



FCC 47 CFR § 2.1093  
IEEE Std 1528-2013

**SAR EVALUATION REPORT**

**FOR**

**GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, UWB, NFC and WPT**

**MODEL NUMBER: SM-N986B/DS, SM-N986B**

**FCC ID: A3LSMN986B**

**REPORT NUMBER: 4789468331-S1V3**

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**TL-637**

**Revision History**

| Rev. | Date      | Revisions                                                                                                  | Revised By |
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| V1   | 6/22/2020 | Initial Issue                                                                                              | --         |
| V2   | 6/29/2020 | - Added Note in Sec.1<br>- Updated Tune-up Limit of Product Specific 10-g SAR with Max power for LTE bands | Eunji Choi |
| V3   | 7/8/2020  | Corrected typo in Sec.10.15                                                                                | Eunji Choi |
|      |           |                                                                                                            |            |
|      |           |                                                                                                            |            |

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## 1. Attestation of Test Results

|                                               |                      |                                                                                   |      |                                         |        |
|-----------------------------------------------|----------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------|--------|
| Applicant Name                                |                      | SAMSUNG ELECTRONICS CO.,LTD.                                                      |      |                                         |        |
| FCC ID                                        |                      | A3LSMN986B                                                                        |      |                                         |        |
| Model Number                                  |                      | SM-N986B/DS, SM-N986B                                                             |      |                                         |        |
| Applicable Standards                          |                      | FCC 47 CFR § 2.1093<br>IEEE Std 1528-2013<br>Published RF exposure KDB procedures |      |                                         |        |
| Exposure Category                             |                      | SAR Limits (W/Kg)                                                                 |      |                                         |        |
|                                               |                      | Peak spatial-average<br>(1g of tissue)                                            |      | Product Specific 10g<br>(10g of tissue) |        |
| General population /<br>Uncontrolled exposure |                      | 1.6                                                                               |      | 4.0                                     |        |
| RF Exposure Conditions                        |                      | Equipment Class - The Highest Reported SAR (W/kg)                                 |      |                                         |        |
|                                               |                      | PCE                                                                               | DTS  | NII                                     | DSS    |
| Head                                          |                      | 0.28                                                                              | 0.37 | < 0.10                                  | 0.71   |
| Body-worn                                     |                      | 1.03                                                                              | 0.16 | 1.18                                    | < 0.10 |
| Hotspot                                       |                      | 1.29                                                                              | 0.44 | 1.20                                    | 0.20   |
| Product Specific 10g                          |                      | 2.62                                                                              | N/A  | 0.95                                    | N/A    |
| Simultaneous<br>TX                            | Head                 | 1.16                                                                              | 0.84 | 1.16                                    | 1.16   |
|                                               | Body-worn            | 1.56                                                                              | 1.47 | 1.56                                    | 1.55   |
|                                               | Hotspot              | 1.60                                                                              | 1.59 | 1.60                                    | 1.60   |
|                                               | Product Specific 10g | 3.52                                                                              | N/A  | 3.52                                    | N/A    |
| Date Tested                                   |                      | 5/6/2020 to 6/22/2020                                                             |      |                                         |        |
| Test Results                                  |                      | Pass                                                                              |      |                                         |        |

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** SM-N986B/DS and SM-N986B have the same hardware but number of SIM card slot is different. SM-N986B is single SIM version and SM-N986B/DS is dual SIM version. This application was tested with SM-N986B/DS in all bands. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

|                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Approved & Released By:                                                             | Prepared By:                                                                        |
|  |  |
| Justin Park<br>Operations Leader<br>UL Korea, Ltd. Suwon Laboratory                 | Eunji Choi<br>Test Engineer<br>UL Korea, Ltd. Suwon Laboratory                      |

