 10MHz     | 25                   | 12                    |
| 19.47                       | 19.63 | 19.58 | 20.5          | QPSK       | 10MHz     | 25                   | 25                    |
| 19.67                       | 19.62 | 19.59 | 20.5          | QPSK       | 10MHz     | 50                   | 0                     |
| 19.85                       | 19.78 | 19.96 | 20.5          | 16QAM      | 10MHz     | 1                    | 0                     |
| 19.84                       | 20.09 | 19.58 | 20.5          | 16QAM      | 10MHz     | 1                    | 24                    |
| 20.05                       | 19.99 | 19.80 | 20.5          | 16QAM      | 10MHz     | 1                    | 49                    |
| 18.40                       | 18.52 | 18.60 | 19.5          | 16QAM      | 10MHz     | 25                   | 0                     |
| 18.64                       | 18.56 | 18.73 | 19.5          | 16QAM      | 10MHz     | 25                   | 12                    |
| 18.63                       | 18.62 | 18.71 | 19.5          | 16QAM      | 10MHz     | 25                   | 25                    |
| 18.77                       | 18.64 | 18.80 | 19.5          | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 26                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 26697                       | 26865 | 27033 | Channel       |            |           |                      |                       |
| 814.7                       | 831.5 | 848.3 | Freq. (MHz)   |            |           |                      |                       |
| 20.33                       | 20.62 | 20.45 | 21.5          | QPSK       | 1.4MHz    | 1                    | 0                     |
| 20.34                       | 20.56 | 20.46 | 21.5          | QPSK       | 1.4MHz    | 1                    | 2                     |
| 20.40                       | 20.62 | 20.40 | 21.5          | QPSK       | 1.4MHz    | 1                    | 5                     |
| 20.30                       | 20.51 | 20.48 | 21.5          | QPSK       | 1.4MHz    | 3                    | 0                     |
| 20.37                       | 20.57 | 20.42 | 21.5          | QPSK       | 1.4MHz    | 3                    | 1                     |
| 20.37                       | 20.58 | 20.37 | 21.5          | QPSK       | 1.4MHz    | 3                    | 3                     |
| 19.30                       | 19.58 | 19.32 | 20.5          | QPSK       | 1.4MHz    | 6                    | 0                     |
| 19.88                       | 20.20 | 20.23 | 20.5          | 16QAM      | 1.4MHz    | 1                    | 0                     |
| 19.85                       | 19.60 | 19.52 | 20.5          | 16QAM      | 1.4MHz    | 1                    | 2                     |
| 19.79                       | 20.06 | 19.50 | 20.5          | 16QAM      | 1.4MHz    | 1                    | 5                     |
| 19.52                       | 19.81 | 19.45 | 20.5          | 16QAM      | 1.4MHz    | 3                    | 0                     |
| 19.27                       | 19.69 | 19.59 | 20.5          | 16QAM      | 1.4MHz    | 3                    | 1                     |
| 19.68                       | 19.62 | 19.60 | 20.5          | 16QAM      | 1.4MHz    | 3                    | 3                     |
| 18.32                       | 18.75 | 18.55 | 19.5          | 16QAM      | 1.4MHz    | 6                    | 0                     |

| LTE Band 26                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 26705                       | 26865 | 27025 | Channel       |            |           |                      |                       |
| 815.5                       | 831.5 | 847.5 | Freq. (MHz)   |            |           |                      |                       |
| 20.35                       | 20.52 | 20.42 | 21.5          | QPSK       | 3MHz      | 1                    | 0                     |
| 20.45                       | 20.63 | 20.47 | 21.5          | QPSK       | 3MHz      | 1                    | 7                     |
| 20.37                       | 20.44 | 20.27 | 21.5          | QPSK       | 3MHz      | 1                    | 14                    |
| 19.34                       | 19.51 | 19.52 | 20.5          | QPSK       | 3MHz      | 8                    | 0                     |
| 19.34                       | 19.59 | 19.37 | 20.5          | QPSK       | 3MHz      | 8                    | 3                     |
| 19.42                       | 19.58 | 19.48 | 20.5          | QPSK       | 3MHz      | 8                    | 7                     |
| 19.38                       | 19.61 | 19.35 | 20.5          | QPSK       | 3MHz      | 15                   | 0                     |
| 19.82                       | 19.28 | 19.84 | 20.5          | 16QAM      | 3MHz      | 1                    | 0                     |
| 19.90                       | 20.08 | 19.66 | 20.5          | 16QAM      | 3MHz      | 1                    | 7                     |
| 19.89                       | 19.97 | 19.81 | 20.5          | 16QAM      | 3MHz      | 1                    | 14                    |
| 18.41                       | 18.57 | 18.53 | 19.5          | 16QAM      | 3MHz      | 8                    | 0                     |
| 18.39                       | 18.67 | 18.47 | 19.5          | 16QAM      | 3MHz      | 8                    | 3                     |
| 18.63                       | 18.65 | 18.39 | 19.5          | 16QAM      | 3MHz      | 8                    | 7                     |
| 18.34                       | 18.66 | 18.39 | 19.5          | 16QAM      | 3MHz      | 15                   | 0                     |

| LTE Band 26                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 26715                       | 26865 | 27015 | Channel       |            |           |                      |                       |
| 816.5                       | 831.5 | 846.5 | Freq. (MHz)   |            |           |                      |                       |
| 20.49                       | 20.62 | 20.57 | 21.5          | QPSK       | 5MHz      | 1                    | 0                     |
| 20.54                       | 20.58 | 20.46 | 21.5          | QPSK       | 5MHz      | 1                    | 12                    |
| 20.39                       | 20.49 | 20.40 | 21.5          | QPSK       | 5MHz      | 1                    | 24                    |
| 19.40                       | 19.50 | 19.43 | 20.5          | QPSK       | 5MHz      | 12                   | 0                     |
| 19.45                       | 19.61 | 19.43 | 20.5          | QPSK       | 5MHz      | 12                   | 6                     |
| 19.39                       | 19.51 | 19.38 | 20.5          | QPSK       | 5MHz      | 12                   | 13                    |
| 19.47                       | 19.57 | 19.44 | 20.5          | QPSK       | 5MHz      | 25                   | 0                     |
| 19.90                       | 19.90 | 19.73 | 20.5          | 16QAM      | 5MHz      | 1                    | 0                     |
| 19.55                       | 19.86 | 19.71 | 20.5          | 16QAM      | 5MHz      | 1                    | 12                    |
| 19.88                       | 19.86 | 19.72 | 20.5          | 16QAM      | 5MHz      | 1                    | 24                    |
| 18.38                       | 18.60 | 18.56 | 19.5          | 16QAM      | 5MHz      | 12                   | 0                     |
| 18.47                       | 18.66 | 18.53 | 19.5          | 16QAM      | 5MHz      | 12                   | 6                     |
| 18.40                       | 18.47 | 18.46 | 19.5          | 16QAM      | 5MHz      | 12                   | 13                    |
| 18.51                       | 18.58 | 18.42 | 19.5          | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 26                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 26740                       | 26865 | 26990 | Channel       |            |           |                      |                       |
| 819                         | 831.5 | 844   | Freq. (MHz)   |            |           |                      |                       |
| 20.43                       | 20.53 | 20.47 | 21.5          | QPSK       | 10MHz     | 1                    | 0                     |
| 20.40                       | 20.60 | 20.49 | 21.5          | QPSK       | 10MHz     | 1                    | 24                    |
| 20.39                       | 20.48 | 20.54 | 21.5          | QPSK       | 10MHz     | 1                    | 49                    |
| 19.55                       | 19.60 | 19.59 | 20.5          | QPSK       | 10MHz     | 25                   | 0                     |
| 19.47                       | 19.67 | 19.53 | 20.5          | QPSK       | 10MHz     | 25                   | 12                    |
| 19.51                       | 19.55 | 19.65 | 20.5          | QPSK       | 10MHz     | 25                   | 25                    |
| 19.32                       | 19.67 | 19.63 | 20.5          | QPSK       | 10MHz     | 50                   | 0                     |
| 19.87                       | 19.32 | 20.01 | 20.5          | 16QAM      | 10MHz     | 1                    | 0                     |
| 19.95                       | 19.79 | 20.04 | 20.5          | 16QAM      | 10MHz     | 1                    | 24                    |
| 19.73                       | 19.92 | 20.08 | 20.5          | 16QAM      | 10MHz     | 1                    | 49                    |
| 18.68                       | 18.70 | 18.69 | 19.5          | 16QAM      | 10MHz     | 25                   | 0                     |
| 18.48                       | 18.77 | 18.64 | 19.5          | 16QAM      | 10MHz     | 25                   | 12                    |
| 18.56                       | 18.74 | 18.56 | 19.5          | 16QAM      | 10MHz     | 25                   | 25                    |
| 18.37                       | 18.66 | 18.70 | 19.5          | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 26                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 26765                       | 26865 | 26965 | Channel       |            |           |                      |                       |
| 821.5                       | 831.5 | 841.5 | Freq. (MHz)   |            |           |                      |                       |
| 20.54                       | 20.36 | 20.58 | 21.5          | QPSK       | 15MHz     | 1                    | 0                     |
| 20.57                       | 20.66 | 20.65 | 21.5          | QPSK       | 15MHz     | 1                    | 37                    |
| 20.29                       | 20.57 | 20.48 | 21.5          | QPSK       | 15MHz     | 1                    | 74                    |
| 19.53                       | 19.55 | 19.48 | 20.5          | QPSK       | 15MHz     | 36                   | 0                     |
| 19.54                       | 19.70 | 19.62 | 20.5          | QPSK       | 15MHz     | 36                   | 19                    |
| 19.49                       | 19.49 | 19.54 | 20.5          | QPSK       | 15MHz     | 36                   | 39                    |
| 19.50                       | 19.77 | 19.64 | 20.5          | QPSK       | 15MHz     | 75                   | 0                     |
| 19.95                       | 20.05 | 19.55 | 20.5          | 16QAM      | 15MHz     | 1                    | 0                     |
| 19.86                       | 19.89 | 20.00 | 20.5          | 16QAM      | 15MHz     | 1                    | 37                    |
| 19.85                       | 19.80 | 19.99 | 20.5          | 16QAM      | 15MHz     | 1                    | 74                    |
| 18.52                       | 18.59 | 18.63 | 19.5          | 16QAM      | 15MHz     | 36                   | 0                     |
| 18.62                       | 18.71 | 18.63 | 19.5          | 16QAM      | 15MHz     | 36                   | 19                    |
| 18.58                       | 18.63 | 18.54 | 19.5          | 16QAM      | 15MHz     | 36                   | 39                    |
| 18.63                       | 18.91 | 18.75 | 19.5          | 16QAM      | 15MHz     | 75                   | 0                     |

| LTE Band 30                 |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 27685                       | 27710 | 27735  | Channel       |            |           |                      |                       |
| 2307.5                      | 2310  | 2312.5 | Freq. (MHz)   |            |           |                      |                       |
| 19.26                       | 19.11 | 19.31  | 20            | QPSK       | 5MHz      | 1                    | 0                     |
| 19.31                       | 19.28 | 19.20  | 20            | QPSK       | 5MHz      | 1                    | 12                    |
| 19.42                       | 19.24 | 19.30  | 20            | QPSK       | 5MHz      | 1                    | 24                    |
| 18.30                       | 18.26 | 18.13  | 19            | QPSK       | 5MHz      | 12                   | 0                     |
| 18.20                       | 18.26 | 18.09  | 19            | QPSK       | 5MHz      | 12                   | 6                     |
| 18.29                       | 18.24 | 18.06  | 19            | QPSK       | 5MHz      | 12                   | 13                    |
| 18.25                       | 18.24 | 18.16  | 19            | QPSK       | 5MHz      | 25                   | 0                     |
| 18.43                       | 18.27 | 18.59  | 19            | 16QAM      | 5MHz      | 1                    | 0                     |
| 18.82                       | 17.82 | 18.54  | 19            | 16QAM      | 5MHz      | 1                    | 12                    |
| 18.29                       | 18.57 | 18.09  | 19            | 16QAM      | 5MHz      | 1                    | 24                    |
| 17.23                       | 17.22 | 17.15  | 18            | 16QAM      | 5MHz      | 12                   | 0                     |
| 17.18                       | 17.21 | 17.11  | 18            | 16QAM      | 5MHz      | 12                   | 6                     |
| 17.25                       | 17.35 | 17.15  | 18            | 16QAM      | 5MHz      | 12                   | 13                    |
| 17.25                       | 17.19 | 17.11  | 18            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 30                 |               |            |           |                      |                       |
|-----------------------------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 27710                       | Channel       |            |           |                      |                       |
| 2310                        | Freq. (MHz)   |            |           |                      |                       |
| 19.44                       | 20            | QPSK       | 10MHz     | 1                    | 0                     |
| 19.42                       | 20            | QPSK       | 10MHz     | 1                    | 24                    |
| 19.34                       | 20            | QPSK       | 10MHz     | 1                    | 49                    |
| 18.34                       | 19            | QPSK       | 10MHz     | 25                   | 0                     |
| 18.41                       | 19            | QPSK       | 10MHz     | 25                   | 12                    |
| 18.25                       | 19            | QPSK       | 10MHz     | 25                   | 25                    |
| 18.53                       | 19            | QPSK       | 10MHz     | 50                   | 0                     |
| 17.95                       | 19            | 16QAM      | 10MHz     | 1                    | 0                     |
| 18.67                       | 19            | 16QAM      | 10MHz     | 1                    | 24                    |
| 18.74                       | 19            | 16QAM      | 10MHz     | 1                    | 49                    |
| 17.38                       | 18            | 16QAM      | 10MHz     | 25                   | 0                     |
| 17.32                       | 18            | 16QAM      | 10MHz     | 25                   | 12                    |
| 17.35                       | 18            | 16QAM      | 10MHz     | 25                   | 25                    |
| 17.47                       | 18            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 38                 |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 37775                       | 38000 | 38225  | Channel       |            |           |                      |                       |
| 2572.5                      | 2595  | 2617.5 | Freq. (MHz)   |            |           |                      |                       |
| 20.28                       | 20.22 | 20.43  | 20.5          | QPSK       | 5MHz      | 1                    | 0                     |
| 20.25                       | 20.19 | 20.41  | 20.5          | QPSK       | 5MHz      | 1                    | 12                    |
| 20.27                       | 20.21 | 20.44  | 20.5          | QPSK       | 5MHz      | 1                    | 24                    |
| 19.38                       | 19.29 | 19.41  | 19.5          | QPSK       | 5MHz      | 12                   | 0                     |
| 19.36                       | 19.30 | 19.44  | 19.5          | QPSK       | 5MHz      | 12                   | 6                     |
| 19.37                       | 19.29 | 19.42  | 19.5          | QPSK       | 5MHz      | 12                   | 13                    |
| 19.37                       | 19.29 | 19.40  | 19.5          | QPSK       | 5MHz      | 25                   | 0                     |
| 19.32                       | 19.20 | 19.48  | 19.5          | 16QAM      | 5MHz      | 1                    | 0                     |
| 19.25                       | 19.18 | 19.46  | 19.5          | 16QAM      | 5MHz      | 1                    | 12                    |
| 19.28                       | 19.20 | 19.47  | 19.5          | 16QAM      | 5MHz      | 1                    | 24                    |
| 18.06                       | 17.97 | 18.18  | 18.5          | 16QAM      | 5MHz      | 12                   | 0                     |
| 18.01                       | 17.96 | 18.19  | 18.5          | 16QAM      | 5MHz      | 12                   | 6                     |
| 18.04                       | 17.96 | 18.20  | 18.5          | 16QAM      | 5MHz      | 12                   | 13                    |
| 17.91                       | 17.83 | 18.07  | 18.5          | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 38                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 37800                       | 38000 | 38200 | Channel       |            |           |                      |                       |
| 2575                        | 2595  | 2615  | Freq. (MHz)   |            |           |                      |                       |
| 20.28                       | 20.21 | 20.44 | 20.5          | QPSK       | 10MHz     | 1                    | 0                     |
| 20.23                       | 20.21 | 20.40 | 20.5          | QPSK       | 10MHz     | 1                    | 24                    |
| 20.24                       | 20.19 | 20.41 | 20.5          | QPSK       | 10MHz     | 1                    | 49                    |
| 19.42                       | 19.34 | 19.42 | 19.5          | QPSK       | 10MHz     | 25                   | 0                     |
| 19.42                       | 19.33 | 19.42 | 19.5          | QPSK       | 10MHz     | 25                   | 12                    |
| 19.41                       | 19.33 | 19.44 | 19.5          | QPSK       | 10MHz     | 25                   | 25                    |
| 19.39                       | 19.29 | 19.39 | 19.5          | QPSK       | 10MHz     | 50                   | 0                     |
| 19.11                       | 18.96 | 19.21 | 19.5          | 16QAM      | 10MHz     | 1                    | 0                     |
| 19.01                       | 18.93 | 19.19 | 19.5          | 16QAM      | 10MHz     | 1                    | 24                    |
| 18.99                       | 18.97 | 19.26 | 19.5          | 16QAM      | 10MHz     | 1                    | 49                    |
| 17.77                       | 17.71 | 17.87 | 18.5          | 16QAM      | 10MHz     | 25                   | 0                     |
| 17.74                       | 17.73 | 17.89 | 18.5          | 16QAM      | 10MHz     | 25                   | 12                    |
| 17.75                       | 17.74 | 17.89 | 18.5          | 16QAM      | 10MHz     | 25                   | 25                    |
| 17.69                       | 17.61 | 17.81 | 18.5          | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 38                 |       |        |               |            |           |                      |                       |
|-----------------------------|-------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 37825                       | 38000 | 38175  | Channel       |            |           |                      |                       |
| 2577.5                      | 2595  | 2612.5 | Freq. (MHz)   |            |           |                      |                       |
| 20.40                       | 20.34 | 20.39  | 20.5          | QPSK       | 15MHz     | 1                    | 0                     |
| 20.37                       | 20.28 | 20.41  | 20.5          | QPSK       | 15MHz     | 1                    | 37                    |
| 20.35                       | 20.27 | 20.44  | 20.5          | QPSK       | 15MHz     | 1                    | 74                    |
| 19.37                       | 19.23 | 19.39  | 19.5          | QPSK       | 15MHz     | 36                   | 0                     |
| 19.37                       | 19.24 | 19.41  | 19.5          | QPSK       | 15MHz     | 36                   | 19                    |
| 19.35                       | 19.24 | 19.40  | 19.5          | QPSK       | 15MHz     | 36                   | 39                    |
| 19.28                       | 19.23 | 19.37  | 19.5          | QPSK       | 15MHz     | 75                   | 0                     |
| 19.44                       | 19.30 | 19.49  | 19.5          | 16QAM      | 15MHz     | 1                    | 0                     |
| 19.39                       | 19.36 | 19.43  | 19.5          | 16QAM      | 15MHz     | 1                    | 37                    |
| 19.36                       | 19.34 | 19.45  | 19.5          | 16QAM      | 15MHz     | 1                    | 74                    |
| 18.15                       | 18.07 | 18.18  | 18.5          | 16QAM      | 15MHz     | 36                   | 0                     |
| 18.14                       | 18.09 | 18.21  | 18.5          | 16QAM      | 15MHz     | 36                   | 19                    |
| 18.12                       | 18.08 | 18.21  | 18.5          | 16QAM      | 15MHz     | 36                   | 39                    |
| 18.00                       | 17.93 | 18.07  | 18.5          | 16QAM      | 15MHz     | 75                   | 0                     |

| LTE Band 38                 |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 37850                       | 38000 | 38150 | Channel       |            |           |                      |                       |
| 2580                        | 2595  | 2610  | Freq. (MHz)   |            |           |                      |                       |
| 20.33                       | 20.28 | 20.43 | 20.5          | QPSK       | 20MHz     | 1                    | 0                     |
| 20.32                       | 20.29 | 20.46 | 20.5          | QPSK       | 20MHz     | 1                    | 49                    |
| 20.39                       | 20.37 | 20.47 | 20.5          | QPSK       | 20MHz     | 1                    | 99                    |
| 19.27                       | 19.22 | 19.33 | 19.5          | QPSK       | 20MHz     | 50                   | 0                     |
| 19.26                       | 19.20 | 19.36 | 19.5          | QPSK       | 20MHz     | 50                   | 25                    |
| 19.29                       | 19.23 | 19.38 | 19.5          | QPSK       | 20MHz     | 50                   | 50                    |
| 19.18                       | 19.29 | 19.40 | 19.5          | QPSK       | 20MHz     | 100                  | 0                     |
| 19.45                       | 19.31 | 19.49 | 19.5          | 16QAM      | 20MHz     | 1                    | 0                     |
| 19.35                       | 19.26 | 19.48 | 19.5          | 16QAM      | 20MHz     | 1                    | 49                    |
| 19.36                       | 19.35 | 19.48 | 19.5          | 16QAM      | 20MHz     | 1                    | 99                    |
| 18.36                       | 18.28 | 18.45 | 18.5          | 16QAM      | 20MHz     | 50                   | 0                     |
| 18.30                       | 18.28 | 18.46 | 18.5          | 16QAM      | 20MHz     | 50                   | 25                    |
| 18.31                       | 18.30 | 18.46 | 18.5          | 16QAM      | 20MHz     | 50                   | 50                    |
| 18.34                       | 18.24 | 18.42 | 18.5          | 16QAM      | 20MHz     | 100                  | 0                     |

| LTE Band 41                 |        |       |        |        |               |            |           |                      |                       |
|-----------------------------|--------|-------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |       |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 39675                       | 40148  | 40620 | 41093  | 41565  | Channel       |            |           |                      |                       |
| 2498.5                      | 2545.8 | 2593  | 2640.3 | 2687.5 | Freq. (MHz)   |            |           |                      |                       |
| 20.10                       | 20.35  | 20.23 | 20.39  | 20.33  | 20.5          | QPSK       | 5MHz      | 1                    | 0                     |
| 20.03                       | 20.32  | 20.18 | 20.36  | 20.31  | 20.5          | QPSK       | 5MHz      | 1                    | 12                    |
| 20.04                       | 20.35  | 20.20 | 20.39  | 20.41  | 20.5          | QPSK       | 5MHz      | 1                    | 24                    |
| 19.16                       | 19.46  | 19.29 | 19.78  | 19.68  | 20            | QPSK       | 5MHz      | 12                   | 0                     |
| 19.13                       | 19.45  | 19.31 | 19.77  | 19.67  | 20            | QPSK       | 5MHz      | 12                   | 6                     |
| 19.13                       | 19.44  | 19.30 | 19.76  | 19.68  | 20            | QPSK       | 5MHz      | 12                   | 13                    |
| 19.14                       | 19.46  | 19.30 | 19.78  | 19.66  | 20            | QPSK       | 5MHz      | 25                   | 0                     |
| 19.66                       | 20.01  | 19.73 | 20.34  | 20.15  | 20.5          | 16QAM      | 5MHz      | 1                    | 0                     |
| 19.59                       | 19.96  | 19.71 | 20.27  | 20.14  | 20.5          | 16QAM      | 5MHz      | 1                    | 12                    |
| 19.62                       | 20.00  | 19.74 | 20.33  | 20.27  | 20.5          | 16QAM      | 5MHz      | 1                    | 24                    |
| 18.36                       | 18.69  | 18.47 | 19.02  | 18.89  | 20            | 16QAM      | 5MHz      | 12                   | 0                     |
| 18.33                       | 18.66  | 18.46 | 19.00  | 18.88  | 20            | 16QAM      | 5MHz      | 12                   | 6                     |
| 18.33                       | 18.68  | 18.49 | 19.02  | 18.92  | 20            | 16QAM      | 5MHz      | 12                   | 13                    |
| 18.19                       | 18.52  | 18.34 | 18.89  | 18.79  | 20            | 16QAM      | 5MHz      | 25                   | 0                     |

| LTE Band 41                 |       |       |       |       |               |            |           |                      |                       |
|-----------------------------|-------|-------|-------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |       |       |       |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 39700                       | 40160 | 40620 | 41080 | 41540 | Channel       |            |           |                      |                       |
| 2501                        | 2547  | 2593  | 2639  | 2685  | Freq. (MHz)   |            |           |                      |                       |
| 20.11                       | 20.35 | 20.22 | 20.39 | 20.32 | 20.5          | QPSK       | 10MHz     | 1                    | 0                     |
| 20.05                       | 20.33 | 20.17 | 20.35 | 20.30 | 20.5          | QPSK       | 10MHz     | 1                    | 24                    |
| 20.05                       | 20.42 | 20.20 | 20.36 | 20.43 | 20.5          | QPSK       | 10MHz     | 1                    | 49                    |
| 19.26                       | 19.54 | 19.36 | 19.82 | 19.68 | 20            | QPSK       | 10MHz     | 25                   | 0                     |
| 19.23                       | 19.52 | 19.34 | 19.81 | 19.68 | 20            | QPSK       | 10MHz     | 25                   | 12                    |
| 19.22                       | 19.60 | 19.37 | 19.82 | 19.70 | 20            | QPSK       | 10MHz     | 25                   | 25                    |
| 19.22                       | 19.49 | 19.32 | 19.77 | 19.67 | 20            | QPSK       | 10MHz     | 50                   | 0                     |
| 19.72                       | 20.06 | 19.80 | 20.36 | 20.11 | 20.5          | 16QAM      | 10MHz     | 1                    | 0                     |
| 19.66                       | 20.04 | 19.75 | 20.34 | 20.15 | 20.5          | 16QAM      | 10MHz     | 1                    | 24                    |
| 19.68                       | 20.12 | 19.80 | 20.36 | 20.29 | 20.5          | 16QAM      | 10MHz     | 1                    | 49                    |
| 18.36                       | 18.70 | 18.51 | 19.03 | 18.92 | 20            | 16QAM      | 10MHz     | 25                   | 0                     |
| 18.32                       | 18.67 | 18.49 | 19.02 | 18.93 | 20            | 16QAM      | 10MHz     | 25                   | 12                    |
| 18.32                       | 18.75 | 18.53 | 19.01 | 18.94 | 20            | 16QAM      | 10MHz     | 25                   | 25                    |
| 18.30                       | 18.59 | 18.40 | 18.89 | 18.83 | 20            | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 41                 |        |       |        |        |               |            |           |                      |                       |
|-----------------------------|--------|-------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |       |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 39725                       | 40173  | 40620 | 41068  | 41515  | Channel       |            |           |                      |                       |
| 2503.5                      | 2548.3 | 2593  | 2637.8 | 2682.5 | Freq. (MHz)   |            |           |                      |                       |
| 20.32                       | 20.39  | 20.41 | 20.33  | 20.18  | 20.5          | QPSK       | 15MHz     | 1                    | 0                     |
| 20.27                       | 20.37  | 20.40 | 20.34  | 20.21  | 20.5          | QPSK       | 15MHz     | 1                    | 37                    |
| 20.28                       | 20.43  | 20.39 | 20.33  | 20.28  | 20.5          | QPSK       | 15MHz     | 1                    | 74                    |
| 19.29                       | 19.56  | 19.39 | 19.85  | 19.64  | 20            | QPSK       | 15MHz     | 36                   | 0                     |
| 19.28                       | 19.55  | 19.37 | 19.84  | 19.73  | 20            | QPSK       | 15MHz     | 36                   | 19                    |
| 19.28                       | 19.62  | 19.38 | 19.83  | 19.72  | 20            | QPSK       | 15MHz     | 36                   | 39                    |
| 19.28                       | 19.52  | 19.34 | 19.80  | 19.78  | 20            | QPSK       | 15MHz     | 75                   | 0                     |
| 19.79                       | 20.04  | 19.81 | 20.38  | 20.00  | 20.5          | 16QAM      | 15MHz     | 1                    | 0                     |
| 19.74                       | 20.05  | 19.76 | 20.35  | 20.09  | 20.5          | 16QAM      | 15MHz     | 1                    | 37                    |
| 19.74                       | 20.09  | 19.77 | 20.36  | 20.26  | 20.5          | 16QAM      | 15MHz     | 1                    | 74                    |
| 18.46                       | 18.72  | 18.53 | 19.09  | 18.84  | 20            | 16QAM      | 15MHz     | 36                   | 0                     |
| 18.45                       | 18.73  | 18.53 | 19.06  | 18.88  | 20            | 16QAM      | 15MHz     | 36                   | 19                    |
| 18.44                       | 18.80  | 18.53 | 19.06  | 18.91  | 20            | 16QAM      | 15MHz     | 36                   | 39                    |
| 18.34                       | 18.54  | 18.38 | 18.85  | 18.78  | 20            | 16QAM      | 15MHz     | 75                   | 0                     |

| LTE Band 41                 |        |       |        |       |               |            |           |                      |                       |
|-----------------------------|--------|-------|--------|-------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |       |        |       | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 39750                       | 40185  | 40620 | 41055  | 41490 | Channel       |            |           |                      |                       |
| 2506                        | 2549.5 | 2593  | 2636.5 | 2680  | Freq. (MHz)   |            |           |                      |                       |
| 20.18                       | 20.46  | 20.29 | 20.47  | 20.33 | 20.5          | QPSK       | 20MHz     | 1                    | 0                     |
| 20.10                       | 20.41  | 20.20 | 20.37  | 20.16 | 20.5          | QPSK       | 20MHz     | 1                    | 49                    |
| 20.16                       | 20.43  | 20.25 | 20.35  | 20.20 | 20.5          | QPSK       | 20MHz     | 1                    | 99                    |
| 19.20                       | 19.52  | 19.33 | 19.74  | 19.66 | 20            | QPSK       | 20MHz     | 50                   | 0                     |
| 19.18                       | 19.55  | 19.36 | 19.76  | 19.69 | 20            | QPSK       | 20MHz     | 50                   | 25                    |
| 19.22                       | 19.57  | 19.38 | 19.78  | 19.73 | 20            | QPSK       | 20MHz     | 50                   | 50                    |
| 19.31                       | 19.58  | 19.38 | 19.77  | 19.75 | 20            | QPSK       | 20MHz     | 100                  | 0                     |
| 19.77                       | 20.10  | 19.84 | 20.33  | 20.11 | 20.5          | 16QAM      | 20MHz     | 1                    | 0                     |
| 19.69                       | 20.12  | 19.76 | 20.29  | 19.99 | 20.5          | 16QAM      | 20MHz     | 1                    | 49                    |
| 19.78                       | 20.09  | 19.85 | 20.30  | 20.20 | 20.5          | 16QAM      | 20MHz     | 1                    | 99                    |
| 18.30                       | 18.60  | 18.42 | 18.88  | 18.69 | 20            | 16QAM      | 20MHz     | 50                   | 0                     |
| 18.25                       | 18.64  | 18.40 | 18.88  | 18.75 | 20            | 16QAM      | 20MHz     | 50                   | 25                    |
| 18.29                       | 18.63  | 18.46 | 18.88  | 18.76 | 20            | 16QAM      | 20MHz     | 50                   | 50                    |
| 18.34                       | 18.68  | 18.41 | 18.89  | 18.71 | 20            | 16QAM      | 20MHz     | 100                  | 0                     |

| LTE Band 66                 |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 131979                      | 132322 | 132665 | Channel       |            |           |                      |                       |
| 1710.7                      | 1745   | 1779.3 | Freq. (MHz)   |            |           |                      |                       |
| 18.16                       | 18.03  | 18.17  | 18.5          | QPSK       | 1.4MHz    | 1                    | 0                     |
| 18.05                       | 18.09  | 18.12  | 18.5          | QPSK       | 1.4MHz    | 1                    | 2                     |
| 17.91                       | 18.08  | 18.14  | 18.5          | QPSK       | 1.4MHz    | 1                    | 5                     |
| 16.97                       | 17.09  | 17.22  | 18.5          | QPSK       | 1.4MHz    | 3                    | 0                     |
| 17.04                       | 17.07  | 17.20  | 18.5          | QPSK       | 1.4MHz    | 3                    | 1                     |
| 17.01                       | 17.09  | 17.22  | 18.5          | QPSK       | 1.4MHz    | 3                    | 3                     |
| 17.02                       | 17.09  | 17.29  | 17.5          | QPSK       | 1.4MHz    | 6                    | 0                     |
| 17.12                       | 17.40  | 17.34  | 17.5          | 16QAM      | 1.4MHz    | 1                    | 0                     |
| 17.04                       | 16.73  | 17.07  | 17.5          | 16QAM      | 1.4MHz    | 1                    | 2                     |
| 17.33                       | 17.33  | 16.91  | 17.5          | 16QAM      | 1.4MHz    | 1                    | 5                     |
| 15.91                       | 16.02  | 16.26  | 17.5          | 16QAM      | 1.4MHz    | 3                    | 0                     |
| 15.92                       | 15.98  | 16.16  | 17.5          | 16QAM      | 1.4MHz    | 3                    | 1                     |
| 16.00                       | 16.12  | 16.35  | 17.5          | 16QAM      | 1.4MHz    | 3                    | 3                     |
| 16.01                       | 16.08  | 16.30  | 16.5          | 16QAM      | 1.4MHz    | 6                    | 0                     |

| LTE Band 66                 |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 131987                      | 132322 | 132657 | Channel       |            |           |                      |                       |
| 1711.5                      | 1745   | 1778.5 | Freq. (MHz)   |            |           |                      |                       |
| 18.01                       | 17.98  | 18.20  | 18.5          | QPSK       | 3MHz      | 1                    | 0                     |
| 17.96                       | 18.05  | 18.19  | 18.5          | QPSK       | 3MHz      | 1                    | 7                     |
| 17.81                       | 18.21  | 18.13  | 18.5          | QPSK       | 3MHz      | 1                    | 14                    |
| 17.00                       | 17.09  | 17.21  | 17.5          | QPSK       | 3MHz      | 8                    | 0                     |
| 16.95                       | 17.12  | 17.24  | 17.5          | QPSK       | 3MHz      | 8                    | 3                     |
| 16.99                       | 17.10  | 17.21  | 17.5          | QPSK       | 3MHz      | 8                    | 7                     |
| 17.05                       | 17.03  | 17.33  | 17.5          | QPSK       | 3MHz      | 15                   | 0                     |
| 17.13                       | 17.42  | 17.32  | 17.5          | 16QAM      | 3MHz      | 1                    | 0                     |
| 17.07                       | 16.67  | 17.06  | 17.5          | 16QAM      | 3MHz      | 1                    | 7                     |
| 17.40                       | 17.29  | 16.87  | 17.5          | 16QAM      | 3MHz      | 1                    | 14                    |
| 15.97                       | 16.06  | 16.27  | 16.5          | 16QAM      | 3MHz      | 8                    | 0                     |
| 15.96                       | 15.97  | 16.23  | 16.5          | 16QAM      | 3MHz      | 8                    | 3                     |
| 15.92                       | 16.11  | 16.28  | 16.5          | 16QAM      | 3MHz      | 8                    | 7                     |
| 15.97                       | 16.07  | 16.34  | 16.5          | 16QAM      | 3MHz      | 15                   | 0                     |

| LTE Band 66                 |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 131997                      | 132322 | 132647 | Channel       |            |           |                      |                       |
| 1712.5                      | 1745   | 1777.5 | Freq. (MHz)   |            |           |                      |                       |
| 17.98                       | 18.18  | 18.23  | 18.5          | QPSK       | 5MHz      | 1                    | 0                     |
| 17.92                       | 18.03  | 18.12  | 18.5          | QPSK       | 5MHz      | 1                    | 12                    |
| 17.82                       | 18.05  | 18.21  | 18.5          | QPSK       | 5MHz      | 1                    | 24                    |
| 16.97                       | 17.01  | 17.21  | 17.5          | QPSK       | 5MHz      | 12                   | 0                     |
| 17.01                       | 17.03  | 17.18  | 17.5          | QPSK       | 5MHz      | 12                   | 6                     |
| 17.02                       | 17.12  | 17.23  | 17.5          | QPSK       | 5MHz      | 12                   | 13                    |
| 17.09                       | 17.07  | 17.34  | 17.5          | QPSK       | 5MHz      | 25                   | 0                     |
| 17.12                       | 17.34  | 17.29  | 17.5          | 16QAM      | 5MHz      | 1                    | 0                     |
| 17.06                       | 16.73  | 17.02  | 17.5          | 16QAM      | 5MHz      | 1                    | 12                    |
| 17.37                       | 17.31  | 16.94  | 17.5          | 16QAM      | 5MHz      | 1                    | 24                    |
| 15.91                       | 16.06  | 16.29  | 16.5          | 16QAM      | 5MHz      | 12                   | 0                     |
| 16.00                       | 16.07  | 16.21  | 16.5          | 16QAM      | 5MHz      | 12                   | 6                     |
| 16.00                       | 16.07  | 16.36  | 16.5          | 16QAM      | 5MHz      | 12                   | 13                    |
| 16.03                       | 16.13  | 16.25  | 16.5          | 16QAM      | 5MHz      | 25                   | 0                     |

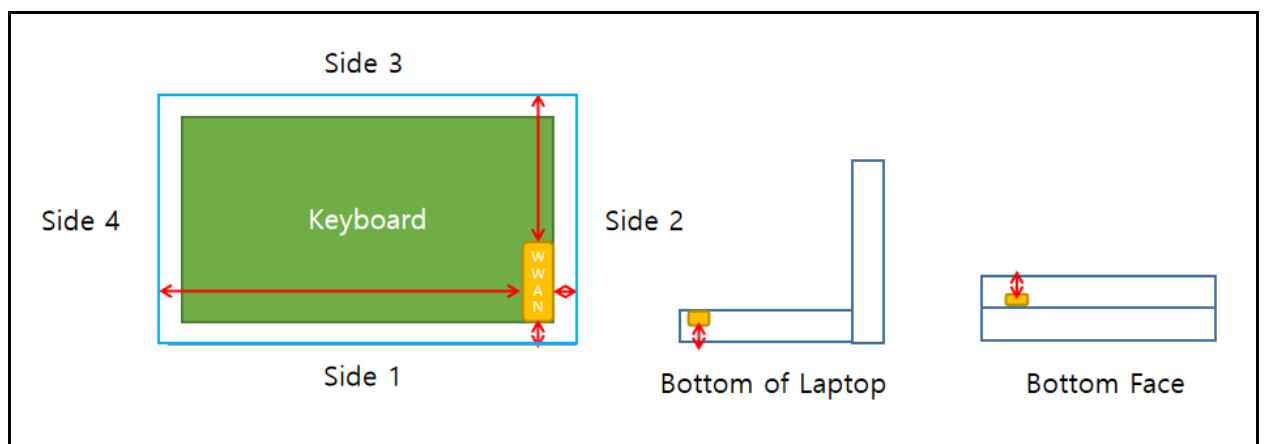
| LTE Band 66                 |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 132022                      | 132322 | 132622 | Channel       |            |           |                      |                       |
| 1715                        | 1745   | 1775   | Freq. (MHz)   |            |           |                      |                       |
| 18.03                       | 17.99  | 18.20  | 18.5          | QPSK       | 10MHz     | 1                    | 0                     |
| 17.95                       | 18.01  | 18.18  | 18.5          | QPSK       | 10MHz     | 1                    | 24                    |
| 17.88                       | 18.06  | 18.16  | 18.5          | QPSK       | 10MHz     | 1                    | 49                    |
| 17.01                       | 17.00  | 17.24  | 17.5          | QPSK       | 10MHz     | 25                   | 0                     |
| 16.96                       | 17.07  | 17.19  | 17.5          | QPSK       | 10MHz     | 25                   | 12                    |
| 16.93                       | 17.03  | 17.27  | 17.5          | QPSK       | 10MHz     | 25                   | 25                    |
| 17.07                       | 17.07  | 17.33  | 17.5          | QPSK       | 10MHz     | 50                   | 0                     |
| 17.12                       | 17.36  | 17.31  | 17.5          | 16QAM      | 10MHz     | 1                    | 0                     |
| 17.09                       | 16.75  | 16.99  | 17.5          | 16QAM      | 10MHz     | 1                    | 24                    |
| 17.39                       | 17.27  | 16.95  | 17.5          | 16QAM      | 10MHz     | 1                    | 49                    |
| 15.95                       | 15.99  | 16.24  | 16.5          | 16QAM      | 10MHz     | 25                   | 0                     |
| 15.94                       | 16.02  | 16.22  | 16.5          | 16QAM      | 10MHz     | 25                   | 12                    |
| 15.98                       | 16.11  | 16.34  | 16.5          | 16QAM      | 10MHz     | 25                   | 25                    |
| 16.05                       | 16.08  | 16.31  | 16.5          | 16QAM      | 10MHz     | 50                   | 0                     |

| LTE Band 66                 |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 132047                      | 132322 | 132597 | Channel       |            |           |                      |                       |
| 1717.5                      | 1745   | 1772.5 | Freq. (MHz)   |            |           |                      |                       |
| 18.02                       | 17.97  | 18.24  | 18.5          | QPSK       | 15MHz     | 1                    | 0                     |
| 17.93                       | 18.00  | 18.19  | 18.5          | QPSK       | 15MHz     | 1                    | 37                    |
| 17.88                       | 18.05  | 18.26  | 18.5          | QPSK       | 15MHz     | 1                    | 74                    |
| 16.96                       | 17.04  | 17.20  | 17.5          | QPSK       | 15MHz     | 36                   | 0                     |
| 16.97                       | 17.10  | 17.23  | 17.5          | QPSK       | 15MHz     | 36                   | 19                    |
| 16.94                       | 17.09  | 17.19  | 17.5          | QPSK       | 15MHz     | 36                   | 39                    |
| 17.01                       | 17.08  | 17.27  | 17.5          | QPSK       | 15MHz     | 75                   | 0                     |
| 17.12                       | 17.25  | 17.16  | 17.5          | 16QAM      | 15MHz     | 1                    | 0                     |
| 17.09                       | 16.67  | 17.05  | 17.5          | 16QAM      | 15MHz     | 1                    | 37                    |
| 17.33                       | 17.27  | 16.93  | 17.5          | 16QAM      | 15MHz     | 1                    | 74                    |
| 15.96                       | 16.04  | 16.23  | 16.5          | 16QAM      | 15MHz     | 36                   | 0                     |
| 15.92                       | 15.99  | 16.18  | 16.5          | 16QAM      | 15MHz     | 36                   | 19                    |
| 16.01                       | 16.07  | 16.26  | 16.5          | 16QAM      | 15MHz     | 36                   | 39                    |
| 15.97                       | 16.09  | 16.33  | 16.5          | 16QAM      | 15MHz     | 75                   | 0                     |

| LTE Band 66                 |        |        |               |            |           |                      |                       |
|-----------------------------|--------|--------|---------------|------------|-----------|----------------------|-----------------------|
| Maximum Average Power (dBm) |        |        | Tune up (dBm) | Modulation | Bandwidth | # of Resource Blocks | Resource Block Offset |
| 132072                      | 132322 | 132572 | Channel       |            |           |                      |                       |
| 1720                        | 1745   | 1770   | Freq. (MHz)   |            |           |                      |                       |
| 18.05                       | 18.08  | 18.05  | 18.5          | QPSK       | 20MHz     | 1                    | 0                     |
| 17.98                       | 18.10  | 18.12  | 18.5          | QPSK       | 20MHz     | 1                    | 49                    |
| 18.31                       | 18.29  | 18.15  | 18.5          | QPSK       | 20MHz     | 1                    | 99                    |
| 17.04                       | 17.10  | 17.25  | 17.5          | QPSK       | 20MHz     | 50                   | 0                     |
| 17.04                       | 17.12  | 17.24  | 17.5          | QPSK       | 20MHz     | 50                   | 25                    |
| 17.14                       | 17.37  | 17.29  | 17.5          | QPSK       | 20MHz     | 50                   | 50                    |
| 17.10                       | 17.37  | 17.13  | 17.5          | QPSK       | 20MHz     | 100                  | 0                     |
| 17.17                       | 17.42  | 17.39  | 17.5          | 16QAM      | 20MHz     | 1                    | 0                     |
| 17.09                       | 16.76  | 17.08  | 17.5          | 16QAM      | 20MHz     | 1                    | 49                    |
| 17.42                       | 17.36  | 16.96  | 17.5          | 16QAM      | 20MHz     | 1                    | 99                    |
| 16.01                       | 16.09  | 16.30  | 16.5          | 16QAM      | 20MHz     | 50                   | 0                     |
| 16.02                       | 16.07  | 16.26  | 16.5          | 16QAM      | 20MHz     | 50                   | 25                    |
| 16.01                       | 16.15  | 16.36  | 16.5          | 16QAM      | 20MHz     | 50                   | 50                    |
| 16.06                       | 16.14  | 16.34  | 16.5          | 16QAM      | 20MHz     | 100                  | 0                     |