**1.1. The Highest Reported SAR for RF exposure conditions for each bands**

| Equipment Class | Band          | The Highest Reported SAR (W/kg) |                              |                            |                                     |
|-----------------|---------------|---------------------------------|------------------------------|----------------------------|-------------------------------------|
|                 |               | 1g of tissue                    |                              |                            | 10g of tissue                       |
|                 |               | Head Exposure condition         | Body-worn Exposure condition | Hotspot Exposure condition | Product Specific Exposure condition |
| PCE             | GSM 850       | <b>0.283</b>                    | 0.445                        | 0.908                      | N/A                                 |
|                 | GSM 1900      | 0.098                           | 0.575                        | 1.080                      | 2.005                               |
|                 | WCDMA Band II | 0.048                           | 0.697                        | 1.174                      | 2.242                               |
|                 | WCDMA Band IV | 0.133                           | 0.976                        | 1.238                      | 1.940                               |
|                 | WCDMA Band V  | 0.217                           | 0.383                        | 0.734                      | N/A                                 |
|                 | LTE Band 2    | N/A                             | N/A                          | N/A                        | <b>2.618</b>                        |
|                 | LTE Band 4    | N/A                             | N/A                          | N/A                        | 2.523                               |
|                 | LTE Band 5    | N/A                             | N/A                          | N/A                        | N/A                                 |
|                 | LTE Band 12   | 0.162                           | 0.274                        | 0.342                      | N/A                                 |
|                 | LTE Band 13   | 0.215                           | 0.380                        | 0.569                      | N/A                                 |
|                 | LTE Band 17   | N/A                             | N/A                          | N/A                        | N/A                                 |
|                 | LTE Band 25   | 0.109                           | 0.757                        | 1.232                      | 1.791                               |
|                 | LTE Band 26   | 0.165                           | 0.280                        | 0.647                      | N/A                                 |
|                 | LTE Band 41   | 0.078                           | 0.518                        | 1.034                      | 1.859                               |
|                 | LTE Band 66   | 0.126                           | <b>1.032</b>                 | <b>1.291</b>               | 1.895                               |
| DTS             | 2.4GHz WLAN   | <b>0.370</b>                    | <b>0.157</b>                 | <b>0.437</b>               | N/A                                 |
| UNII            | 5GHz WLAN     | <b>0.097</b>                    | <b>1.178</b>                 | <b>1.197</b>               | <b>0.945</b>                        |
| DSS             | Bluetooth     | <b>0.705</b>                    | <b>0.076</b>                 | <b>0.198</b>               | N/A                                 |

## 2. Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE STD 1528-2013, ANSI C63.26-2015 the following FCC Published RF exposure [KDB](#) procedures:

- 248227 D01 802.11 Wi-Fi SAR v02r02
- 447498 D01 General RF Exposure Guidance v06
- 648474 D04 Handset SAR v01r03
- 690783 D01 SAR Listings on Grants v01r03
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- 865664 D02 RF Exposure Reporting v01r02
- 941225 D01 3G SAR Procedures v03r01
- 941225 D05 SAR for LTE Devices v02r05
- 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02
- 941225 D06 Hotspot Mode v02r01
- 941225 D07 UMPC Mini Tablet v01r02
- 971168 D01 Power Meas License Digital System v03r01

In addition to the above, the following information was used:

- [TCB workshop](#) October, 2014; Page 36, RF Exposure Procedures Update (Overlapping LTE Bands)
- [TCB workshop](#) October, 2014; Page 37, RF Exposure Procedures Update (Other LTE Considerations)
- [TCB workshop](#) October, 2016; Page 7, RF Exposure Procedures (Bluetooth Duty Factor)
- [TCB workshop](#) October, 2016; Page 18, RF Exposure Procedures (DUT Holder Perturbations)
- [TCB workshop](#) May, 2017; Page 6, RF Exposure Procedures (LTE Test Conditions)
- [TCB workshop](#) May, 2017; Page 7, RF Exposure Procedures (LTE Band 41 Power Class 2)
- [TCB workshop](#) April, 2018; Page 3, RF Exposure Procedures (LTE DL CA SAR Test Exclusion Update)
- [TCB workshop](#) April, 2019 Page 19, RF Exposure Procedures (Tissue Simulating Liquids (TSL))
- [TCB workshop](#) November, 2019 Page 5, RF Exposure Procedures (SPLSR Hotspot Combination)