### 11.5 Antenna location

| Antenna | Bottom of Laptop<br>(mm) | Bottom Face<br>(mm) | Side 1<br>(mm) | Side 2<br>(mm) | Side 3<br>(mm) | Side 4<br>(mm) |
|---------|--------------------------|---------------------|----------------|----------------|----------------|----------------|
| WWAN    | <5                       | <5                  | 10             | <5             | 133            | 307            |





## 11.6 SAR Test Exclusion

| Body SAR test reduction |          |           |            |      |                               |             |       |       |       |       |                                            |             |         |         |        |        |                     |
|-------------------------|----------|-----------|------------|------|-------------------------------|-------------|-------|-------|-------|-------|--------------------------------------------|-------------|---------|---------|--------|--------|---------------------|
| Ant. Used               | Band     | Frequency | Tune-Power |      | Distance of Ant. To User (mm) |             |       |       |       |       | Calculated value and evaluated result (mW) |             |         |         |        |        | exclusion threshold |
|                         |          | (GHz)     | (dBm)      | (mW) | Bottom of laptop              | Bottom Face | Side1 | Side2 | Side3 | Side4 | Bottom of laptop                           | Bottom Face | Side1   | Side2   | Side3  | Side4  |                     |
| WWAN Antenna            | WCDMA II | 1.907     | 24.5       | 282  | 5                             | 5           | 10    | 5     | 133   | 307   | 77.9                                       | 77.9        | 38.9    | 77.9    | 939.0  | 2679.0 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | WCDMA IV | 1.750     | 24.5       | 282  | 5                             | 5           | 10    | 5     | 133   | 307   | 74.6                                       | 74.6        | 37.3    | 74.6    | 943.0  | 2683.0 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | WCDMA V  | 0.846     | 24.5       | 282  | 5                             | 5           | 10    | 5     | 133   | 307   | 51.9                                       | 51.9        | 25.9    | 51.9    | 631.2  | 1612.6 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | LTE 2    | 1.909     | 24         | 251  | 5                             | 5           | 10    | 5     | 133   | 307   | 69.4                                       | 69.4        | 34.7    | 69.4    | 939.0  | 2679.0 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | LTE 4    | 1.754     | 24         | 251  | 5                             | 5           | 10    | 5     | 133   | 307   | 66.5                                       | 66.5        | 33.2    | 66.5    | 943.0  | 2683.0 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | LTE 5    | 0.848     | 24         | 251  | 5                             | 5           | 10    | 5     | 133   | 307   | 46.2                                       | 46.2        | 23.1    | 46.2    | 632.1  | 1615.8 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | LTE 7    | 2.567     | 24         | 251  | 5                             | 5           | 10    | 5     | 133   | 307   | 80.4                                       | 80.4        | 40.2    | 80.4    | 924.0  | 2664.0 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | LTE 12   | 0.715     | 24         | 251  | 5                             | 5           | 10    | 5     | 133   | 307   | 42.5                                       | 42.5        | 21.2    | 42.5    | 573.0  | 1402.4 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | LTE 13   | 0.783     | 24         | 251  | 5                             | 5           | 10    | 5     | 133   | 307   | 44.4                                       | 44.4        | 22.2    | 44.4    | 602.8  | 1511.1 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | LTE 17   | 0.713     | 24         | 251  | 5                             | 5           | 10    | 5     | 133   | 307   | 42.4                                       | 42.4        | 21.2    | 42.4    | 572.2  | 1399.2 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | LTE 26   | 0.848     | 24         | 251  | 5                             | 5           | 10    | 5     | 133   | 307   | 46.2                                       | 46.2        | 23.1    | 46.2    | 632.1  | 1615.8 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | LTE 30   | 2.310     | 24         | 251  | 5                             | 5           | 10    | 5     | 133   | 307   | 76.3                                       | 76.3        | 38.2    | 76.3    | 929.0  | 2669.0 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | LTE 38   | 2.618     | 24         | 251  | 5                             | 5           | 10    | 5     | 133   | 307   | 81.2                                       | 81.2        | 40.6    | 81.2    | 923.0  | 2663.0 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | LTE 41   | 2.688     | 24         | 251  | 5                             | 5           | 10    | 5     | 133   | 307   | 82.3                                       | 82.3        | 41.2    | 82.3    | 921.0  | 2661.0 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |
|                         | LTE 66   | 1.779     | 24         | 251  | 5                             | 5           | 10    | 5     | 133   | 307   | 67.0                                       | 67.0        | 33.5    | 67.0    | 942.0  | 2682.0 | 3                   |
|                         |          |           |            |      |                               |             |       |       |       |       | MEASURE                                    | MEASURE     | MEASURE | MEASURE | EXEMPT | EXEMPT |                     |



Note:

1. The test reduction for distance less than 50 mm and more than 50 mm. Use the max power to make sure minimum distance by evaluated for SAR testing.
2. For 100 MHz to 6 GHz and test separation distances > 50 mm, According to KDB 447498, if the calculated Power threshold is less than the output power then SAR testing is required.
3. For 100 MHz to 6 GHz and test separation distances  $\leq$  50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:  
According to KDB 447498, if the calculated threshold values are >3 then Body SAR and >7.5 then Limbs, SAR testing are required. Calculated Value only include number format, that means through compare output power with threshold, if the Calculated value more than 3, the SAR test should be perform. Otherwise, the SAR test could be exempt. (<50 mm)
4. The threshold  $P_{th}$  (mW) described in §1.1307(b)(3)(i)(B) was also considered and compared with the calculated values from KDB447498 v06. The most conservative values compared between KDB447498 v06 method and §1.1307 method were select as the threshold in this report.
5. When an antenna qualifies for the standalone SAR test exclusion and also transmits simultaneously with other antennas, the standalone SAR value must be estimated in accordance with KDB 447498.
6. Power and distance are rounded to the nearest mW and mm before calculation.
7. The result is rounded to one decimal place for comparison.
8. The SAR test has included the exemption part in practice.

## 11.7 Test Results

### 11.7.1 SAR Test Result

| Index. | Band          | Frequency |        | Modulation or Sub-Test | Test Position          | Spacing | SAR <sub>1g</sub><br>(W/Kg) | Burst Avg Power (dBm) | Max tune-up (dBm) | Reported SAR <sub>1g</sub> | Note         |
|--------|---------------|-----------|--------|------------------------|------------------------|---------|-----------------------------|-----------------------|-------------------|----------------------------|--------------|
|        |               | Ch.       | MHz    |                        |                        | (mm)    |                             |                       |                   |                            |              |
|        | WCDMA Band II | 9400      | 1880   | RMC12.2K               | Bottom of laptop       | 0       | 0.898                       | 18.66                 | 19                | 0.971                      | Power Reduce |
|        | WCDMA Band II | 9262      | 1852.4 | RMC12.2K               | Bottom of laptop       | 0       | 0.823                       | 18.63                 | 19                | 0.896                      | Power Reduce |
|        | WCDMA Band II | 9538      | 1907.6 | RMC12.2K               | Bottom of laptop       | 0       | 0.903                       | 18.57                 | 19                | 0.997                      | Power Reduce |
|        | WCDMA Band II | 9400      | 1880   | RMC12.2K               | Bottom of laptop       | 14      | 0.551                       | 23.5                  | 24.5              | 0.694                      |              |
|        | WCDMA Band II | 9400      | 1880   | RMC12.2K               | Back of display screen | 25      | 0.01                        | 23.5                  | 24.5              | 0.013                      |              |
|        | WCDMA Band II | 9400      | 1880   | RMC12.2K               | Bottom Face            | 0       | 0.897                       | 18.66                 | 19                | 0.970                      | Power Reduce |
|        | WCDMA Band II | 9262      | 1852.4 | RMC12.2K               | Bottom Face            | 0       | 0.863                       | 18.63                 | 19                | 0.940                      | Power Reduce |
| #3     | WCDMA Band II | 9538      | 1907.6 | RMC12.2K               | Bottom Face            | 0       | 0.907                       | 18.57                 | 19                | 1.001                      | Power Reduce |
|        | WCDMA Band II | 9400      | 1880   | RMC12.2K               | Bottom Face            | 14      | 0.335                       | 23.5                  | 24.5              | 0.422                      |              |
|        | WCDMA Band II | 9400      | 1880   | RMC12.2K               | Side 1                 | 0       | 0.01                        | 23.5                  | 24.5              | 0.013                      |              |
|        | WCDMA Band II | 9400      | 1880   | RMC12.2K               | Side 2                 | 0       | 0.611                       | 18.66                 | 19                | 0.661                      | Power Reduce |
|        | WCDMA Band II | 9400      | 1880   | RMC12.2K               | Side 2                 | 14      | 0.223                       | 23.5                  | 24.5              | 0.281                      |              |
|        | WCDMA Band II | 9400      | 1880   | RMC12.2K               | Side 3                 | 0       | 0.01                        | 23.5                  | 24.5              | 0.013                      |              |
|        | WCDMA Band II | 9400      | 1880   | RMC12.2K               | Side 4                 | 0       | 0.01                        | 23.5                  | 24.5              | 0.013                      |              |
|        |               |           |        |                        |                        |         |                             |                       |                   |                            |              |
|        | WCDMA Band IV | 1413      | 1732.6 | RMC12.2K               | Bottom of laptop       | 0       | 0.856                       | 17.26                 | 18                | 1.015                      | Power Reduce |
|        | WCDMA Band IV | 1312      | 1712.4 | RMC12.2K               | Bottom of laptop       | 0       | 0.791                       | 17.15                 | 18                | 0.962                      | Power Reduce |
|        | WCDMA Band IV | 1513      | 1752.6 | RMC12.2K               | Bottom of laptop       | 0       | 0.777                       | 17.19                 | 18                | 0.936                      | Power Reduce |
|        | WCDMA Band IV | 1513      | 1752.6 | RMC12.2K               | Bottom of laptop       | 14      | 0.768                       | 23.74                 | 24.5              | 0.915                      |              |
|        | WCDMA Band IV | 1312      | 1712.4 | RMC12.2K               | Bottom of laptop       | 14      | 0.762                       | 23.69                 | 24.5              | 0.918                      |              |
|        | WCDMA Band IV | 1413      | 1732.6 | RMC12.2K               | Bottom of laptop       | 14      | 0.677                       | 23.62                 | 24.5              | 0.829                      |              |
|        | WCDMA Band IV | 1513      | 1752.6 | RMC12.2K               | Back of display screen | 25      | 0.01                        | 23.74                 | 24.5              | 0.012                      |              |
|        | WCDMA Band IV | 1413      | 1732.6 | RMC12.2K               | Bottom Face            | 0       | 0.857                       | 17.26                 | 18                | 1.016                      | Power Reduce |
| #6     | WCDMA Band IV | 1312      | 1712.4 | RMC12.2K               | Bottom Face            | 0       | 0.888                       | 17.15                 | 18                | 1.080                      | Power Reduce |
|        | WCDMA Band IV | 1513      | 1752.6 | RMC12.2K               | Bottom Face            | 0       | 0.787                       | 17.19                 | 18                | 0.948                      | Power Reduce |
|        | WCDMA Band IV | 1513      | 1752.6 | RMC12.2K               | Bottom Face            | 14      | 0.688                       | 23.74                 | 24.5              | 0.820                      |              |
|        | WCDMA Band IV | 1312      | 1712.4 | RMC12.2K               | Bottom Face            | 14      | 0.868                       | 23.69                 | 24.5              | 1.046                      |              |
|        | WCDMA Band IV | 1413      | 1732.6 | RMC12.2K               | Bottom Face            | 14      | 0.714                       | 23.62                 | 24.5              | 0.874                      |              |
|        | WCDMA Band IV | 1513      | 1752.6 | RMC12.2K               | Side 1                 | 0       | 0.01                        | 23.74                 | 24.5              | 0.012                      |              |
|        | WCDMA Band IV | 1413      | 1732.6 | RMC12.2K               | Side 2                 | 0       | 0.832                       | 17.26                 | 18                | 0.987                      | Power Reduce |
|        | WCDMA Band IV | 1312      | 1712.4 | RMC12.2K               | Side 2                 | 0       | 0.791                       | 17.15                 | 18                | 0.962                      | Power Reduce |
|        | WCDMA Band IV | 1513      | 1752.6 | RMC12.2K               | Side 2                 | 0       | 0.777                       | 17.19                 | 18                | 0.936                      | Power Reduce |
|        | WCDMA Band IV | 1513      | 1752.6 | RMC12.2K               | Side 2                 | 14      | 0.333                       | 23.74                 | 24.5              | 0.397                      |              |
|        | WCDMA Band IV | 1513      | 1752.6 | RMC12.2K               | Side 3                 | 0       | 0.01                        | 23.74                 | 24.5              | 0.012                      |              |
|        | WCDMA Band IV | 1513      | 1752.6 | RMC12.2K               | Side 4                 | 0       | 0.01                        | 23.74                 | 24.5              | 0.012                      |              |

| Index. | Band         | Frequency |       | Modulation or Sub-Test | Test Position          | Spacing | SAR <sub>1g</sub> | Burst Avg Power (dBm) | Max tune-up (dBm) | Reported SAR <sub>1g</sub> | Note         |
|--------|--------------|-----------|-------|------------------------|------------------------|---------|-------------------|-----------------------|-------------------|----------------------------|--------------|
|        |              | Ch.       | MHz   |                        |                        | (mm)    | (W/Kg)            |                       |                   |                            |              |
| #100   | WCDMA Band V | 4182      | 836.4 | RMC12.2K               | Bottom of laptop       | 0       | 0.686             | 20.47                 | 21                | 0.775                      | Power Reduce |
|        | WCDMA Band V | 4182      | 836.4 | RMC12.2K               | Bottom of laptop       | 14      | 0.369             | 23.59                 | 24.5              | 0.455                      |              |
|        | WCDMA Band V | 4182      | 836.4 | RMC12.2K               | Back of display screen | 25      | 0.01              | 23.59                 | 24.5              | 0.012                      |              |
|        | WCDMA Band V | 4182      | 836.4 | RMC12.2K               | Bottom Face            | 0       | 0.504             | 20.47                 | 21                | 0.569                      | Power Reduce |
|        | WCDMA Band V | 4182      | 836.4 | RMC12.2K               | Bottom Face            | 14      | 0.275             | 23.59                 | 24.5              | 0.339                      |              |
|        | WCDMA Band V | 4182      | 836.4 | RMC12.2K               | Side 1                 | 0       | 0.01              | 23.59                 | 24.5              | 0.012                      |              |
|        | WCDMA Band V | 4182      | 836.4 | RMC12.2K               | Side 2                 | 0       | 0.388             | 23.59                 | 24.5              | 0.478                      |              |
|        | WCDMA Band V | 4182      | 836.4 | RMC12.2K               | Side 3                 | 0       | 0.01              | 23.59                 | 24.5              | 0.012                      |              |
|        | WCDMA Band V | 4182      | 836.4 | RMC12.2K               | Side 4                 | 0       | 0.01              | 23.59                 | 24.5              | 0.012                      |              |

| Index. | Band       | Frequency |      | Bandwidth | Modulation | RB Size | RB Offset | Test Position          | Spacing | SAR <sub>1g</sub> | Burst Avg Power (dBm) | Max tune-up (dBm) | Reported SAR <sub>1g</sub> | Note         |
|--------|------------|-----------|------|-----------|------------|---------|-----------|------------------------|---------|-------------------|-----------------------|-------------------|----------------------------|--------------|
|        |            | Ch.       | MHz  |           |            |         |           |                        | (mm)    | (W/Kg)            |                       |                   |                            |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 1       | 49        | Bottom of laptop       | 0       | 1.06              | 18.85                 | 19                | 1.097                      | Power Reduce |
|        | LTE Band 2 | 18700     | 1860 | 20M       | QPSK       | 1       | 0         | Bottom of laptop       | 0       | 1.02              | 18.79                 | 19                | 1.071                      | Power Reduce |
| #21    | LTE Band 2 | 19100     | 1900 | 20M       | QPSK       | 1       | 0         | Bottom of laptop       | 0       | 1.07              | 18.77                 | 19                | 1.128                      | Power Reduce |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 50      | 0         | Bottom of laptop       | 0       | 0.997             | 17.65                 | 18                | 1.081                      | Power Reduce |
|        | LTE Band 2 | 18700     | 1860 | 20M       | QPSK       | 50      | 0         | Bottom of laptop       | 0       | 0.928             | 17.55                 | 18                | 1.029                      | Power Reduce |
|        | LTE Band 2 | 19100     | 1900 | 20M       | QPSK       | 50      | 0         | Bottom of laptop       | 0       | 0.914             | 17.36                 | 18                | 1.059                      | Power Reduce |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 100     | 0         | Bottom of laptop       | 0       | 0.923             | 17.68                 | 18                | 0.994                      | Power Reduce |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 1       | 49        | Bottom of laptop       | 14      | 0.48              | 22.73                 | 24                | 0.643                      |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 50      | 0         | Bottom of laptop       | 14      | 0.334             | 21.66                 | 23                | 0.455                      |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 1       | 49        | Back of display screen | 25      | 0.01              | 22.73                 | 24                | 0.013                      |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 50      | 0         | Back of display screen | 25      | 0.01              | 21.66                 | 23                | 0.014                      |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 1       | 49        | Bottom Face            | 0       | 0.885             | 18.85                 | 19                | 0.916                      | Power Reduce |
|        | LTE Band 2 | 18700     | 1860 | 20M       | QPSK       | 1       | 0         | Bottom Face            | 0       | 0.845             | 18.79                 | 19                | 0.887                      | Power Reduce |
|        | LTE Band 2 | 19100     | 1900 | 20M       | QPSK       | 1       | 0         | Bottom Face            | 0       | 0.824             | 18.77                 | 19                | 0.869                      | Power Reduce |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 50      | 0         | Bottom Face            | 0       | 0.779             | 17.65                 | 18                | 0.844                      | Power Reduce |
|        | LTE Band 2 | 18700     | 1860 | 20M       | QPSK       | 50      | 0         | Bottom Face            | 0       | 0.741             | 17.55                 | 18                | 0.822                      | Power Reduce |
|        | LTE Band 2 | 19100     | 1900 | 20M       | QPSK       | 50      | 0         | Bottom Face            | 0       | 0.727             | 17.36                 | 18                | 0.842                      | Power Reduce |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 100     | 0         | Bottom Face            | 0       | 0.743             | 17.68                 | 18                | 0.800                      | Power Reduce |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 1       | 49        | Bottom Face            | 14      | 0.258             | 22.73                 | 24                | 0.346                      |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 50      | 0         | Bottom Face            | 14      | 0.204             | 21.66                 | 23                | 0.278                      |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 1       | 49        | Side 1                 | 0       | 0.06              | 22.73                 | 24                | 0.080                      |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 50      | 0         | Side 1                 | 0       | 0.045             | 21.66                 | 23                | 0.061                      |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 1       | 49        | Side 2                 | 0       | 0.677             | 18.85                 | 19                | 0.701                      | Power Reduce |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 50      | 0         | Side 2                 | 0       | 0.631             | 17.65                 | 18                | 0.684                      | Power Reduce |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 1       | 49        | Side 2                 | 14      | 0.174             | 22.73                 | 24                | 0.233                      |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 50      | 0         | Side 2                 | 14      | 0.141             | 21.66                 | 23                | 0.192                      |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 1       | 49        | Side 3                 | 0       | 0.079             | 22.73                 | 24                | 0.106                      |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 50      | 0         | Side 3                 | 0       | 0.068             | 21.66                 | 23                | 0.093                      |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 1       | 49        | Side 4                 | 0       | 0.069             | 22.73                 | 24                | 0.092                      |              |
|        | LTE Band 2 | 18900     | 1880 | 20M       | QPSK       | 50      | 0         | Side 4                 | 0       | 0.057             | 21.66                 | 23                | 0.078                      |              |



| Index. | Band       | Frequency |      | Bandwidth | Modulation | RB Size | RB Offset | Test Position          | Spacing | SAR <sub>1g</sub> | Burst Avg Power (dBm) | Max tune-up (dBm) | Reported SAR <sub>1g</sub> | Note         |
|--------|------------|-----------|------|-----------|------------|---------|-----------|------------------------|---------|-------------------|-----------------------|-------------------|----------------------------|--------------|
|        |            | Ch.       | MHz  |           |            |         |           |                        | (mm)    | (W/Kg)            |                       |                   |                            |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 1       | 0         | Bottom of laptop       | 0       | 0.583             | 14.97                 | 15.5              | 0.659                      | Power Reduce |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 50      | 50        | Bottom of laptop       | 0       | 0.522             | 14.04                 | 14.5              | 0.580                      | Power Reduce |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 1       | 0         | Bottom of laptop       | 14      | 0.517             | 22.97                 | 24                | 0.655                      |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 50      | 50        | Bottom of laptop       | 14      | 0.423             | 22.01                 | 23                | 0.531                      |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 1       | 0         | Back of display screen | 25      | 0.01              | 22.97                 | 24                | 0.013                      |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 50      | 50        | Back of display screen | 25      | 0.01              | 22.01                 | 23                | 0.013                      |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 1       | 0         | Bottom Face            | 0       | 0.849             | 14.97                 | 15.5              | 0.959                      | Power Reduce |
| #30    | LTE Band 7 | 20850     | 2510 | 20M       | QPSK       | 1       | 0         | Bottom Face            | 0       | 0.86              | 14.77                 | 15.5              | 1.017                      | Power Reduce |
|        | LTE Band 7 | 21100     | 2535 | 20M       | QPSK       | 1       | 0         | Bottom Face            | 0       | 0.839             | 14.84                 | 15.5              | 0.977                      | Power Reduce |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 50      | 50        | Bottom Face            | 0       | 0.773             | 14.04                 | 14.5              | 0.859                      | Power Reduce |
|        | LTE Band 7 | 20850     | 2510 | 20M       | QPSK       | 50      | 50        | Bottom Face            | 0       | 0.755             | 13.78                 | 14.5              | 0.891                      | Power Reduce |
|        | LTE Band 7 | 21100     | 2535 | 20M       | QPSK       | 50      | 50        | Bottom Face            | 0       | 0.767             | 13.97                 | 14.5              | 0.867                      | Power Reduce |
|        | LTE Band 7 | 21100     | 2535 | 20M       | QPSK       | 100     | 0         | Bottom Face            | 0       | 0.732             | 14.05                 | 14.5              | 0.812                      | Power Reduce |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 1       | 0         | Bottom Face            | 14      | 0.363             | 22.97                 | 24                | 0.460                      |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 50      | 50        | Bottom Face            | 14      | 0.294             | 22.01                 | 23                | 0.369                      |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 1       | 0         | Side 1                 | 0       | 0.083             | 22.97                 | 24                | 0.105                      |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 50      | 50        | Side 1                 | 0       | 0.079             | 22.01                 | 23                | 0.099                      |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 1       | 0         | Side 2                 | 0       | 0.324             | 14.97                 | 15.5              | 0.366                      | Power Reduce |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 50      | 50        | Side 2                 | 0       | 0.375             | 14.04                 | 14.5              | 0.417                      | Power Reduce |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 1       | 0         | Side 2                 | 14      | 0.161             | 22.97                 | 24                | 0.204                      |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 50      | 50        | Side 2                 | 14      | 0.137             | 22.01                 | 23                | 0.172                      |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 1       | 0         | Side 3                 | 0       | 0.102             | 22.97                 | 24                | 0.129                      |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 50      | 50        | Side 3                 | 0       | 0.099             | 22.01                 | 23                | 0.124                      |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 1       | 0         | Side 4                 | 0       | 0.088             | 22.97                 | 24                | 0.112                      |              |
|        | LTE Band 7 | 21350     | 2560 | 20M       | QPSK       | 50      | 50        | Side 4                 | 0       | 0.092             | 22.01                 | 23                | 0.116                      |              |



| Index. | Band        | Frequency |       | Bandwidth | Modulation | RB Size | RB Offset | Test Position          | Spacing | SAR <sub>1g</sub> | Burst Avg Power (dBm) | Max tune-up (dBm) | Reported SAR <sub>1g</sub> | Note         |
|--------|-------------|-----------|-------|-----------|------------|---------|-----------|------------------------|---------|-------------------|-----------------------|-------------------|----------------------------|--------------|
|        |             | Ch.       | MHz   |           |            |         |           |                        | (mm)    | (W/Kg)            |                       |                   |                            |              |
| #23    | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 1       | 49        | Bottom of laptop       | 0       | 1.03              | 22.53                 | 23                | 1.148                      | Power Reduce |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 25      | 25        | Bottom of laptop       | 0       | 0.931             | 21.48                 | 22                | 1.049                      | Power Reduce |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 50      | 0         | Bottom of laptop       | 0       | 0.904             | 21.49                 | 22                | 1.017                      | Power Reduce |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 1       | 49        | Bottom of laptop       | 14      | 0.258             | 22.85                 | 24                | 0.336                      |              |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 25      | 25        | Bottom of laptop       | 14      | 0.217             | 21.73                 | 23                | 0.291                      |              |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 1       | 49        | Back of display screen | 25      | 0.01              | 22.85                 | 24                | 0.013                      |              |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 25      | 25        | Back of display screen | 25      | 0.01              | 21.73                 | 23                | 0.013                      |              |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 1       | 49        | Bottom Face            | 0       | 1.01              | 22.53                 | 23                | 1.125                      | Power Reduce |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 25      | 25        | Bottom Face            | 0       | 0.906             | 21.48                 | 22                | 1.021                      | Power Reduce |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 50      | 0         | Bottom Face            | 0       | 0.826             | 21.49                 | 22                | 0.929                      | Power Reduce |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 1       | 49        | Bottom Face            | 14      | 0.175             | 22.85                 | 24                | 0.228                      |              |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 25      | 25        | Bottom Face            | 14      | 0.127             | 21.73                 | 23                | 0.170                      |              |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 1       | 49        | Side 1                 | 0       | 0.071             | 22.85                 | 24                | 0.093                      |              |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 25      | 25        | Side 1                 | 0       | 0.063             | 21.73                 | 23                | 0.084                      |              |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 1       | 49        | Side 2                 | 0       | 0.374             | 22.85                 | 24                | 0.487                      |              |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 25      | 25        | Side 2                 | 0       | 0.357             | 21.73                 | 23                | 0.478                      |              |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 1       | 49        | Side 3                 | 0       | 0.044             | 22.85                 | 24                | 0.057                      |              |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 25      | 25        | Side 3                 | 0       | 0.038             | 21.73                 | 23                | 0.051                      |              |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 1       | 49        | Side 4                 | 0       | 0.066             | 22.85                 | 24                | 0.086                      |              |
|        | LTE Band 12 | 23095     | 707.5 | 10M       | QPSK       | 25      | 25        | Side 4                 | 0       | 0.06              | 21.73                 | 23                | 0.080                      |              |
| #24    | LTE Band 17 | 23790     | 710   | 10M       | QPSK       | 1       | 0         | Bottom of laptop       | 0       | 0.893             | 20.72                 | 21.5              | 1.069                      | Power Reduce |
|        |             |           |       |           |            |         |           |                        |         |                   |                       |                   |                            |              |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 1       | 0         | Bottom of laptop       | 0       | 0.721             | 20.52                 | 21                | 0.805                      | Power Reduce |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 25      | 0         | Bottom of laptop       | 0       | 0.704             | 19.49                 | 20                | 0.792                      | Power Reduce |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 50      | 0         | Bottom of laptop       | 0       | 0.636             | 19.62                 | 20                | 0.694                      | Power Reduce |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 1       | 0         | Bottom of laptop       | 14      | 0.274             | 22.94                 | 24                | 0.350                      |              |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 25      | 0         | Bottom of laptop       | 14      | 0.219             | 21.96                 | 23                | 0.278                      |              |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 1       | 0         | Back of display screen | 25      | 0.01              | 22.94                 | 24                | 0.013                      |              |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 25      | 0         | Back of display screen | 25      | 0.01              | 21.96                 | 23                | 0.013                      |              |
| #25    | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 1       | 0         | Bottom Face            | 0       | 0.767             | 20.52                 | 21                | 0.857                      | Power Reduce |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 25      | 0         | Bottom Face            | 0       | 0.753             | 19.49                 | 20                | 0.847                      | Power Reduce |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 50      | 0         | Bottom Face            | 0       | 0.71              | 19.62                 | 20                | 0.775                      | Power Reduce |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 1       | 0         | Bottom Face            | 14      | 0.267             | 22.94                 | 24                | 0.341                      |              |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 25      | 0         | Bottom Face            | 14      | 0.219             | 21.96                 | 23                | 0.278                      |              |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 1       | 0         | Side 1                 | 0       | 0.064             | 22.94                 | 24                | 0.082                      |              |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 25      | 0         | Side 1                 | 0       | 0.059             | 21.96                 | 23                | 0.075                      |              |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 1       | 0         | Side 2                 | 0       | 0.298             | 22.94                 | 24                | 0.380                      |              |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 25      | 0         | Side 2                 | 0       | 0.233             | 21.96                 | 23                | 0.296                      |              |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 1       | 0         | Side 3                 | 0       | 0.054             | 22.94                 | 24                | 0.069                      |              |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 25      | 0         | Side 3                 | 0       | 0.051             | 21.96                 | 23                | 0.065                      |              |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 1       | 0         | Side 4                 | 0       | 0.067             | 22.94                 | 24                | 0.086                      |              |
|        | LTE Band 13 | 23230     | 782   | 10M       | QPSK       | 25      | 0         | Side 4                 | 0       | 0.059             | 21.96                 | 23                | 0.075                      |              |



| Index. | Band        | Frequency |       | Bandwidth | Modulation | RB Size | RB Offset | Test Position          | Spacing | SAR <sub>1g</sub> | Burst Avg Power (dBm) | Max tune-up (dBm) | Reported SAR <sub>1g</sub> | Note         |
|--------|-------------|-----------|-------|-----------|------------|---------|-----------|------------------------|---------|-------------------|-----------------------|-------------------|----------------------------|--------------|
|        |             | Ch.       | MHz   |           |            |         |           |                        | (mm)    | (W/Kg)            |                       |                   |                            |              |
| #34    | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 1       | 37        | Bottom of laptop       | 0       | 0.946             | 20.66                 | 21.5              | 1.148                      | Power Reduce |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 36      | 19        | Bottom of laptop       | 0       | 0.756             | 19.70                 | 20.5              | 0.909                      | Power Reduce |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 75      | 0         | Bottom of laptop       | 0       | 0.758             | 19.77                 | 20.5              | 0.897                      | Power Reduce |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 1       | 37        | Bottom of laptop       | 14      | 0.326             | 22.72                 | 24                | 0.438                      | FCC          |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 36      | 19        | Bottom of laptop       | 14      | 0.246             | 21.81                 | 23                | 0.324                      | FCC          |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 1       | 37        | Back of display screen | 25      | 0.01              | 22.72                 | 24                | 0.013                      | FCC          |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 36      | 19        | Back of display screen | 25      | 0.01              | 21.81                 | 23                | 0.013                      | FCC          |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 1       | 37        | Bottom Face            | 0       | 0.827             | 20.66                 | 21.5              | 1.003                      | Power Reduce |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 36      | 19        | Bottom Face            | 0       | 0.684             | 19.70                 | 20.5              | 0.822                      | Power Reduce |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 75      | 0         | Bottom Face            | 0       | 0.676             | 19.77                 | 20.5              | 0.800                      | Power Reduce |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 1       | 37        | Bottom Face            | 14      | 0.273             | 22.72                 | 24                | 0.367                      | FCC          |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 36      | 19        | Bottom Face            | 14      | 0.224             | 21.81                 | 23                | 0.295                      | FCC          |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 1       | 37        | Side 1                 | 0       | 0.082             | 22.72                 | 24                | 0.110                      | FCC          |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 36      | 19        | Side 1                 | 0       | 0.076             | 21.81                 | 23                | 0.100                      | FCC          |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 1       | 37        | Side 2                 | 0       | 0.632             | 22.72                 | 24                | 0.849                      | FCC          |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 36      | 19        | Side 2                 | 0       | 0.591             | 21.81                 | 23                | 0.777                      | FCC          |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 1       | 37        | Side 3                 | 0       | 0.063             | 22.72                 | 24                | 0.085                      | FCC          |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 36      | 19        | Side 3                 | 0       | 0.059             | 21.81                 | 23                | 0.078                      | FCC          |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 1       | 37        | Side 4                 | 0       | 0.071             | 22.72                 | 24                | 0.095                      | FCC          |
|        | LTE Band 26 | 26865     | 831.5 | 15M       | QPSK       | 36      | 19        | Side 4                 | 0       | 0.066             | 21.81                 | 23                | 0.087                      | FCC          |
| #27    | LTE Band 5  | 20525     | 836.5 | 10M       | QPSK       | 1       | 0         | Bottom of laptop       | 0       | 0.933             | 20.20                 | 21                | 1.122                      | Power Reduce |
|        |             |           |       |           |            |         |           |                        |         |                   |                       |                   |                            |              |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 1       | 0         | Bottom of laptop       | 0       | 0.816             | 19.44                 | 20                | 0.928                      | Power Reduce |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 25      | 12        | Bottom of laptop       | 0       | 0.692             | 18.41                 | 19                | 0.793                      | Power Reduce |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 50      | 0         | Bottom of laptop       | 0       | 0.708             | 18.53                 | 19                | 0.789                      | Power Reduce |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 1       | 0         | Bottom of laptop       | 14      | 0.186             | 22.87                 | 24                | 0.241                      |              |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 25      | 12        | Bottom of laptop       | 14      | 0.144             | 21.92                 | 23                | 0.185                      |              |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 1       | 0         | Back of display screen | 25      | 0.01              | 22.87                 | 24                | 0.013                      |              |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 25      | 12        | Back of display screen | 25      | 0.01              | 21.92                 | 23                | 0.013                      |              |
| #31    | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 1       | 0         | Bottom Face            | 0       | 0.911             | 19.44                 | 20                | 1.036                      | Power Reduce |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 25      | 12        | Bottom Face            | 0       | 0.812             | 18.41                 | 19                | 0.930                      | Power Reduce |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 50      | 0         | Bottom Face            | 0       | 0.824             | 18.53                 | 19                | 0.918                      | Power Reduce |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 1       | 0         | Bottom Face            | 14      | 0.203             | 22.87                 | 24                | 0.263                      |              |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 25      | 12        | Bottom Face            | 14      | 0.158             | 21.92                 | 23                | 0.203                      |              |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 1       | 0         | Side 1                 | 0       | 0.052             | 22.87                 | 24                | 0.067                      |              |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 25      | 12        | Side 1                 | 0       | 0.047             | 21.92                 | 23                | 0.060                      |              |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 1       | 0         | Side 2                 | 0       | 0.645             | 22.87                 | 24                | 0.837                      |              |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 25      | 12        | Side 2                 | 0       | 0.578             | 21.92                 | 23                | 0.741                      |              |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 1       | 0         | Side 3                 | 0       | 0.033             | 22.87                 | 24                | 0.043                      |              |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 25      | 12        | Side 3                 | 0       | 0.031             | 21.92                 | 23                | 0.040                      |              |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 1       | 0         | Side 4                 | 0       | 0.043             | 22.87                 | 24                | 0.056                      |              |
|        | LTE Band 30 | 27710     | 2310  | 10M       | QPSK       | 25      | 12        | Side 4                 | 0       | 0.041             | 21.92                 | 23                | 0.053                      |              |



| Index. | Band        | Frequency |        | Bandwidth | Modulation | RB Size | RB Offset | Test Position          | Spacing | SAR <sub>1g</sub> | Burst Avg Power (dBm) | Max tune-up (dBm) | Reported SAR <sub>1g</sub> | Note         |
|--------|-------------|-----------|--------|-----------|------------|---------|-----------|------------------------|---------|-------------------|-----------------------|-------------------|----------------------------|--------------|
|        |             | Ch.       | MHz    |           |            |         |           |                        | (mm)    | (W/Kg)            |                       |                   |                            |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 1       | 0         | Bottom of laptop       | 0       | 0.661             | 20.47                 | 20.5              | 0.670                      | Power Reduce |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 50      | 50        | Bottom of laptop       | 0       | 0.751             | 19.78                 | 20                | 0.795                      | Power Reduce |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 1       | 0         | Bottom of laptop       | 14      | 0.158             | 22.81                 | 24                | 0.209                      |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 50      | 50        | Bottom of laptop       | 14      | 0.12              | 21.72                 | 23                | 0.162                      |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 1       | 0         | Back of display screen | 25      | 0.01              | 22.81                 | 24                | 0.013                      |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 50      | 50        | Back of display screen | 25      | 0.01              | 21.72                 | 23                | 0.014                      |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 1       | 0         | Bottom Face            | 0       | 0.973             | 20.47                 | 20.5              | 0.986                      | Power Reduce |
|        | LTE Band 41 | 39750     | 2506   | 20M       | QPSK       | 1       | 0         | Bottom Face            | 0       | 0.864             | 20.18                 | 20.5              | 0.936                      | Power Reduce |
| #32    | LTE Band 41 | 40185     | 2549.5 | 20M       | QPSK       | 1       | 0         | Bottom Face            | 0       | 1.12              | 20.46                 | 20.5              | 1.138                      | Power Reduce |
|        | LTE Band 41 | 40620     | 2593   | 20M       | QPSK       | 1       | 0         | Bottom Face            | 0       | 0.935             | 20.29                 | 20.5              | 0.988                      | Power Reduce |
|        | LTE Band 41 | 41490     | 2680   | 20M       | QPSK       | 1       | 0         | Bottom Face            | 0       | 0.742             | 20.33                 | 20.5              | 0.777                      | Power Reduce |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 50      | 50        | Bottom Face            | 0       | 0.774             | 19.78                 | 20                | 0.819                      | Power Reduce |
|        | LTE Band 41 | 39750     | 2506   | 20M       | QPSK       | 50      | 50        | Bottom Face            | 0       | 0.743             | 19.22                 | 20                | 0.895                      | Power Reduce |
|        | LTE Band 41 | 40185     | 2549.5 | 20M       | QPSK       | 50      | 50        | Bottom Face            | 0       | 0.772             | 19.57                 | 20                | 0.858                      | Power Reduce |
|        | LTE Band 41 | 40620     | 2593   | 20M       | QPSK       | 50      | 50        | Bottom Face            | 0       | 0.737             | 19.38                 | 20                | 0.856                      | Power Reduce |
|        | LTE Band 41 | 41490     | 2680   | 20M       | QPSK       | 50      | 50        | Bottom Face            | 0       | 0.543             | 19.73                 | 20                | 0.582                      | Power Reduce |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 100     | 0         | Bottom Face            | 0       | 0.702             | 19.77                 | 20                | 0.745                      | Power Reduce |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 1       | 0         | Bottom Face            | 14      | 0.232             | 22.81                 | 24                | 0.307                      |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 50      | 50        | Bottom Face            | 14      | 0.193             | 21.72                 | 23                | 0.261                      |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 1       | 0         | Side 1                 | 0       | 0.095             | 22.81                 | 24                | 0.126                      |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 50      | 50        | Side 1                 | 0       | 0.081             | 21.72                 | 23                | 0.109                      |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 1       | 0         | Side 2                 | 0       | 0.702             | 20.47                 | 20.5              | 0.711                      | Power Reduce |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 50      | 50        | Side 2                 | 0       | 0.732             | 19.78                 | 20                | 0.775                      | Power Reduce |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 1       | 0         | Side 2                 | 14      | 0.079             | 22.81                 | 24                | 0.105                      |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 50      | 50        | Side 2                 | 14      | 0.068             | 21.72                 | 23                | 0.092                      |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 1       | 0         | Side 3                 | 0       | 0.047             | 22.81                 | 24                | 0.062                      |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 50      | 50        | Side 3                 | 0       | 0.042             | 21.72                 | 23                | 0.057                      |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 1       | 0         | Side 4                 | 0       | 0.089             | 22.81                 | 24                | 0.118                      |              |
|        | LTE Band 41 | 41055     | 2636.5 | 20M       | QPSK       | 50      | 50        | Side 4                 | 0       | 0.081             | 21.72                 | 23                | 0.109                      |              |
| #33    | LTE Band 38 | 38150     | 2610   | 20M       | QPSK       | 1       | 99        | Bottom Face            | 0       | 1                 | 20.47                 | 20.5              | 1.013                      | Power Reduce |