## 3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at

|            |
|------------|
| Suwon      |
| SAR 1 Room |
| SAR 3 Room |
| SAR 4 Room |
| SAR 5 Room |

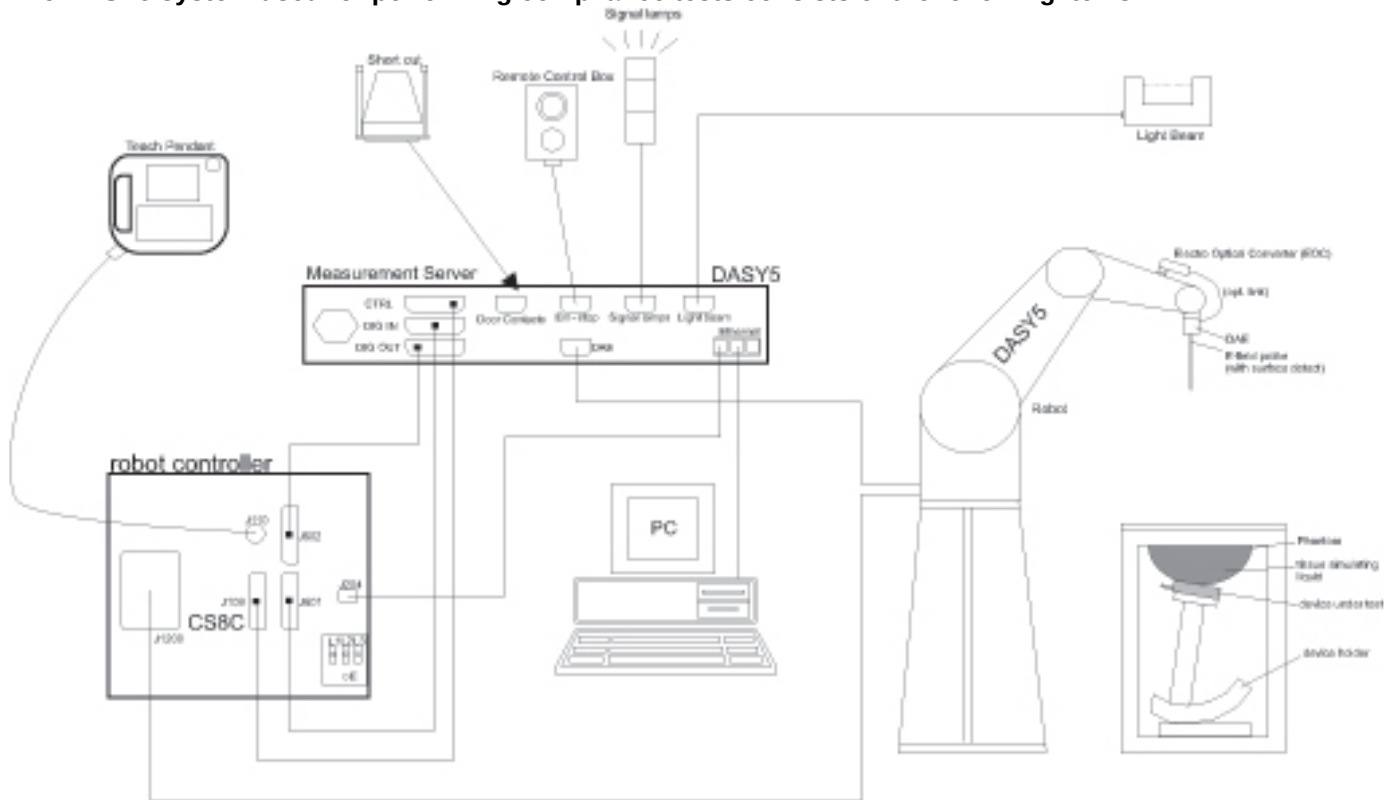
UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637.

The full scope of accreditation can be viewed at <https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf>.