| Index. | Band        | Frequency |        | Bandwidth | Modulation | RB Size | RB Offset | Test Position          | Spacing | SAR <sub>1g</sub> | Burst Avg Power (dBm) | Max tune-up (dBm) | Reported SAR <sub>1g</sub> | Note         |
|--------|-------------|-----------|--------|-----------|------------|---------|-----------|------------------------|---------|-------------------|-----------------------|-------------------|----------------------------|--------------|
|        |             | Ch.       | MHz    |           |            |         |           |                        | (mm)    | (W/Kg)            |                       |                   |                            |              |
| #28    | LTE Band 66 | 132072    | 1720   | 20M       | QPSK       | 1       | 99        | Bottom of laptop       | 0       | 1.06              | 18.31                 | 18.5              | 1.107                      | Power Reduce |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 1       | 99        | Bottom of laptop       | 0       | 0.968             | 18.29                 | 18.5              | 1.016                      | Power Reduce |
|        | LTE Band 66 | 132572    | 1770   | 20M       | QPSK       | 1       | 99        | Bottom of laptop       | 0       | 0.91              | 18.15                 | 18.5              | 0.986                      | Power Reduce |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 50      | 50        | Bottom of laptop       | 0       | 0.827             | 17.37                 | 17.5              | 0.852                      | Power Reduce |
|        | LTE Band 66 | 132072    | 1720   | 20M       | QPSK       | 50      | 50        | Bottom of laptop       | 0       | 0.807             | 17.14                 | 17.5              | 0.877                      | Power Reduce |
|        | LTE Band 66 | 132572    | 1770   | 20M       | QPSK       | 50      | 50        | Bottom of laptop       | 0       | 0.813             | 17.29                 | 17.5              | 0.853                      | Power Reduce |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 100     | 0         | Bottom of laptop       | 0       | 0.818             | 17.37                 | 17.5              | 0.843                      | Power Reduce |
|        | LTE Band 66 | 132072    | 1720   | 20M       | QPSK       | 1       | 99        | Bottom of laptop       | 14      | 0.715             | 23.14                 | 24                | 0.872                      |              |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 50      | 50        | Bottom of laptop       | 14      | 0.549             | 22.21                 | 23                | 0.659                      |              |
|        | LTE Band 66 | 132072    | 1720   | 20M       | QPSK       | 1       | 99        | Back of display screen | 25      | 0.01              | 23.14                 | 24                | 0.012                      |              |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 50      | 50        | Back of display screen | 25      | 0.01              | 22.21                 | 23                | 0.012                      |              |
|        | LTE Band 66 | 132072    | 1720   | 20M       | QPSK       | 1       | 99        | Bottom Face            | 0       | 1.017             | 18.31                 | 18.5              | 1.062                      | Power Reduce |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 1       | 99        | Bottom Face            | 0       | 0.927             | 18.29                 | 18.5              | 0.973                      | Power Reduce |
|        | LTE Band 66 | 132572    | 1770   | 20M       | QPSK       | 1       | 99        | Bottom Face            | 0       | 0.893             | 18.15                 | 18.5              | 0.968                      | Power Reduce |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 50      | 50        | Bottom Face            | 0       | 0.828             | 17.37                 | 17.5              | 0.853                      | Power Reduce |
|        | LTE Band 66 | 132072    | 1720   | 20M       | QPSK       | 50      | 50        | Bottom Face            | 0       | 0.767             | 17.14                 | 17.5              | 0.833                      | Power Reduce |
|        | LTE Band 66 | 132572    | 1770   | 20M       | QPSK       | 50      | 50        | Bottom Face            | 0       | 0.788             | 17.29                 | 17.5              | 0.827                      | Power Reduce |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 100     | 0         | Bottom Face            | 0       | 0.808             | 17.37                 | 17.5              | 0.833                      | Power Reduce |
|        | LTE Band 66 | 132072    | 1720   | 20M       | QPSK       | 1       | 99        | Bottom Face            | 14      | 0.61              | 23.14                 | 24                | 0.744                      |              |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 50      | 50        | Bottom Face            | 14      | 0.488             | 22.21                 | 23                | 0.585                      |              |
|        | LTE Band 66 | 132072    | 1720   | 20M       | QPSK       | 1       | 99        | Side 1                 | 0       | 0.068             | 23.14                 | 24                | 0.083                      |              |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 50      | 50        | Side 1                 | 0       | 0.061             | 22.21                 | 23                | 0.073                      |              |
|        | LTE Band 66 | 132072    | 1720   | 20M       | QPSK       | 1       | 99        | Side 2                 | 0       | 0.873             | 18.31                 | 18.5              | 0.912                      | Power Reduce |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 1       | 99        | Side 2                 | 0       | 0.862             | 18.29                 | 18.5              | 0.905                      | Power Reduce |
|        | LTE Band 66 | 132572    | 1770   | 20M       | QPSK       | 1       | 99        | Side 2                 | 0       | 0.826             | 18.15                 | 18.5              | 0.895                      | Power Reduce |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 50      | 50        | Side 2                 | 0       | 0.701             | 17.37                 | 17.5              | 0.722                      | Power Reduce |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 100     | 0         | Side 2                 | 0       | 0.726             | 17.37                 | 17.5              | 0.748                      | Power Reduce |
|        | LTE Band 66 | 132072    | 1720   | 20M       | QPSK       | 1       | 99        | Side 2                 | 14      | 0.369             | 23.14                 | 24                | 0.450                      |              |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 50      | 50        | Side 2                 | 14      | 0.31              | 22.21                 | 23                | 0.372                      |              |
|        | LTE Band 66 | 132072    | 1720   | 20M       | QPSK       | 1       | 99        | Side 3                 | 0       | 0.051             | 23.14                 | 24                | 0.062                      |              |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 50      | 50        | Side 3                 | 0       | 0.047             | 22.21                 | 23                | 0.056                      |              |
|        | LTE Band 66 | 132072    | 1720   | 20M       | QPSK       | 1       | 99        | Side 4                 | 0       | 0.049             | 23.14                 | 24                | 0.060                      |              |
|        | LTE Band 66 | 132322    | 1745   | 20M       | QPSK       | 50      | 50        | Side 4                 | 0       | 0.042             | 22.21                 | 23                | 0.050                      |              |
| #29    | LTE Band 4  | 20175     | 1732.5 | 20M       | QPSK       | 1       | 0         | Bottom of laptop       | 0       | 0.835             | 18.06                 | 18.5              | 0.924                      | Power Reduce |

## 11.8 Simultaneous Transmission Evaluation

### 11.8.1 Simultaneous Transmission Configurations

| Condition(s) | Band |                         |                        |                       |                      |           |
|--------------|------|-------------------------|------------------------|-----------------------|----------------------|-----------|
|              | WWAN | WLAN 2.4GHz<br>Ant Main | WLAN 2.4GHz<br>Ant Aux | WLAN 5GHz<br>Ant Main | WLAN 5GHz<br>Ant Aux | Bluetooth |
| 1            | V    | V                       | -                      | -                     | -                    | -         |
| 2            | V    | -                       | V                      | -                     | -                    | -         |
| 3            | V    | V                       | V                      | -                     | -                    | -         |
| 4            | V    | V                       | -                      | -                     | -                    | V         |
| 5            | V    | -                       | -                      | V                     | -                    | -         |
| 6            | V    | -                       | -                      | -                     | V                    | -         |
| 7            | V    | -                       | -                      | V                     | -                    | V         |
| 8            | V    | -                       | -                      | V                     | V                    | -         |
| 9            | V    | -                       | -                      | V                     | V                    | V         |

### 11.8.2 Simultaneous Transmission Result

When the sum of 1-g SAR of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration.

Sum of 1-g SAR of summary is shown as below:

| WWAN Band |               | Exposure Position    | 1             | 2                    | 3                   | 4                  | 5                 | 6                       | 1+2 $\Sigma$ 1g SAR (W/kg) | 1+3 $\Sigma$ 1g SAR (W/kg) | 1+2+3 $\Sigma$ 1g SAR (W/kg) | 1+2+6 $\Sigma$ 1g SAR (W/kg) | 1+4 $\Sigma$ 1g SAR (W/kg) | 1+5 $\Sigma$ 1g SAR (W/kg) | 1+4+6 $\Sigma$ 1g SAR (W/kg) | 1+4+5 $\Sigma$ 1g SAR (W/kg) | 1+4+5+6 $\Sigma$ 1g SAR (W/kg) |
|-----------|---------------|----------------------|---------------|----------------------|---------------------|--------------------|-------------------|-------------------------|----------------------------|----------------------------|------------------------------|------------------------------|----------------------------|----------------------------|------------------------------|------------------------------|--------------------------------|
|           |               |                      | WWAN          | WLAN 2.4GHz Ant Main | WLAN 2.4GHz Ant Aux | WLAN 5GHz Ant Main | WLAN 5GHz Ant Aux | Bluetooth Ant Aux       |                            |                            |                              |                              |                            |                            |                              |                              |                                |
|           |               |                      | 1g SAR (W/kg) | 1g SAR (W/kg)        | 1g SAR (W/kg)       | 1g SAR (W/kg)      | 1g SAR (W/kg)     | Estimated 1g SAR (W/kg) |                            |                            |                              |                              |                            |                            |                              |                              |                                |
| WCDMA     | WCDMA Band II | Bottom Face at 0mm - | 1.001         | 0.358                | 0.222               | 0.407              | 0.358             | 0.071                   | 1.359                      | 1.223                      | 1.581                        | 1.430                        | 1.408                      | 1.359                      | 1.479                        | 1.766                        | 1.837                          |
|           |               | side 1 at 0mm -      | 0.013         | 0.419                | 0.357               | 0.581              | 0.629             | 0.093                   | 0.432                      | 0.370                      | 0.789                        | 0.525                        | 0.594                      | 0.642                      | 0.687                        | 1.223                        | 1.316                          |
|           |               | side 2 at 0mm -      | 0.661         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 0.671                      | 0.671                      | 0.681                        | 0.686                        | 0.672                      | 0.672                      | 0.687                        | 0.683                        | 0.698                          |
|           |               | side 3 at 0mm -      | 0.013         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 0.023                      | 0.023                      | 0.033                        | 0.038                        | 0.024                      | 0.024                      | 0.039                        | 0.035                        | 0.050                          |
|           |               | side 4 at 0mm -      | 0.013         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 0.023                      | 0.023                      | 0.033                        | 0.038                        | 0.024                      | 0.024                      | 0.039                        | 0.035                        | 0.050                          |
|           | WCDMA Band IV | Bottom Face at 0mm - | 1.080         | 0.358                | 0.222               | 0.407              | 0.358             | 0.071                   | 1.438                      | 1.302                      | 1.660                        | 1.509                        | 1.487                      | 1.438                      | 1.558                        | 1.845                        | 1.916                          |
|           |               | side 1 at 0mm -      | 0.012         | 0.419                | 0.357               | 0.581              | 0.629             | 0.093                   | 0.431                      | 0.369                      | 0.788                        | 0.524                        | 0.593                      | 0.641                      | 0.686                        | 1.222                        | 1.315                          |
|           |               | side 2 at 0mm -      | 0.987         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 0.997                      | 0.997                      | 1.007                        | 1.012                        | 0.998                      | 0.998                      | 1.013                        | 1.009                        | 1.024                          |
|           |               | side 3 at 0mm -      | 0.012         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 0.022                      | 0.022                      | 0.032                        | 0.037                        | 0.023                      | 0.023                      | 0.038                        | 0.034                        | 0.049                          |
|           |               | side 4 at 0mm -      | 0.012         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 0.022                      | 0.022                      | 0.032                        | 0.037                        | 0.023                      | 0.023                      | 0.038                        | 0.034                        | 0.049                          |

| WWAN Band |                   | Exposure Position       | 1                | 2                          | 3                         | 4                        | 5                       | 6                             | 1+2 ∑<br>1g SAR<br>(W/kg) | 1+3 ∑<br>1g SAR<br>(W/kg) | 1+2+3 ∑<br>1g SAR<br>(W/kg) | 1+2+6 ∑<br>1g SAR<br>(W/kg) | 1+4 ∑<br>1g SAR<br>(W/kg) | 1+5 ∑<br>1g SAR<br>(W/kg) | 1+4+6 ∑<br>1g SAR<br>(W/kg) | 1+4+5 ∑<br>1g SAR<br>(W/kg) | 1+4+5+6<br>∑ 1g<br>SAR<br>(W/kg) |
|-----------|-------------------|-------------------------|------------------|----------------------------|---------------------------|--------------------------|-------------------------|-------------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|----------------------------------|
|           |                   |                         | WWAN             | WLAN<br>2.4GHz<br>Ant Main | WLAN<br>2.4GHz<br>Ant Aux | WLAN<br>5GHz<br>Ant Main | WLAN<br>5GHz<br>Ant Aux | Bluetooth<br>Ant Aux          |                           |                           |                             |                             |                           |                           |                             |                             |                                  |
|           |                   |                         | 1g SAR<br>(W/kg) | 1g SAR<br>(W/kg)           | 1g SAR<br>(W/kg)          | 1g SAR<br>(W/kg)         | 1g SAR<br>(W/kg)        | Estimated<br>1g SAR<br>(W/kg) |                           |                           |                             |                             |                           |                           |                             |                             |                                  |
| WCDMA     | WCDMA<br>Band V   | Bottom Face<br>at 0mm - | 0.569            | 0.358                      | 0.222                     | 0.407                    | 0.358                   | 0.071                         | 0.927                     | 0.791                     | 1.149                       | 0.998                       | 0.976                     | 0.927                     | 1.047                       | 1.334                       | 1.405                            |
|           |                   | side 1 at 0mm<br>-      | 0.012            | 0.419                      | 0.357                     | 0.581                    | 0.629                   | 0.093                         | 0.431                     | 0.369                     | 0.788                       | 0.524                       | 0.593                     | 0.641                     | 0.686                       | 1.222                       | 1.315                            |
|           |                   | side 2 at 0mm<br>-      | 0.478            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.488                     | 0.488                     | 0.498                       | 0.503                       | 0.489                     | 0.489                     | 0.504                       | 0.500                       | 0.515                            |
|           |                   | side 3 at 0mm<br>-      | 0.012            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.022                     | 0.022                     | 0.032                       | 0.037                       | 0.023                     | 0.023                     | 0.038                       | 0.034                       | 0.049                            |
|           |                   | side 4 at 0mm<br>-      | 0.012            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.022                     | 0.022                     | 0.032                       | 0.037                       | 0.023                     | 0.023                     | 0.038                       | 0.034                       | 0.049                            |
| LTE       | LTE<br>Band 2     | Bottom Face<br>at 0mm - | 0.916            | 0.358                      | 0.222                     | 0.407                    | 0.358                   | 0.071                         | 1.274                     | 1.138                     | 1.496                       | 1.345                       | 1.323                     | 1.274                     | 1.394                       | 1.681                       | 1.752                            |
|           |                   | side 1 at 0mm<br>-      | 0.080            | 0.419                      | 0.357                     | 0.581                    | 0.629                   | 0.093                         | 0.499                     | 0.437                     | 0.856                       | 0.592                       | 0.661                     | 0.709                     | 0.754                       | 1.290                       | 1.383                            |
|           |                   | side 2 at 0mm<br>-      | 0.701            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.711                     | 0.711                     | 0.721                       | 0.726                       | 0.712                     | 0.712                     | 0.727                       | 0.723                       | 0.738                            |
|           |                   | side 3 at 0mm<br>-      | 0.106            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.116                     | 0.116                     | 0.126                       | 0.131                       | 0.117                     | 0.117                     | 0.132                       | 0.128                       | 0.143                            |
|           |                   | side 4 at 0mm<br>-      | 0.092            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.102                     | 0.102                     | 0.112                       | 0.117                       | 0.103                     | 0.103                     | 0.118                       | 0.114                       | 0.129                            |
|           | LTE<br>Band 7     | Bottom Face<br>at 0mm - | 1.017            | 0.358                      | 0.222                     | 0.407                    | 0.358                   | 0.071                         | 1.375                     | 1.239                     | 1.597                       | 1.446                       | 1.424                     | 1.375                     | 1.495                       | 1.782                       | 1.853                            |
|           |                   | side 1 at 0mm<br>-      | 0.105            | 0.419                      | 0.357                     | 0.581                    | 0.629                   | 0.093                         | 0.524                     | 0.462                     | 0.881                       | 0.617                       | 0.686                     | 0.734                     | 0.779                       | 1.315                       | 1.408                            |
|           |                   | side 2 at 0mm<br>-      | 0.417            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.427                     | 0.427                     | 0.437                       | 0.442                       | 0.428                     | 0.428                     | 0.443                       | 0.439                       | 0.454                            |
|           |                   | side 3 at 0mm<br>-      | 0.129            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.139                     | 0.139                     | 0.149                       | 0.154                       | 0.140                     | 0.140                     | 0.155                       | 0.151                       | 0.166                            |
|           |                   | side 4 at 0mm<br>-      | 0.116            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.126                     | 0.126                     | 0.136                       | 0.141                       | 0.127                     | 0.127                     | 0.142                       | 0.138                       | 0.153                            |
|           | LTE<br>Band 12/17 | Bottom Face<br>at 0mm - | 1.125            | 0.358                      | 0.222                     | 0.407                    | 0.358                   | 0.071                         | 1.483                     | 1.347                     | 1.705                       | 1.554                       | 1.532                     | 1.483                     | 1.603                       | 1.890                       | 1.961                            |
|           |                   | side 1 at 0mm<br>-      | 0.093            | 0.419                      | 0.357                     | 0.581                    | 0.629                   | 0.093                         | 0.512                     | 0.450                     | 0.869                       | 0.605                       | 0.674                     | 0.722                     | 0.767                       | 1.303                       | 1.396                            |
|           |                   | side 2 at 0mm<br>-      | 0.487            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.497                     | 0.497                     | 0.507                       | 0.512                       | 0.498                     | 0.498                     | 0.513                       | 0.509                       | 0.524                            |
|           |                   | side 3 at 0mm<br>-      | 0.057            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.067                     | 0.067                     | 0.077                       | 0.082                       | 0.068                     | 0.068                     | 0.083                       | 0.079                       | 0.094                            |
|           |                   | side 4 at 0mm<br>-      | 0.086            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.096                     | 0.096                     | 0.106                       | 0.111                       | 0.097                     | 0.097                     | 0.112                       | 0.108                       | 0.123                            |
|           | LTE<br>Band 13    | Bottom Face<br>at 0mm - | 0.857            | 0.358                      | 0.222                     | 0.407                    | 0.358                   | 0.071                         | 1.215                     | 1.079                     | 1.437                       | 1.286                       | 1.264                     | 1.215                     | 1.335                       | 1.622                       | 1.693                            |
|           |                   | side 1 at 0mm<br>-      | 0.082            | 0.419                      | 0.357                     | 0.581                    | 0.629                   | 0.093                         | 0.501                     | 0.439                     | 0.858                       | 0.594                       | 0.663                     | 0.711                     | 0.756                       | 1.292                       | 1.385                            |
|           |                   | side 2 at 0mm<br>-      | 0.380            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.390                     | 0.390                     | 0.400                       | 0.405                       | 0.391                     | 0.391                     | 0.406                       | 0.402                       | 0.417                            |
|           |                   | side 3 at 0mm<br>-      | 0.069            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.079                     | 0.079                     | 0.089                       | 0.094                       | 0.080                     | 0.080                     | 0.095                       | 0.091                       | 0.106                            |
|           |                   | side 4 at 0mm<br>-      | 0.086            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.096                     | 0.096                     | 0.106                       | 0.111                       | 0.097                     | 0.097                     | 0.112                       | 0.108                       | 0.123                            |
|           | LTE<br>Band 26/5  | Bottom Face<br>at 0mm - | 1.003            | 0.358                      | 0.222                     | 0.407                    | 0.358                   | 0.071                         | 1.361                     | 1.225                     | 1.583                       | 1.432                       | 1.410                     | 1.361                     | 1.481                       | 1.768                       | 1.839                            |
|           |                   | side 1 at 0mm<br>-      | 0.110            | 0.419                      | 0.357                     | 0.581                    | 0.629                   | 0.093                         | 0.529                     | 0.467                     | 0.886                       | 0.622                       | 0.691                     | 0.739                     | 0.784                       | 1.320                       | 1.413                            |
|           |                   | side 2 at 0mm<br>-      | 0.849            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.859                     | 0.859                     | 0.869                       | 0.874                       | 0.860                     | 0.860                     | 0.875                       | 0.871                       | 0.886                            |
|           |                   | side 3 at 0mm<br>-      | 0.085            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.095                     | 0.095                     | 0.105                       | 0.110                       | 0.096                     | 0.096                     | 0.111                       | 0.107                       | 0.122                            |
|           |                   | side 4 at 0mm<br>-      | 0.095            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.105                     | 0.105                     | 0.115                       | 0.120                       | 0.106                     | 0.106                     | 0.121                       | 0.117                       | 0.132                            |