## 4. SAR Measurement System & Test Equipment

### 4.1. SAR Measurement System

The DASY5 system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- 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.
- 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.
- 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.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

## 4.2. SAR Scan Procedures

### Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

### Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE Standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan). If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

Area Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

|                                                                                                        | $\leq 3$ GHz                                                                                                                                                                                                                                                           | $> 3$ GHz                                              |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface | $5 \pm 1$ mm                                                                                                                                                                                                                                                           | $\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ 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: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$                 | $\leq 2$ 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. |                                                        |

**Step 3: Zoom Scan**

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1 g and 10 g and displays these values next to the job's label.

Zoom Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

|                                                                                                                                                                                                                                                                                                             |                                           |                                                                                             | $\leq 3$ GHz                                         | $> 3$ GHz                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------------------------|
| Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$                                                                                                                                                                                                                      |                                           |                                                                                             | $\leq 2$ 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: $\Delta z_{\text{Zoom}}(n)$ |                                                                                             | $\leq 5$ mm                                          | 3 – 4 GHz: $\leq 4$ mm<br>4 – 5 GHz: $\leq 3$ mm<br>5 – 6 GHz: $\leq 2$ mm    |
|                                                                                                                                                                                                                                                                                                             | graded grid                               | $\Delta z_{\text{Zoom}}(1)$ : between 1 <sup>st</sup> 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  |
|                                                                                                                                                                                                                                                                                                             |                                           | $\Delta z_{\text{Zoom}}(n>1)$ : between subsequent points                                   | $\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$         |                                                                               |
| 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 draft standard IEEE P1528-2011 for details.                                                                                                                                                           |                                           |                                                                                             |                                                      |                                                                               |
| * When zoom scan is required and the <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 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. |                                           |                                                                                             |                                                      |                                                                               |

**Step 4: Power drift measurement**

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

**Step 5: Z-Scan (FCC only)**

The Z Scan measures points along a vertical straight line. The line runs along the Z-axis of a one-dimensional grid. In order to get a reasonable extrapolation the extrapolated distance should not be larger than the step size in Z-direction.

### 4.3. Test Equipment

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations, and is traceable to recognized national standards.

#### Dielectric Property Measurements

| Name of Equipment         | Manufacturer | Type/Model    | Serial No.    | Cal. Due Date |
|---------------------------|--------------|---------------|---------------|---------------|
| Network Analyzer          | Agilent      | E5071C        | MY46522054    | 8-7-2020      |
| Dielectric Assessment Kit | SPEAG        | DAK-3.5       | 1196          | 6-18-2020     |
| Dielectric Assessment Kit | SPEAG        | DAK-3.5       | 1046          | 4-28-2021     |
| Shorting block            | SPEAG        | DAK-3.5 Short | SM DAK 200 BA | N/A           |
| Thermometer               | LKM          | DTM3000       | 3424          | 8-9-2020      |