| WWAN Band |                      | Exposure Position       | 1                | 2                          | 3                         | 4                        | 5                       | 6                             | 1+2 $\sum$<br>1g SAR<br>(W/kg) | 1+3 $\sum$<br>1g SAR<br>(W/kg) | 1+2+3 $\sum$<br>1g SAR<br>(W/kg) | 1+2+6 $\sum$<br>1g SAR<br>(W/kg) | 1+4 $\sum$<br>1g SAR<br>(W/kg) | 1+5 $\sum$<br>1g SAR<br>(W/kg) | 1+4+6 $\sum$<br>1g SAR<br>(W/kg) | 1+4+5 $\sum$<br>1g SAR<br>(W/kg) | 1+4+5+6 $\sum$<br>1g SAR<br>(W/kg) |
|-----------|----------------------|-------------------------|------------------|----------------------------|---------------------------|--------------------------|-------------------------|-------------------------------|--------------------------------|--------------------------------|----------------------------------|----------------------------------|--------------------------------|--------------------------------|----------------------------------|----------------------------------|------------------------------------|
|           |                      |                         | WWAN             | WLAN<br>2.4GHz<br>Ant Main | WLAN<br>2.4GHz<br>Ant Aux | WLAN<br>5GHz<br>Ant Main | WLAN<br>5GHz<br>Ant Aux | Bluetooth<br>Ant Aux          |                                |                                |                                  |                                  |                                |                                |                                  |                                  |                                    |
|           |                      |                         | 1g SAR<br>(W/kg) | 1g SAR<br>(W/kg)           | 1g SAR<br>(W/kg)          | 1g SAR<br>(W/kg)         | 1g SAR<br>(W/kg)        | Estimated<br>1g SAR<br>(W/kg) |                                |                                |                                  |                                  |                                |                                |                                  |                                  |                                    |
| LTE       | LTE<br>Band<br>30    | Bottom Face<br>at 0mm - | 1.036            | 0.358                      | 0.222                     | 0.407                    | 0.358                   | 0.071                         | 1.394                          | 1.258                          | 1.616                            | 1.465                            | 1.443                          | 1.394                          | 1.514                            | 1.801                            | 1.872                              |
|           |                      | side 1 at 0mm -         | 0.067            | 0.419                      | 0.357                     | 0.581                    | 0.629                   | 0.093                         | 0.486                          | 0.424                          | 0.843                            | 0.579                            | 0.648                          | 0.696                          | 0.741                            | 1.277                            | 1.370                              |
|           |                      | side 2 at 0mm -         | 0.837            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.847                          | 0.847                          | 0.857                            | 0.862                            | 0.848                          | 0.848                          | 0.863                            | 0.859                            | 0.874                              |
|           |                      | side 3 at 0mm -         | 0.043            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.053                          | 0.053                          | 0.063                            | 0.068                            | 0.054                          | 0.054                          | 0.069                            | 0.065                            | 0.080                              |
|           |                      | side 4 at 0mm -         | 0.056            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.066                          | 0.066                          | 0.076                            | 0.081                            | 0.067                          | 0.067                          | 0.082                            | 0.078                            | 0.093                              |
|           | LTE<br>Band<br>41/38 | Bottom Face<br>at 0mm - | 1.138            | 0.358                      | 0.222                     | 0.407                    | 0.358                   | 0.071                         | 1.496                          | 1.360                          | 1.718                            | 1.567                            | 1.545                          | 1.496                          | 1.616                            | 1.903                            | 1.974                              |
|           |                      | side 1 at 0mm -         | 0.126            | 0.419                      | 0.357                     | 0.581                    | 0.629                   | 0.093                         | 0.545                          | 0.483                          | 0.902                            | 0.638                            | 0.707                          | 0.755                          | 0.800                            | 1.336                            | 1.429                              |
|           |                      | side 2 at 0mm -         | 0.775            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.785                          | 0.785                          | 0.795                            | 0.800                            | 0.786                          | 0.786                          | 0.801                            | 0.797                            | 0.812                              |
|           |                      | side 3 at 0mm -         | 0.062            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.072                          | 0.072                          | 0.082                            | 0.087                            | 0.073                          | 0.073                          | 0.088                            | 0.084                            | 0.099                              |
|           |                      | side 4 at 0mm -         | 0.118            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.128                          | 0.128                          | 0.138                            | 0.143                            | 0.129                          | 0.129                          | 0.144                            | 0.140                            | 0.155                              |
|           | LTE<br>Band<br>66/4  | Bottom Face<br>at 0mm - | 1.062            | 0.358                      | 0.222                     | 0.407                    | 0.358                   | 0.071                         | 1.420                          | 1.284                          | 1.642                            | 1.491                            | 1.469                          | 1.420                          | 1.540                            | 1.827                            | 1.898                              |
|           |                      | side 1 at 0mm -         | 0.083            | 0.419                      | 0.357                     | 0.581                    | 0.629                   | 0.093                         | 0.502                          | 0.440                          | 0.859                            | 0.595                            | 0.664                          | 0.712                          | 0.757                            | 1.293                            | 1.386                              |
|           |                      | side 2 at 0mm -         | 0.912            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.922                          | 0.922                          | 0.932                            | 0.937                            | 0.923                          | 0.923                          | 0.938                            | 0.934                            | 0.949                              |
|           |                      | side 3 at 0mm -         | 0.062            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.072                          | 0.072                          | 0.082                            | 0.087                            | 0.073                          | 0.073                          | 0.088                            | 0.084                            | 0.099                              |
|           |                      | side 4 at 0mm -         | 0.060            | 0.010                      | 0.010                     | 0.011                    | 0.011                   | 0.015                         | 0.070                          | 0.070                          | 0.080                            | 0.085                            | 0.071                          | 0.071                          | 0.086                            | 0.082                            | 0.097                              |



| WWAN Band |                | Exposure Position                | 1             | 2                    | 3                   | 4                  | 5                 | 6                       | 1+2 $\Sigma$ 1g SAR (W/kg) | 1+3 $\Sigma$ 1g SAR (W/kg) | 1+2+3 $\Sigma$ 1g SAR (W/kg) | 1+2+6 $\Sigma$ 1g SAR (W/kg) | 1+4 $\Sigma$ 1g SAR (W/kg) | 1+5 $\Sigma$ 1g SAR (W/kg) | 1+4+6 $\Sigma$ 1g SAR (W/kg) | 1+4+5 $\Sigma$ 1g SAR (W/kg) | 1+4+5+6 $\Sigma$ 1g SAR (W/kg) |
|-----------|----------------|----------------------------------|---------------|----------------------|---------------------|--------------------|-------------------|-------------------------|----------------------------|----------------------------|------------------------------|------------------------------|----------------------------|----------------------------|------------------------------|------------------------------|--------------------------------|
|           |                |                                  | WWAN          | WLAN 2.4GHz Ant Main | WLAN 2.4GHz Ant Aux | WLAN 5GHz Ant Main | WLAN 5GHz Ant Aux | Bluetooth Ant Aux       |                            |                            |                              |                              |                            |                            |                              |                              |                                |
|           |                |                                  | 1g SAR (W/kg) | 1g SAR (W/kg)        | 1g SAR (W/kg)       | 1g SAR (W/kg)      | 1g SAR (W/kg)     | Estimated 1g SAR (W/kg) |                            |                            |                              |                              |                            |                            |                              |                              |                                |
| WCDMA     | WCDMA Band II  | Bottom of laptop at 0mm -        | 0.997         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 1.007                      | 1.007                      | 1.017                        | 1.022                        | 1.008                      | 1.008                      | 1.023                        | 1.019                        | 1.034                          |
|           |                | Back of display screen at 25mm - | 0.013         | 0.131                | 0.083               | 0.167              | 0.152             | 0.047                   | 0.144                      | 0.096                      | 0.227                        | 0.191                        | 0.180                      | 0.165                      | 0.227                        | 0.332                        | 0.379                          |
|           | WCDMA Band IV  | Bottom of laptop at 0mm -        | 1.015         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 1.025                      | 1.025                      | 1.035                        | 1.040                        | 1.026                      | 1.026                      | 1.041                        | 1.037                        | 1.052                          |
|           |                | Back of display screen at 25mm - | 0.012         | 0.131                | 0.083               | 0.167              | 0.152             | 0.047                   | 0.143                      | 0.095                      | 0.226                        | 0.190                        | 0.179                      | 0.164                      | 0.226                        | 0.331                        | 0.378                          |
|           | WCDMA Band V   | Bottom of laptop at 0mm -        | 0.775         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 0.785                      | 0.785                      | 0.795                        | 0.800                        | 0.786                      | 0.786                      | 0.801                        | 0.797                        | 0.812                          |
|           |                | Back of display screen at 25mm - | 0.012         | 0.131                | 0.083               | 0.167              | 0.152             | 0.047                   | 0.143                      | 0.095                      | 0.226                        | 0.190                        | 0.179                      | 0.164                      | 0.226                        | 0.331                        | 0.378                          |
| LTE       | LTE Band 2     | Bottom of laptop at 0mm -        | 1.128         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 1.138                      | 1.138                      | 1.148                        | 1.153                        | 1.139                      | 1.139                      | 1.154                        | 1.150                        | 1.165                          |
|           |                | Back of display screen at 25mm - | 0.014         | 0.131                | 0.083               | 0.167              | 0.152             | 0.047                   | 0.145                      | 0.097                      | 0.228                        | 0.192                        | 0.181                      | 0.166                      | 0.228                        | 0.333                        | 0.380                          |
|           | LTE Band 7     | Bottom of laptop at 0mm -        | 0.659         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 0.669                      | 0.669                      | 0.679                        | 0.684                        | 0.670                      | 0.670                      | 0.685                        | 0.681                        | 0.696                          |
|           |                | Back of display screen at 25mm - | 0.013         | 0.131                | 0.083               | 0.167              | 0.152             | 0.047                   | 0.144                      | 0.096                      | 0.227                        | 0.191                        | 0.180                      | 0.165                      | 0.227                        | 0.332                        | 0.379                          |
|           | LTE Band 12/17 | Bottom of laptop at 0mm -        | 1.148         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 1.158                      | 1.158                      | 1.168                        | 1.173                        | 1.159                      | 1.159                      | 1.174                        | 1.170                        | 1.185                          |
|           |                | Back of display screen at 25mm - | 0.013         | 0.131                | 0.083               | 0.167              | 0.152             | 0.047                   | 0.144                      | 0.096                      | 0.227                        | 0.191                        | 0.180                      | 0.165                      | 0.227                        | 0.332                        | 0.379                          |
|           | LTE Band 13    | Bottom of laptop at 0mm -        | 0.805         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 0.815                      | 0.815                      | 0.825                        | 0.830                        | 0.816                      | 0.816                      | 0.831                        | 0.827                        | 0.842                          |
|           |                | Back of display screen at 25mm - | 0.013         | 0.131                | 0.083               | 0.167              | 0.152             | 0.047                   | 0.144                      | 0.096                      | 0.227                        | 0.191                        | 0.180                      | 0.165                      | 0.227                        | 0.332                        | 0.379                          |
|           | LTE Band 26/5  | Bottom of laptop at 0mm -        | 1.148         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 1.158                      | 1.158                      | 1.168                        | 1.173                        | 1.159                      | 1.159                      | 1.174                        | 1.170                        | 1.185                          |
|           |                | Back of display screen at 25mm - | 0.013         | 0.131                | 0.083               | 0.167              | 0.152             | 0.047                   | 0.144                      | 0.096                      | 0.227                        | 0.191                        | 0.180                      | 0.165                      | 0.227                        | 0.332                        | 0.379                          |
|           | LTE Band 30    | Bottom of laptop at 0mm -        | 0.928         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 0.938                      | 0.938                      | 0.948                        | 0.953                        | 0.939                      | 0.939                      | 0.954                        | 0.950                        | 0.965                          |
|           |                | Back of display screen at 25mm - | 0.013         | 0.131                | 0.083               | 0.167              | 0.152             | 0.047                   | 0.144                      | 0.096                      | 0.227                        | 0.191                        | 0.180                      | 0.165                      | 0.227                        | 0.332                        | 0.379                          |
|           | LTE Band 41/38 | Bottom of laptop at 0mm -        | 0.795         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 0.805                      | 0.805                      | 0.815                        | 0.820                        | 0.806                      | 0.806                      | 0.821                        | 0.817                        | 0.832                          |
|           |                | Back of display screen at 25mm - | 0.014         | 0.131                | 0.083               | 0.167              | 0.152             | 0.047                   | 0.145                      | 0.097                      | 0.228                        | 0.192                        | 0.181                      | 0.166                      | 0.228                        | 0.333                        | 0.380                          |
|           | LTE Band 66/4  | Bottom of laptop at 0mm -        | 1.107         | 0.010                | 0.010               | 0.011              | 0.011             | 0.015                   | 1.117                      | 1.117                      | 1.127                        | 1.132                        | 1.118                      | 1.118                      | 1.133                        | 1.129                        | 1.144                          |
|           |                | Back of display screen at 25mm - | 0.012         | 0.131                | 0.083               | 0.167              | 0.152             | 0.047                   | 0.143                      | 0.095                      | 0.226                        | 0.190                        | 0.179                      | 0.164                      | 0.226                        | 0.331                        | 0.378                          |

### 11.8.3 SAR to peak location separation (SPLSR)

According to KDB 447498, when the sum of SAR is greater than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio (SPLSR), and the simultaneously transmitting antennas must be considered one pair at a time. The ratio is determined by  $(SAR1+SAR2)^{1.5} / (\text{separation distance between the peak SAR locations for the antenna pair, mm})$ , round to two decimal digits, and must be  $\leq 0.04$  for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion.

If the sum of SAR is under the SAR limit, SPLSR analysis is not required.

### 11.9 Measurement Variability

| Band        | Frequency |        | Bandwidth | Modulation or Sub-Test | RB Size | RB Offset | Test Position    | Spacing (mm) | Note              | Original SAR <sub>1g</sub> | First SAR <sub>1g</sub> | First Ratio SAR <sub>1g</sub> |
|-------------|-----------|--------|-----------|------------------------|---------|-----------|------------------|--------------|-------------------|----------------------------|-------------------------|-------------------------------|
|             | Ch.       | MHz    |           |                        |         |           |                  |              |                   | (W/kg)                     | (W/kg)                  |                               |
| LTE Band 2  | 19100     | 1900   | 20M       | QPSK                   | 1       | 0         | Bottom of laptop | 0            | original #21_once | 1.07                       | 1.06                    | 0.93%                         |
| LTE Band 41 | 40185     | 2549.5 | 20M       | QPSK                   | 1       | 0         | Bottom Face      | 0            | original #32_once | 1.12                       | 1.03                    | 8.04%                         |
| LTE Band 66 | 132072    | 1720   | 20M       | QPSK                   | 1       | 99        | Bottom of laptop | 0            | original #28_once | 1.06                       | 0.989                   | 6.70%                         |
| LTE Band 26 | 26865     | 831.5  | 15M       | QPSK                   | 1       | 37        | Bottom of laptop | 0            | original #26_once | 0.946                      | 0.933                   | 1.37%                         |
| LTE Band 12 | 23095     | 707.5  | 10M       | QPSK                   | 1       | 49        | Bottom of laptop | 0            | original #23_once | 1.03                       | 0.964                   | 6.41%                         |
| LTE Band 30 | 27710     | 2310   | 10M       | QPSK                   | 1       | 0         | Bottom Face      | 0            | original #31_once | 0.911                      | 0.896                   | 1.65%                         |

According to KDB 865664 D01v01r04, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium.

The following procedures are applied to determine if repeated measurements are required:

1. The original highest measured Reported SAR 1-g is  $<0.80$  W/kg, repeated that measurement once.
2. Perform a second repeated measurement the ratio of the largest to the smallest SAR for the original and first repeated measurements is  $<1.2$  W/kg, or when the original or repeated measurement is  $\geq 1.45$  W/kg (~10% from the 1-g SAR limit).



### 11.10 Spot Check

| Band       | Mode            | Frequency |      | Data Rate | Test Position | Spacing<br>(mm) | SAR <sub>1g</sub><br>(W/Kg) | Burst Avg Power<br>(dBm) | Max tune-up<br>(dBm) | Duty Cycle (%) | Reported SAR <sub>1g</sub> | Antenna  | Deviation |
|------------|-----------------|-----------|------|-----------|---------------|-----------------|-----------------------------|--------------------------|----------------------|----------------|----------------------------|----------|-----------|
|            |                 | Ch.       | MHz  |           |               |                 |                             |                          |                      |                |                            |          |           |
| WLAN2.4GHz | 802.11b         | 6         | 2437 | 1 Mbps    | Side 1        | 0               | 0.41                        | 17.43                    | 17.5                 | 99.50          | 0.419                      | Ant Main |           |
| WLAN2.4GHz | 802.11b         | 6         | 2437 | 1 Mbps    | Side 1        | 0               | 0.398                       | 17.43                    | 17.5                 | 99.50          | 0.406                      | Ant Main | -3.10%    |
|            |                 |           |      |           |               |                 |                             |                          |                      |                |                            |          |           |
| WLAN2.4GHz | 802.11b         | 11        | 2462 | 1 Mbps    | Side 1        | 0               | 0.352                       | 17.46                    | 17.5                 | 99.51          | 0.357                      | Ant Aux  |           |
| WLAN2.4GHz | 802.11b         | 11        | 2462 | 1 Mbps    | Side 1        | 0               | 0.335                       | 17.46                    | 17.5                 | 99.51          | 0.340                      | Ant Aux  | -4.76%    |
|            |                 |           |      |           |               |                 |                             |                          |                      |                |                            |          |           |
| Bluetooth  |                 | 78        | 2480 | 1 Mbps    | Side 1        | 0               | 0.064                       | 10.91                    | 11.5                 | 78.66          | 0.093                      | Ant Aux  |           |
| Bluetooth  |                 | 78        | 2480 | 1 Mbps    | Side 1        | 0               | 0.062                       | 10.91                    | 11.5                 | 78.66          | 0.090                      | Ant Aux  | -3.23%    |
|            |                 |           |      |           |               |                 |                             |                          |                      |                |                            |          |           |
| WLAN5GHz   | 802.11n 40 MHz  | 54        | 5270 | HT0       | Side 1        | 0               | 0.474                       | 15.99                    | 16                   | 93.33          | 0.509                      | Ant Main |           |
| WLAN5GHz   | 802.11n 40 MHz  | 54        | 5270 | HT0       | Side 1        | 0               | 0.458                       | 15.99                    | 16                   | 93.33          | 0.492                      | Ant Main | -3.34%    |
|            |                 |           |      |           |               |                 |                             |                          |                      |                |                            |          |           |
| WLAN5GHz   | 802.11n 40 MHz  | 54        | 5270 | HT0       | Side 1        | 0               | 0.34                        | 15.94                    | 16                   | 95.60          | 0.361                      | Ant Aux  |           |
| WLAN5GHz   | 802.11n 40 MHz  | 54        | 5270 | HT0       | Side 1        | 0               | 0.328                       | 15.94                    | 16                   | 95.60          | 0.348                      | Ant Aux  | -3.60%    |
|            |                 |           |      |           |               |                 |                             |                          |                      |                |                            |          |           |
| WLAN5GHz   | 802.11ac 80 MHz | 106       | 5530 | VHT0      | Side 1        | 0               | 0.537                       | 15.96                    | 16                   | 93.33          | 0.581                      | Ant Main |           |
| WLAN5GHz   | 802.11ac 80 MHz | 106       | 5530 | VHT0      | Side 1        | 0               | 0.511                       | 15.96                    | 16                   | 93.33          | 0.553                      | Ant Main | -4.82%    |
|            |                 |           |      |           |               |                 |                             |                          |                      |                |                            |          |           |
| WLAN5GHz   | 802.11ac 80 MHz | 138       | 5690 | VHT0      | Side 1        | 0               | 0.596                       | 15.96                    | 16                   | 95.60          | 0.629                      | Ant Aux  |           |
| WLAN5GHz   | 802.11ac 80 MHz | 138       | 5690 | VHT0      | Side 1        | 0               | 0.557                       | 15.96                    | 16                   | 95.60          | 0.588                      | Ant Aux  | -6.52%    |
|            |                 |           |      |           |               |                 |                             |                          |                      |                |                            |          |           |
| WLAN5GHz   | 802.11ac 80 MHz | 155       | 5775 | VHT0      | Side 1        | 0               | 0.507                       | 15.86                    | 16                   | 95.92          | 0.546                      | Ant Main |           |
| WLAN5GHz   | 802.11ac 80 MHz | 155       | 5775 | VHT0      | Side 1        | 0               | 0.459                       | 15.86                    | 16                   | 95.92          | 0.494                      | Ant Main | -9.52%    |
|            |                 |           |      |           |               |                 |                             |                          |                      |                |                            |          |           |
| WLAN5GHz   | 802.11ac 80 MHz | 155       | 5775 | VHT0      | Side 1        | 0               | 0.552                       | 15.93                    | 16                   | 95.60          | 0.587                      | Ant Aux  |           |
| WLAN5GHz   | 802.11ac 80 MHz | 155       | 5775 | VHT0      | Side 1        | 0               | 0.503                       | 15.93                    | 16                   | 95.60          | 0.535                      | Ant Aux  | -8.86%    |



### **11.11 Requirements on the Uncertainty Evaluation**

Decision Rule

- ☒ Uncertainty is not included.  
☐ Uncertainty is included.

The highest measured 1-g SAR is less than 1.5 W/kg and the highest measured 10-g SAR is less than 3.75 W/kg. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis described in IEEE 1528-2013 and IEC/IEEE 62209-1528 is not required.

## **12. Conclusion**

The SAR test values found for the device are below the maximum limit of 1.6 W/kg.

## Appendix A - System Performance Check

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/6

System Performance Check at 750MHz\_Head

**DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1004**

Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.904 \text{ S/m}$ ;  $\epsilon_r = 41.924$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.73, 9.73, 9.73) @ 750 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**System Performance Check at 750MHz/Area Scan (61x121x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 2.86 W/kg

**System Performance Check at 750MHz/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 59.56 V/m; Power Drift = -0.12 dB

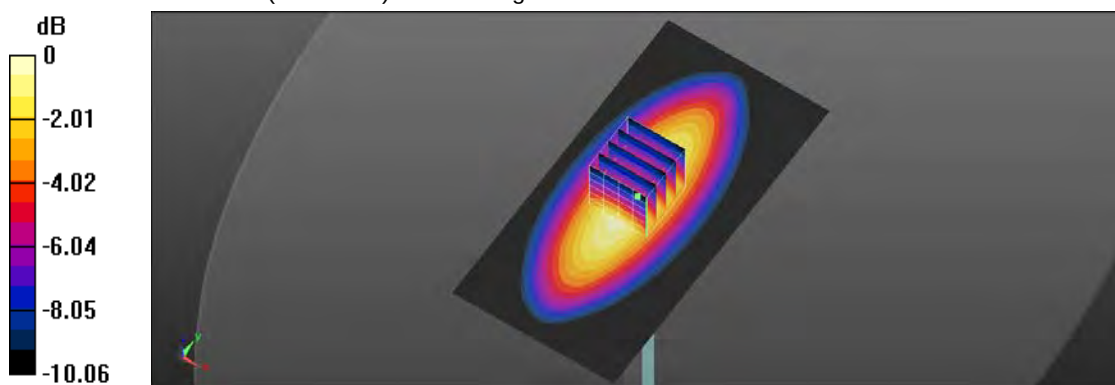
Peak SAR (extrapolated) = 3.20 W/kg

**SAR(1 g) = 2.19 W/kg; SAR(10 g) = 1.46 W/kg**

Smallest distance from peaks to all points 3 dB below = 16.7 mm

Ratio of SAR at M2 to SAR at M1 = 68%

Maximum value of SAR (measured) = 2.89 W/kg



0 dB = 2.89 W/kg = 4.61 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/6

System Performance Check at 835MHz\_Head

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082**

Communication System: UID 0, CW (0); Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.902 \text{ S/m}$ ;  $\epsilon_r = 42.333$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.52, 9.52, 9.52) @ 835 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**System Performance Check at 835MHz/Area Scan (61x121x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 3.35 W/kg

**System Performance Check at 835MHz/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 63.69 V/m; Power Drift = 0.03 dB

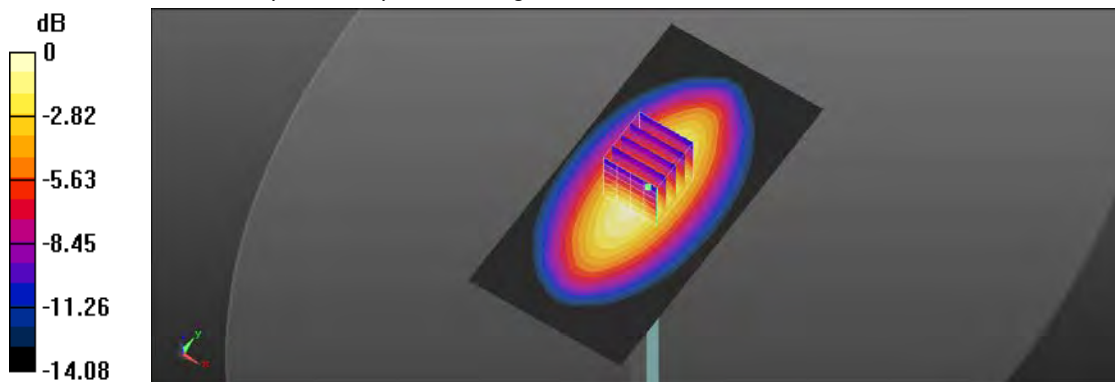
Peak SAR (extrapolated) = 3.90 W/kg

**SAR(1 g) = 2.57 W/kg; SAR(10 g) = 1.67 W/kg**

Smallest distance from peaks to all points 3 dB below = 16 mm

Ratio of SAR at M2 to SAR at M1 = 65.6%

Maximum value of SAR (measured) = 3.47 W/kg



0 dB = 3.47 W/kg = 5.40 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/6/30

System Performance Check at 1750MHz\_Head

**DUT: Dipole D1750V2; Type: D1750V2; Serial: D1750V2 - SN1111**

Communication System: UID 0, CW (0); Frequency: 1750 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 40.615$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(8.88, 8.88, 8.88) @ 1750 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**System Performance Check at 1750MHz/Area Scan (61x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 14.5 W/kg

**System Performance Check at 1750MHz/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 103.8 V/m; Power Drift = 0.06 dB

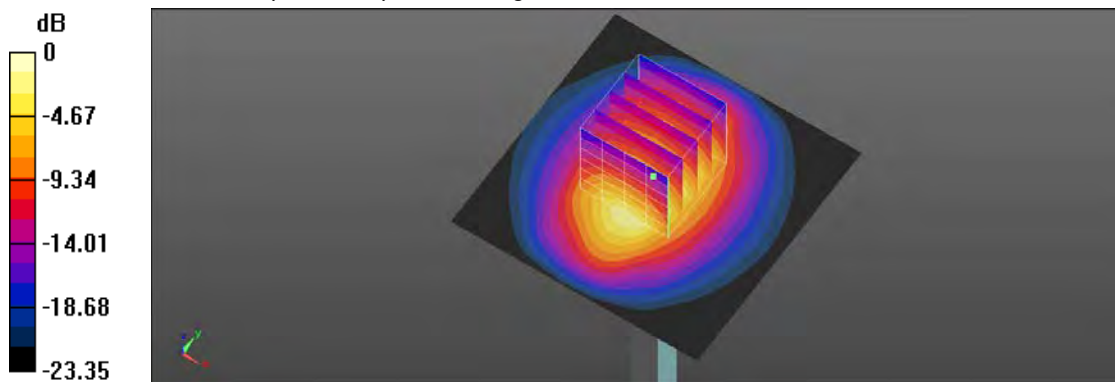
Peak SAR (extrapolated) = 17.4 W/kg

**SAR(1 g) = 9.29 W/kg; SAR(10 g) = 4.81 W/kg**

Smallest distance from peaks to all points 3 dB below = 9.6 mm

Ratio of SAR at M2 to SAR at M1 = 53.3%

Maximum value of SAR (measured) = 14.5 W/kg



0 dB = 14.5 W/kg = 11.61 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/1

System Performance Check at 1900MHz\_Head

**DUT: Dipole D1900V2\_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111**

Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.449$  S/m;  $\epsilon_r = 40.111$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(8.43, 8.43, 8.43) @ 1900 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**System Performance Check at 1900MHz/Area Scan (61x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 16.1 W/kg

**System Performance Check at 1900MHz/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 106.5 V/m; Power Drift = 0.06 dB

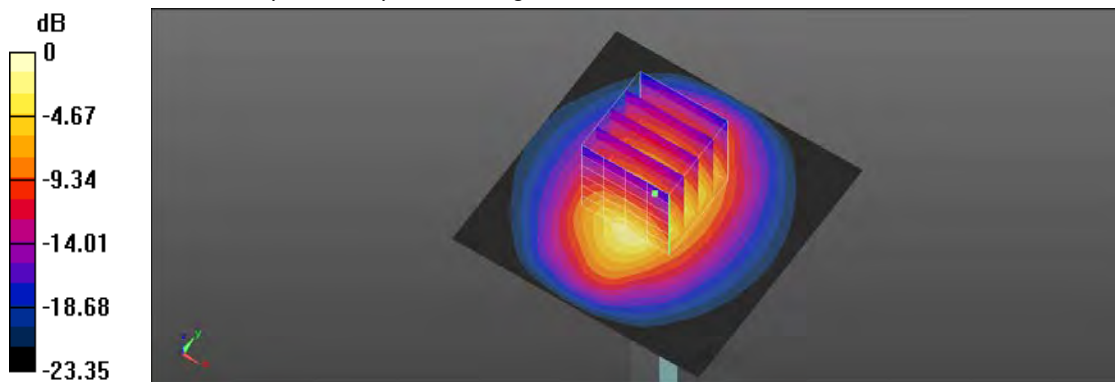
Peak SAR (extrapolated) = 19.4 W/kg

**SAR(1 g) = 10.3 W/kg; SAR(10 g) = 5.35 W/kg**

Smallest distance from peaks to all points 3 dB below = 9.6 mm

Ratio of SAR at M2 to SAR at M1 = 53.3%

Maximum value of SAR (measured) = 16.2 W/kg



0 dB = 16.2 W/kg = 12.10 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/7

System Performance Check at 2300MHz\_Head

**DUT: Dipole 2300 MHz; Type: D2300V2; Serial: D2300V2 - SN:1005**

Communication System: UID 0, CW (0); Frequency: 2300 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2300$  MHz;  $\sigma = 1.654$  S/m;  $\epsilon_r = 40.374$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.89, 7.89, 7.89) @ 2300 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**System Performance Check at 2300MHz/Area Scan (81x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 19.3 W/kg

**System Performance Check at 2300MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 108.2 V/m; Power Drift = 0.06 dB

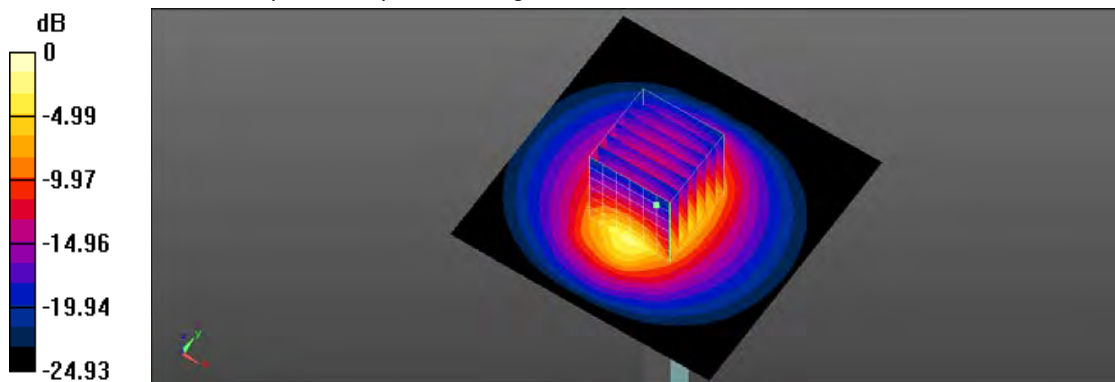
Peak SAR (extrapolated) = 24.2 W/kg

**SAR(1 g) = 11.4 W/kg; SAR(10 g) = 5.32 W/kg**

Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 47.5%

Maximum value of SAR (measured) = 19.3 W/kg



0 dB = 19.3 W/kg = 12.86 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/7

System Performance Check at 2600MHz\_Head

**DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1007**

Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2600$  MHz;  $\sigma = 1.986$  S/m;  $\epsilon_r = 39.258$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.37, 7.37, 7.37) @ 2600 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**System Performance Check at 2600MHz/Area Scan (81x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 24.6 W/kg

**System Performance Check at 2600MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 112.0 V/m; Power Drift = 0.06 dB

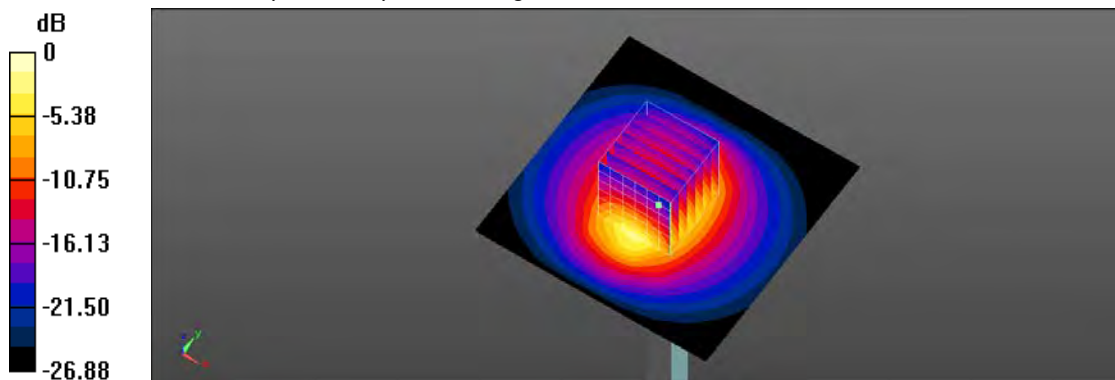
Peak SAR (extrapolated) = 30.6 W/kg

**SAR(1 g) = 14.6 W/kg; SAR(10 g) = 6.8 W/kg**

Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 48%

Maximum value of SAR (measured) = 24.6 W/kg



0 dB = 24.6 W/kg = 13.91 dBW/kg

## Appendix B - Measurement Data

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/1

3\_WCDMA Band II CH 9538\_Bottom Face\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, WCDMA Band II (0); Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1908$  MHz;  $\sigma = 1.455$  S/m;  $\epsilon_r = 40.09$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(8.43, 8.43, 8.43) @ 1907.6 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (61x51x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.95 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.21 V/m; Power Drift = 0.13 dB

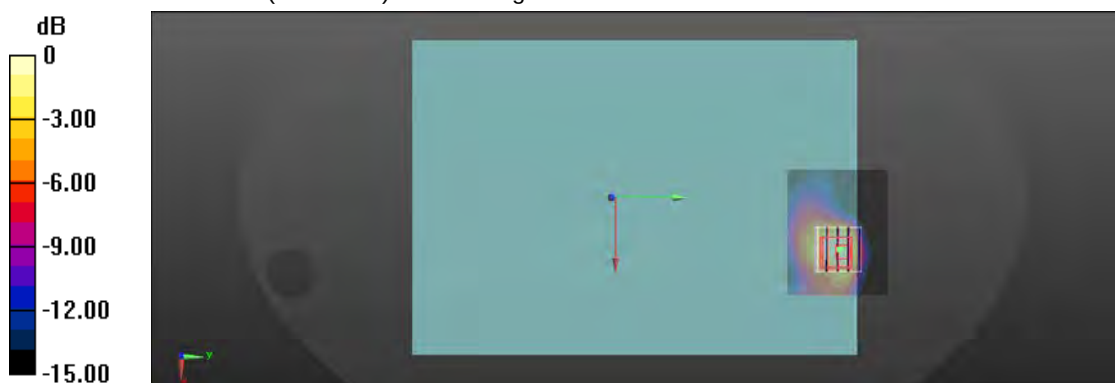
Peak SAR (extrapolated) = 1.96 W/kg

**SAR(1 g) = 0.907 W/kg; SAR(10 g) = 0.489 W/kg**

Smallest distance from peaks to all points 3 dB below = 6.4 mm

Ratio of SAR at M2 to SAR at M1 = 46.8%

Maximum value of SAR (measured) = 1.42 W/kg



0 dB = 1.42 W/kg = 1.52 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/6/30

6\_WCDMA Band IV CH 1312\_Bottom Face\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, WCDMA Band IV (0); Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1712.4$  MHz;  $\sigma = 1.341$  S/m;  $\epsilon_r = 40.713$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(8.88, 8.88, 8.88) @ 1712.4 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (61x51x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.73 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.50 V/m; Power Drift = 0.01 dB

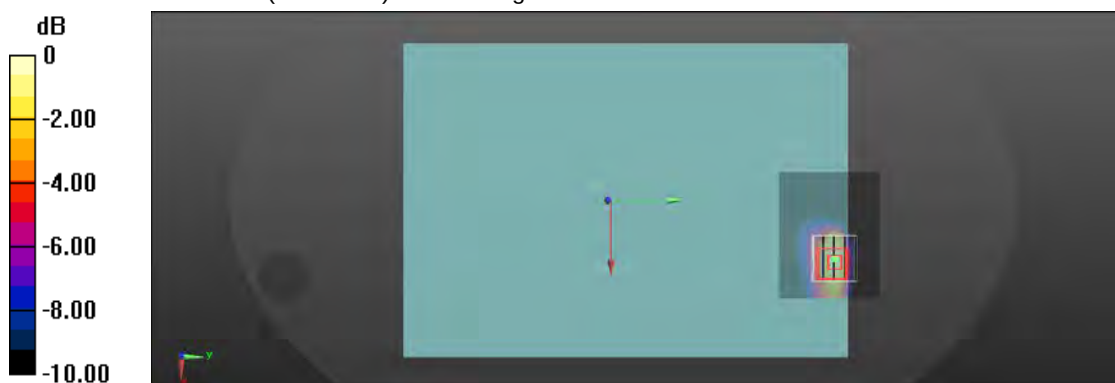
Peak SAR (extrapolated) = 1.84 W/kg

**SAR(1 g) = 0.888 W/kg; SAR(10 g) = 0.454 W/kg**

Smallest distance from peaks to all points 3 dB below = 9.3 mm

Ratio of SAR at M2 to SAR at M1 = 48.9%

Maximum value of SAR (measured) = 1.47 W/kg



0 dB = 1.47 W/kg = 1.67 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/6

100\_WCDMA Band V CH 4182\_Bottom of Laptop\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, WCDMA Band V (0); Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.904$  S/m;  $\epsilon_r = 42.304$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.52, 9.52, 9.52) @ 836.4 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (61x51x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.992 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 34.26 V/m; Power Drift = -0.12 dB

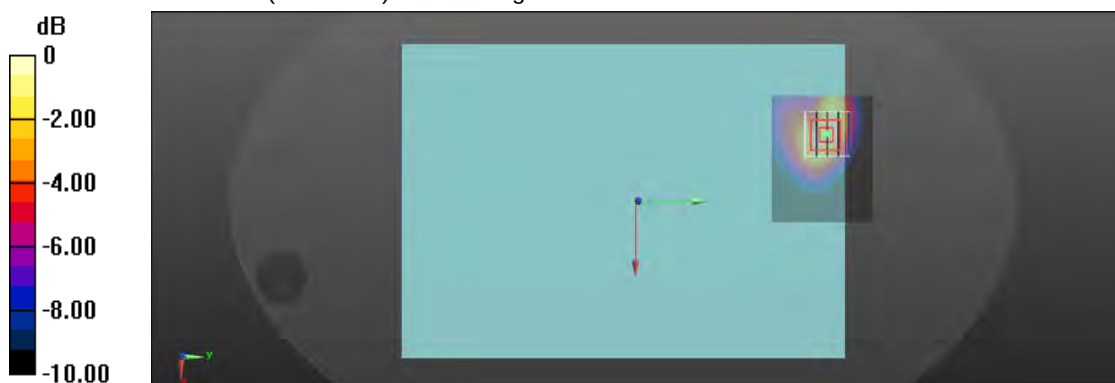
Peak SAR (extrapolated) = 1.31 W/kg

**SAR(1 g) = 0.686 W/kg; SAR(10 g) = 0.390 W/kg**

Smallest distance from peaks to all points 3 dB below = 11.5 mm

Ratio of SAR at M2 to SAR at M1 = 52.2%

Maximum value of SAR (measured) = 1.08 W/kg



0 dB = 1.08 W/kg = 0.33 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/1

21\_LTE Band 2 CH 19100\_QPSK\_BW 20M\_1RB Size 0RB Offset\_Bottom of Laptop\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, Generic LTE (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.449$  S/m;  $\epsilon_r = 40.111$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(8.43, 8.43, 8.43) @ 1900 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (61x51x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.16 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 30.06 V/m; Power Drift = -0.16 dB

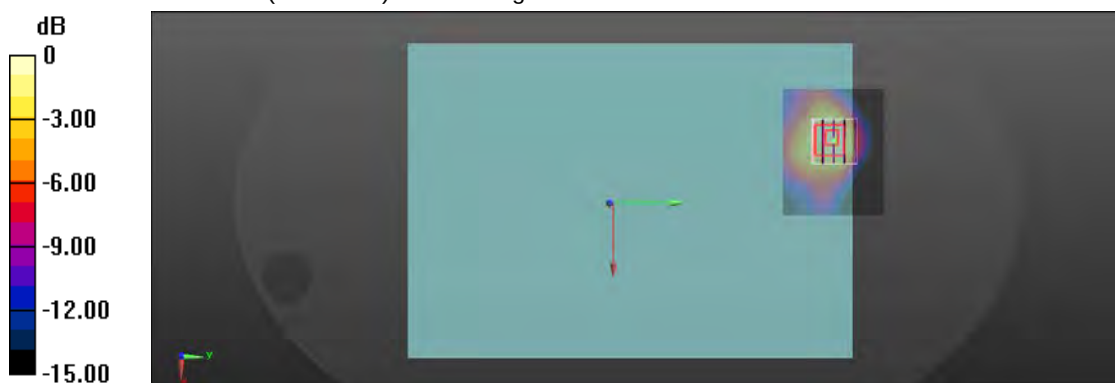
Peak SAR (extrapolated) = 2.09 W/kg

**SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.612 W/kg**

Smallest distance from peaks to all points 3 dB below = 8 mm

Ratio of SAR at M2 to SAR at M1 = 51.1%

Maximum value of SAR (measured) = 1.61 W/kg



0 dB = 1.61 W/kg = 2.07 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/6/30

29\_LTE Band 4 CH 20175\_QPSK\_BW 20M\_1RB Size 0RB Offset\_Bottom of Laptop\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, Generic LTE (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.356$  S/m;  $\epsilon_r = 40.67$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(8.88, 8.88, 8.88) @ 1732.5 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (61x51x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.52 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.14 V/m; Power Drift = -0.08 dB

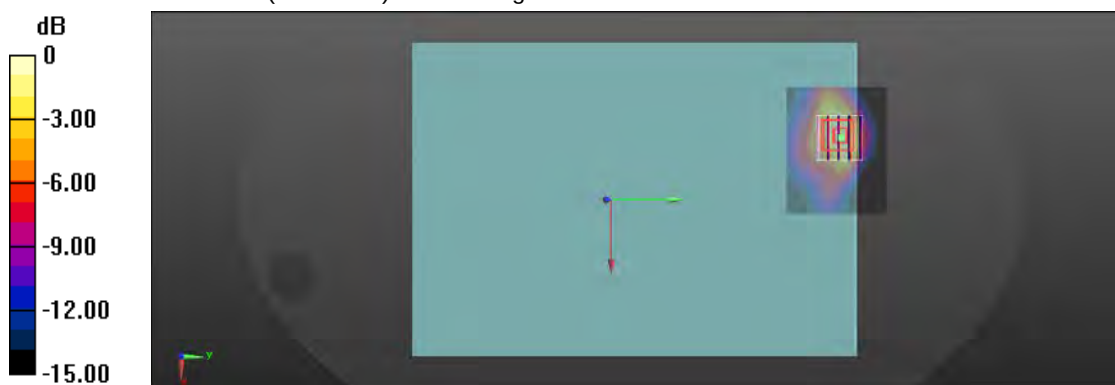
Peak SAR (extrapolated) = 1.67 W/kg

**SAR(1 g) = 0.835 W/kg; SAR(10 g) = 0.445 W/kg**

Smallest distance from peaks to all points 3 dB below = 10.7 mm

Ratio of SAR at M2 to SAR at M1 = 49.1%

Maximum value of SAR (measured) = 1.33 W/kg



0 dB = 1.33 W/kg = 1.24 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/6

27\_LTE Band 5 CH 20525\_QPSK\_BW 10M\_1RB Size 0RB Offset\_Bottom of laptop\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, Generic LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.903$  S/m;  $\epsilon_r = 42.311$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.52, 9.52, 9.52) @ 836.5 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (61x51x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.36 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 40.28 V/m; Power Drift = -0.03 dB