#### System Check

| Name of Equipment                   | Manufacturer | Type/Model            | Serial No. | Cal. Due Date |
|-------------------------------------|--------------|-----------------------|------------|---------------|
| MXG Analog Signal Generator         | Agilent      | N5181A                | MY50145882 | 8-6-2020      |
| Power Sensor                        | Agilent      | U2000A                | MY54260010 | 8-9-2020      |
| Power Sensor                        | Agilent      | U2000A                | MY54260007 | 8-9-2020      |
| Power Amplifier                     | EXODUS       | 1410025-AMP2027-10003 | 10003      | 8-8-2020      |
| Directional Coupler                 | Agilent      | 772D                  | MY52180193 | 8-7-2020      |
| Directional Coupler                 | Agilent      | 778D                  | MY52180432 | 8-7-2020      |
| Low Pass Filter                     | MICROLAB     | LA-15N                | 03943      | 8-7-2020      |
| Low Pass Filter                     | FILTRON      | L14012FL              | 1410003S   | 8-7-2020      |
| Low Pass Filter                     | MICROLAB     | LA-60N                | 03942      | 8-7-2020      |
| Attenuator                          | Agilent      | 8491B/003             | MY39269292 | 8-7-2020      |
| Attenuator                          | Agilent      | 8491B/010             | MY39269315 | 8-7-2020      |
| Attenuator                          | Agilent      | 8491B/020             | MY39269298 | 8-7-2020      |
| E-Field Probe (SAR1)                | SPEAG        | EX3DV4                | 7313       | 2-25-2021     |
| E-Field Probe (SAR3)                | SPEAG        | EX3DV4                | 7314       | 8-29-2020     |
| E-Field Probe (SAR3)                | SPEAG        | EX3DV4                | 7376       | 9-27-2020     |
| E-Field Probe (SAR4)                | SPEAG        | EX3DV4                | 7545       | 9-23-2020     |
| E-Field Probe (SAR5)                | SPEAG        | EX3DV4                | 3871       | 8-29-2020     |
| Data Acquisition Electronics (SAR1) | SPEAG        | DAE4                  | 1494       | 7-18-2020     |
| Data Acquisition Electronics (SAR3) | SPEAG        | DAE4                  | 1468       | 9-20-2020     |
| Data Acquisition Electronics (SAR4) | SPEAG        | DAE4                  | 1591       | 9-11-2020     |
| Data Acquisition Electronics (SAR5) | SPEAG        | DAE4                  | 1343       | 8-27-2020     |
| System Validation Dipole            | SPEAG        | D750V3                | 1122       | 2-24-2022     |
| System Validation Dipole            | SPEAG        | D835V2                | 4d174      | 2-24-2022     |
| System Validation Dipole            | SPEAG        | D1750V2               | 1125       | 2-21-2022     |
| System Validation Dipole            | SPEAG        | D1900V2               | 5d190      | 10-23-2020    |
| System Validation Dipole            | SPEAG        | D1900V2               | 5d199      | 3-19-2022     |
| System Validation Dipole            | SPEAG        | D2450V2               | 939        | 7-25-2021     |
| System Validation Dipole            | SPEAG        | D2600V2               | 1097       | 9-19-2021     |
| System Validation Dipole            | SPEAG        | D5GHzV2               | 1184       | 8-21-2020     |
| System Validation Dipole            | SPEAG        | D5GHzV2               | 1209       | 2-27-2022     |
| Thermometer (SAR1)                  | Lutron       | MHB-382SD             | AH.50215   | 8-8-2020      |
| Thermometer (SAR3)                  | Lutron       | MHB-382SD             | AH.50213   | 8-8-2020      |
| Thermometer (SAR4),(SAR5)           | Lutron       | MHB-382SD             | AH.91463   | 8-8-2020      |

#### Others

| Name of Equipment            | Manufacturer | Type/Model | Serial No.  | Cal. Due Date |
|------------------------------|--------------|------------|-------------|---------------|
| Base Station Simulator       | R & S        | CMW500     | 150313      | 8-8-2020      |
| Base Station Simulator       | R & S        | CMW500     | 150314      | 8-8-2020      |
| Base Station Simulator       | R & S        | CMW500     | 162790      | 8-9-2020      |
| Wireless Connectivity Tester | R & S        | CMW270     | 100982      | 8-5-2020      |
| Bluetooth Tester             | TESCOM       | TC-3000C   | 3000C000546 | 8-7-2020      |

#### Note(s):

Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (D1900V2 (SN : 5d190), D5GHzV2 (SN : 1184))

## 5. Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be  $\leq 30\%$ , for a confidence interval of  $k = 2$ . If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

### 5.1. DECISION RULE

Decision rule for statement(s) of conformity is based on Procedures 1, Clause 4.4.2 in IEC Guide 115:2007.

## 6. Device Under Test (DUT) Information

### 6.1. DUT Description

|                           |                                                                                                                                                                                                                                                                                                                             |                  |                      |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|
| Device Dimension          | Refer to Appendix A.                                                                                                                                                                                                                                                                                                        |                  |                      |
| Back Cover                | <input checked="" type="checkbox"/> The Back Cover is not removable.                                                                                                                                                                                                                                                        |                  |                      |
| Battery Options           | <input checked="" type="checkbox"/> The rechargeable battery is not user accessible                                                                                                                                                                                                                                         |                  |                      |
| Wireless Router (Hotspot) | Wi-Fi Hotspot mode permits the device to share its cellular data connection with other Wi-Fi-enabled devices.<br><input checked="" type="checkbox"/> Mobile Hotspot (Wi-Fi 2.4 GHz : Ch.1 – Ch.11)<br><input checked="" type="checkbox"/> Mobile Hotspot (Wi-Fi 5.8 GHz_UNII-3 (Ch.149(20MHz)/Ch.151(40MHz)/Ch.155(80MHz))) |                  |                      |
| Wi-Fi Direct              | Wi-Fi Direct enabled devices transfer data directly between each other<br><input checked="" type="checkbox"/> Wi-Fi Direct (Wi-Fi 2.4 GHz : Ch.1 – Ch.11)<br><input checked="" type="checkbox"/> Wi-Fi Direct (Wi-Fi 5.8 GHz_UNII-3 (Ch.149(20MHz)/Ch.151(40MHz)/Ch.155(80MHz)))                                            |                  |                      |
| Test Sample Information   | <b>No.</b>                                                                                                                                                                                                                                                                                                                  | <b>S/N</b>       | <b>Notes</b>         |
|                           | 1                                                                                                                                                                                                                                                                                                                           | R3CN40FXT2L      | Main Conducted       |
|                           | 2                                                                                                                                                                                                                                                                                                                           | R3CN40FXVHK      | Main Conducted       |
|                           | 3                                                                                                                                                                                                                                                                                                                           | 43d9e5cc711e7ece | Wi-Fi & BT Conducted |
|                           | 4                                                                                                                                                                                                                                                                                                                           | R3CN40FXVGW      | SAR                  |
|                           | 5                                                                                                                                                                                                                                                                                                                           | R3CN40FXW1K      | SAR                  |
|                           | 6                                                                                                                                                                                                                                                                                                                           | R3CN40FXX1P      | SAR                  |
|                           | 7                                                                                                                                                                                                                                                                                                                           | R3CN40FXWRX      | SAR                  |
|                           | 8                                                                                                                                                                                                                                                                                                                           | R3CN40FXSYD      | SAR                  |
|                           | 9                                                                                                                                                                                                                                                                                                                           | R3CN40CD69Z      | SAR                  |
|                           | 10                                                                                                                                                                                                                                                                                                                          | R3CN40CD4RL      | SAR                  |
|                           | 11                                                                                                                                                                                                                                                                                                                          | R3CN40CD4FP      | SAR                  |