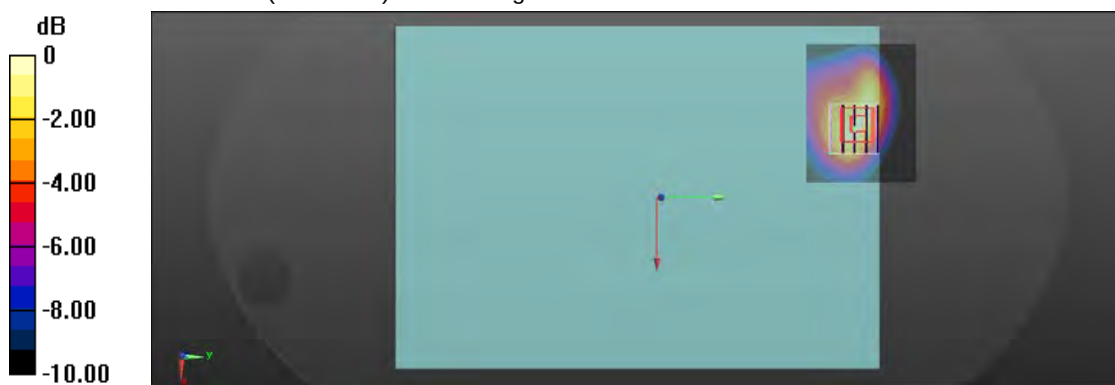
Peak SAR (extrapolated) = 1.74 W/kg

**SAR(1 g) = 0.933 W/kg; SAR(10 g) = 0.538 W/kg**

Smallest distance from peaks to all points 3 dB below = 12.2 mm

Ratio of SAR at M2 to SAR at M1 = 54.4%

Maximum value of SAR (measured) = 1.39 W/kg



0 dB = 1.39 W/kg = 1.43 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/7

30\_LTE Band 7 CH 20850\_QPSK\_BW 20M\_1RB Size 0RB Offset\_Bottom of Face\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, Generic LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1

Medium parameters used:  $f = 2510$  MHz;  $\sigma = 1.893$  S/m;  $\epsilon_r = 39.575$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.37, 7.37, 7.37) @ 2510 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (71x61x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.41 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 30.08 V/m; Power Drift = -0.01 dB

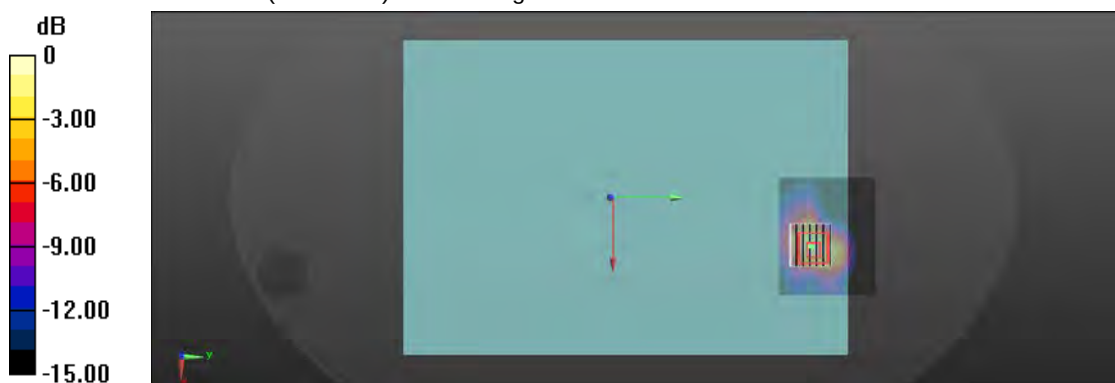
Peak SAR (extrapolated) = 2.20 W/kg

**SAR(1 g) = 0.860 W/kg; SAR(10 g) = 0.340 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.1 mm

Ratio of SAR at M2 to SAR at M1 = 43%

Maximum value of SAR (measured) = 1.53 W/kg



0 dB = 1.53 W/kg = 1.85 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/6

23\_LTE Band 12 CH 23095\_QPSK\_BW 10M\_1RB Size 49RB Offset\_Bottom of laptop\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, Generic LTE (0); Frequency: 707.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 707.5$  MHz;  $\sigma = 0.865$  S/m;  $\epsilon_r = 42.534$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.73, 9.73, 9.73) @ 707.5 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (61x51x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.44 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 42.49 V/m; Power Drift = -0.16 dB

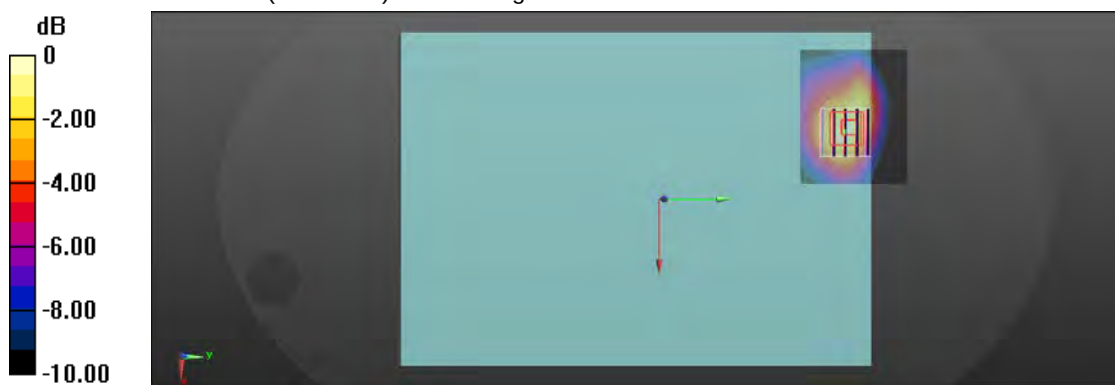
Peak SAR (extrapolated) = 1.87 W/kg

**SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.615 W/kg**

Smallest distance from peaks to all points 3 dB below = 11.5 mm

Ratio of SAR at M2 to SAR at M1 = 54%

Maximum value of SAR (measured) = 1.51 W/kg



0 dB = 1.51 W/kg = 1.79 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/6

25\_LTE Band 13 CH 23230\_QPSK\_BW 10M\_1RB Size 0RB Offset\_Bottom Face\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, Generic LTE (0); Frequency: 782 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 782 \text{ MHz}$ ;  $\sigma = 0.931 \text{ S/m}$ ;  $\epsilon_r = 41.495$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.73, 9.73, 9.73) @ 782 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (61x51x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.24 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 37.28 V/m; Power Drift = -0.16 dB

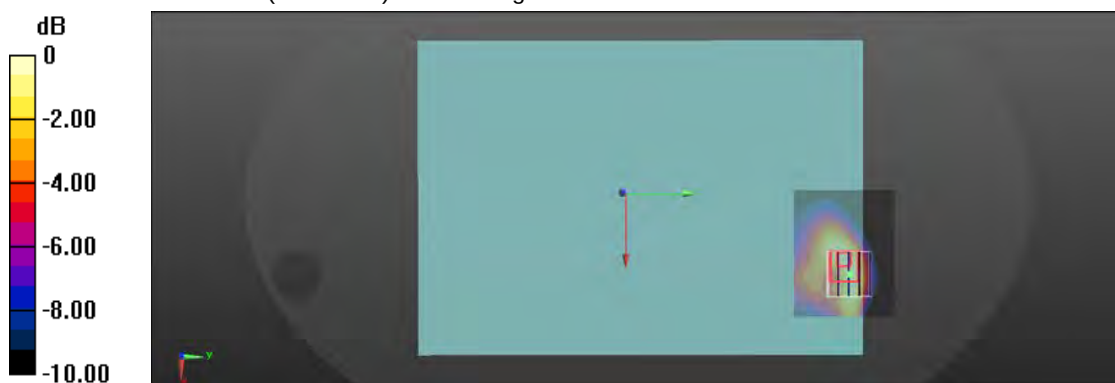
Peak SAR (extrapolated) = 1.56 W/kg

**SAR(1 g) = 0.767 W/kg; SAR(10 g) = 0.423 W/kg**

Smallest distance from peaks to all points 3 dB below = 12.5 mm

Ratio of SAR at M2 to SAR at M1 = 51.2%

Maximum value of SAR (measured) = 1.26 W/kg



0 dB = 1.26 W/kg = 1.00 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/6

24\_LTE Band 17 CH 23790\_QPSK\_BW 10M\_1RB Size 0RB Offset\_Bottom of laptop\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, Generic LTE (0); Frequency: 710 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 710$  MHz;  $\sigma = 0.867$  S/m;  $\epsilon_r = 42.498$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.73, 9.73, 9.73) @ 710 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (61x51x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.25 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 39.53 V/m; Power Drift = -0.13 dB

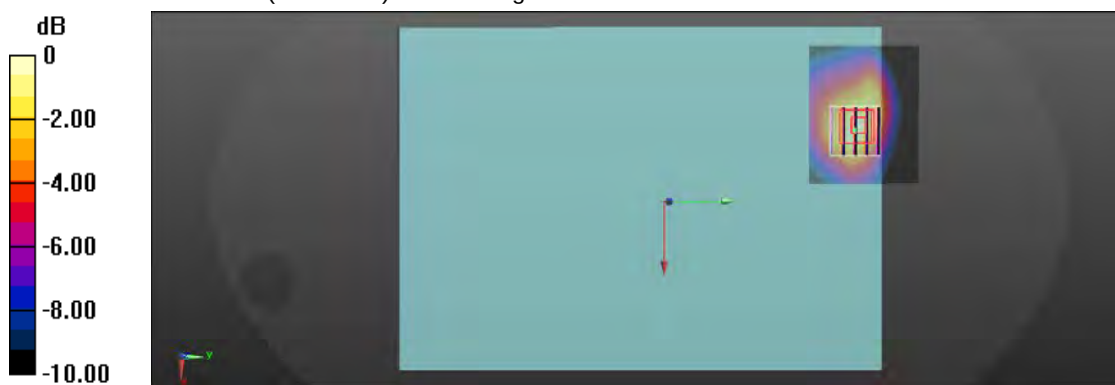
Peak SAR (extrapolated) = 1.60 W/kg

**SAR(1 g) = 0.893 W/kg; SAR(10 g) = 0.536 W/kg**

Smallest distance from peaks to all points 3 dB below = 11.5 mm

Ratio of SAR at M2 to SAR at M1 = 54.6%

Maximum value of SAR (measured) = 1.30 W/kg



0 dB = 1.30 W/kg = 1.14 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/6

34\_LTE Band 26 CH 26865\_QPSK\_BW 15M\_1RB Size 37RB Offset\_Bottom of laptop\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, Generic LTE (0); Frequency: 831.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 831.5$  MHz;  $\sigma = 0.898$  S/m;  $\epsilon_r = 42.383$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.52, 9.52, 9.52) @ 831.5 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (61x51x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.34 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 39.79 V/m; Power Drift = 0.18 dB

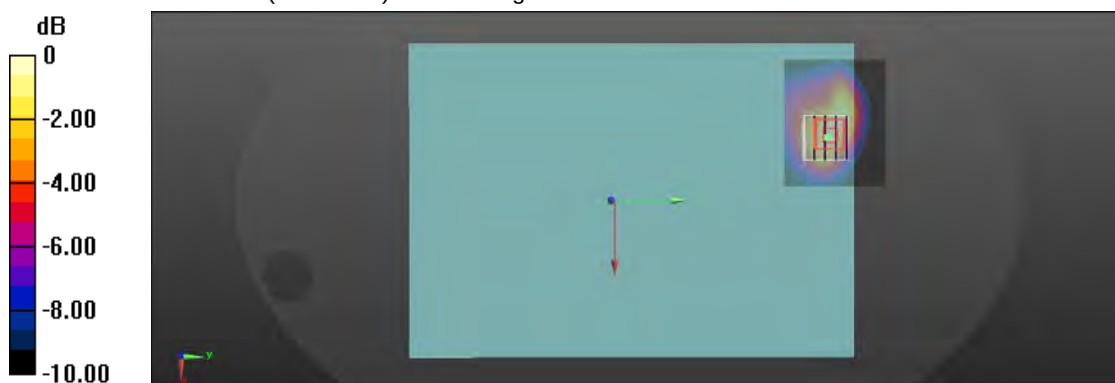
Peak SAR (extrapolated) = 1.76 W/kg

**SAR(1 g) = 0.946 W/kg; SAR(10 g) = 0.544 W/kg**

Smallest distance from peaks to all points 3 dB below = 12.2 mm

Ratio of SAR at M2 to SAR at M1 = 54%

Maximum value of SAR (measured) = 1.43 W/kg



0 dB = 1.43 W/kg = 1.55 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/7

31\_LTE Band 30 CH 27710\_QPSK\_BW 10M\_1RB Size 0RB Offset\_Bottom Face\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, Generic LTE (0); Frequency: 2310 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2310$  MHz;  $\sigma = 1.668$  S/m;  $\epsilon_r = 40.326$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.89, 7.89, 7.89) @ 2310 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (71x61x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.41 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.85 V/m; Power Drift = -0.07 dB

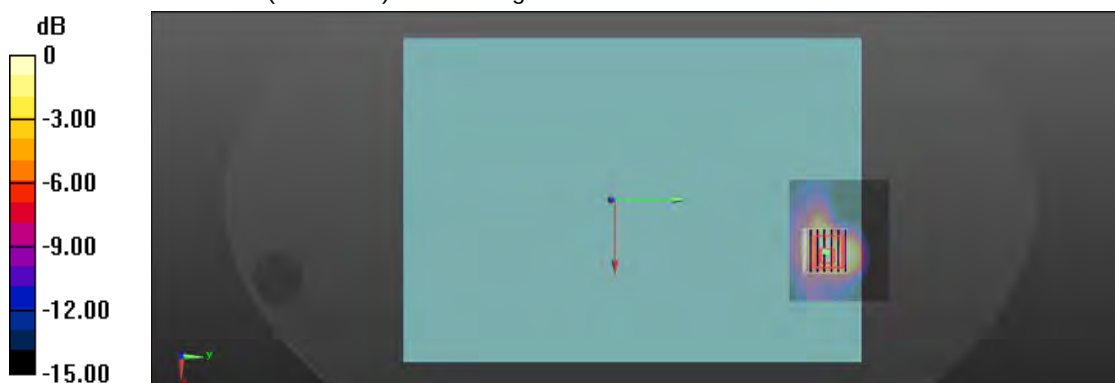
Peak SAR (extrapolated) = 2.22 W/kg

**SAR(1 g) = 0.911 W/kg; SAR(10 g) = 0.402 W/kg**

Smallest distance from peaks to all points 3 dB below = 8.1 mm

Ratio of SAR at M2 to SAR at M1 = 44.9%

Maximum value of SAR (measured) = 1.59 W/kg



0 dB = 1.59 W/kg = 2.01 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/7

33\_LTE Band 38 CH 38150\_QPSK\_BW 20M\_1RB Size 99RB Offset\_Bottom Face\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, Generic LTE (0); Frequency: 2610 MHz;Duty Cycle: 1:1

Medium parameters used:  $f = 2610$  MHz;  $\sigma = 1.997$  S/m;  $\epsilon_r = 39.23$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.37, 7.37, 7.37) @ 2610 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (71x61x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.81 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 28.90 V/m; Power Drift = 0.01 dB

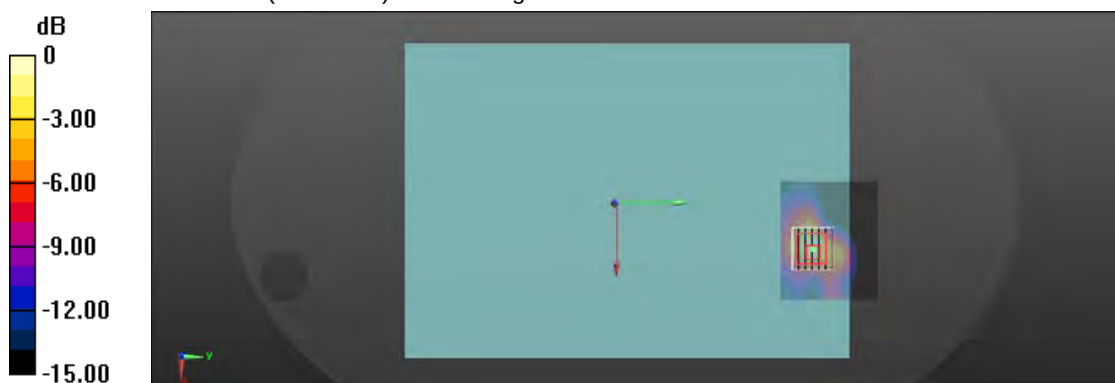
Peak SAR (extrapolated) = 2.58 W/kg

**SAR(1 g) = 1 W/kg; SAR(10 g) = 0.390 W/kg**

Smallest distance from peaks to all points 3 dB below = 6.7 mm

Ratio of SAR at M2 to SAR at M1 = 43.5%

Maximum value of SAR (measured) = 1.79 W/kg



0 dB = 1.79 W/kg = 2.53 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/7/7

32\_LTE Band 41 CH 40185\_QPSK\_BW 20M\_1RB Size 0RB Offset\_Bottom Face\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, Generic LTE (0); Frequency: 2549.5 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2550$  MHz;  $\sigma = 1.93$  S/m;  $\epsilon_r = 39.473$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.37, 7.37, 7.37) @ 2549.5 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (71x61x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.96 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 30.67 V/m; Power Drift = 0.08 dB

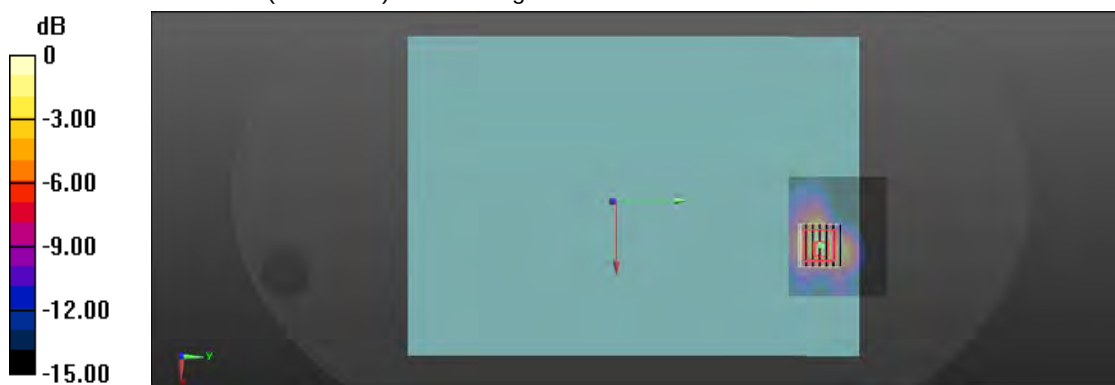
Peak SAR (extrapolated) = 2.82 W/kg

**SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.442 W/kg**

Smallest distance from peaks to all points 3 dB below = 6.7 mm

Ratio of SAR at M2 to SAR at M1 = 41.7%

Maximum value of SAR (measured) = 1.99 W/kg



0 dB = 1.99 W/kg = 2.99 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2021/6/30

28\_LTE Band 66 CH 132072\_QPSK\_BW 20M\_1RB Size 99RB Offset\_Bottom of Laptop\_0mm

**DUT: B3402FEA, B3402FE, B3408FEA, B3408FE; Type: Notebook PC**

Communication System: UID 0, Generic LTE (0); Frequency: 1720 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1720$  MHz;  $\sigma = 1.347$  S/m;  $\epsilon_r = 40.702$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(8.88, 8.88, 8.88) @ 1720 MHz; Calibrated: 2021/3/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2021/3/22
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

**Area Scan (61x51x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.89 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 33.26 V/m; Power Drift = -0.13 dB

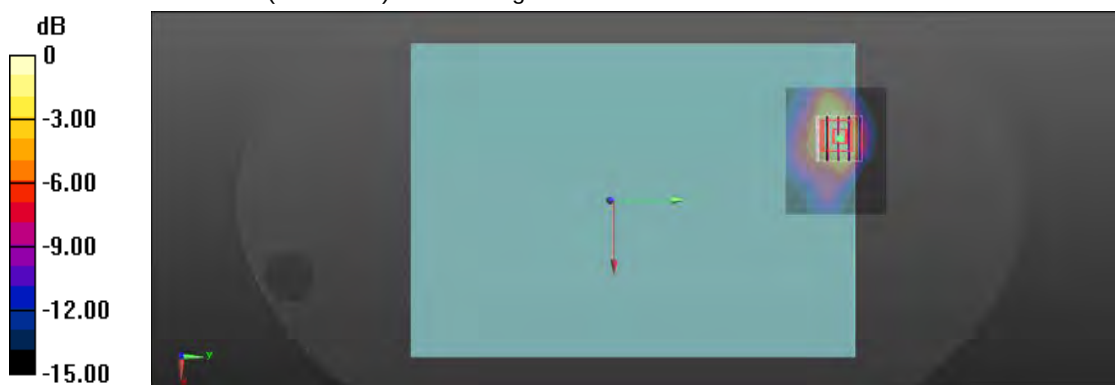
Peak SAR (extrapolated) = 2.06 W/kg

**SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.583 W/kg**

Smallest distance from peaks to all points 3 dB below = 10.7 mm

Ratio of SAR at M2 to SAR at M1 = 50.8%

Maximum value of SAR (measured) = 1.66 W/kg



0 dB = 1.66 W/kg = 2.20 dBW/kg