## 6.2. Wireless Technologies

| Wireless technologies                                                                                             | Frequency bands                                                                                                                                              | Operating mode                                                                                                                                                   |                                                                                                                                                                                                                                                  | Duty Cycle used for SAR testing                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GSM                                                                                                               | 850<br>1900                                                                                                                                                  | Voice (GMSK)<br>GPRS (GMSK)<br>EGPRS (8PSK)                                                                                                                      | GPRS Multi-Slot Class:<br><input type="checkbox"/> Class 8 - 1 Up, 4 Down<br><input type="checkbox"/> Class 10 - 2 Up, 4 Down<br><input type="checkbox"/> Class 12 - 4 Up, 4 Down<br><input checked="" type="checkbox"/> Class 33 - 4 Up, 5 Down | GSM Voice: 12.5%<br>(E)GPRS: 1 Slot: 12.5%<br>2 Slots: 25%<br>3 Slots: 37.5%<br>4 Slots: 50%                                                                                                       |
|                                                                                                                   | Does this device support DTM (Dual Transfer Mode)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                       |                                                                                                                                                                  |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                    |
| W-CDMA (UMTS)                                                                                                     | Band II<br>Band IV<br>Band V                                                                                                                                 | UMTS Rel. 99 (Voice & Data)<br>HSDPA (Category 24)<br>HSUPA (Category 6)<br>DC-HSDPA (Category 24)<br>HSPA+ (DL only)                                            |                                                                                                                                                                                                                                                  | 100%                                                                                                                                                                                               |
| LTE                                                                                                               | FDD Band 2<br>FDD Band 4<br>FDD Band 5<br>FDD Band 12<br>FDD Band 13<br>FDD Band 17<br>FDD Band 25<br>FDD Band 26<br>FDD Band 66<br>TDD Band 41 <sup>3</sup> | QPSK<br>16QAM<br>64QAM<br>256QAM<br><br>Rel. 15 Carrier Aggregation (1 Uplink and 4 Downlinks)                                                                   |                                                                                                                                                                                                                                                  | 100% (FDD)<br>63.3% (TDD) <small>Power Class 3</small><br>43.3% (TDD) <small>Power Class 2</small><br>Refer to Sec.6.6                                                                             |
|                                                                                                                   | Does this device support SV-LTE (1xRTT-LTE)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                             |                                                                                                                                                                  |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                    |
| Wi-Fi                                                                                                             | 2.4 GHz                                                                                                                                                      | 802.11b<br>802.11g<br>802.11n (HT20)<br>802.11ax (HE20)                                                                                                          |                                                                                                                                                                                                                                                  | SISO mode :<br>99.5% <small>(802.11b)</small><br>MIMO mode :<br>96.5% <small>(802.11g)</small>                                                                                                     |
|                                                                                                                   | 5 GHz                                                                                                                                                        | 802.11a<br>802.11n (HT20)<br>802.11n (HT40)<br>802.11ac (VHT20)<br>802.11ac (VHT40)<br>802.11ac (VHT80)<br>802.11ax (HE20)<br>802.11ax (HE40)<br>802.11ax (HE80) |                                                                                                                                                                                                                                                  | <u>SISO mode:</u><br>95.8% <small>(802.11a)</small><br>96.6% <small>(802.11ac 80MHz BW)</small><br><u>MIMO mode:</u><br>96.6% <small>(802.11a)</small><br>95.5% <small>(802.11ac 80MHz BW)</small> |
|                                                                                                                   | Does this device support bands 5.60 ~ 5.65 GHz? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                                          |                                                                                                                                                                  |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                    |
| Does this device support Band gap channel(s)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |                                                                                                                                                              |                                                                                                                                                                  |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                    |
| Bluetooth                                                                                                         | 2.4 GHz                                                                                                                                                      | Version 5.0 LE                                                                                                                                                   |                                                                                                                                                                                                                                                  | 76.9% (DH5)                                                                                                                                                                                        |
| NFC                                                                                                               | 13.56 MHz                                                                                                                                                    | Type A/B/F                                                                                                                                                       |                                                                                                                                                                                                                                                  | N/A <sup>4</sup>                                                                                                                                                                                   |
| UWB                                                                                                               | 6.24 – 8.24 GHz                                                                                                                                              | BPM-BPSK                                                                                                                                                         |                                                                                                                                                                                                                                                  | N/A <sup>4</sup>                                                                                                                                                                                   |

### Notes:

- The Bluetooth protocol is considered source-based averaging. Bluetooth GFSK (DH5) was verified to have the highest duty cycle of 76.8% and was considered and used for SAR Testing.
- Duty cycle for Wi-Fi is referenced from the DTS and UNII report.
- This device supports Power Class 2 (HPUE) and Power Class 3 for LTE Band 41.
- Measured Duty Cycle is not required due to SAR test exemption.

### 6.3. Nominal and Maximum Output Power

KDB 447498 sec.4.1. at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit

| RF Air interface | Antenna     | Mode  | Time Slots | Max. RF Output Power (dBm) |           | Reduced. RF Output Power (Hotspot & Proximity sensor & Earjack back-off) (dBm) |           |
|------------------|-------------|-------|------------|----------------------------|-----------|--------------------------------------------------------------------------------|-----------|
|                  |             |       |            | Tune-up Limit              | Frame Pwr | Tune-up Limit                                                                  | Frame Pwr |
| GSM850           | Main 1 Ant. | Voice | 1          | 33.5                       | 24.5      |                                                                                |           |
|                  |             | GPRS  | 1          | 33.5                       | 24.5      |                                                                                |           |
|                  |             | GPRS  | 2          | 31.5                       | 25.5      |                                                                                |           |
|                  |             | GPRS  | 3          | 30.5                       | 26.2      |                                                                                |           |
|                  |             | GPRS  | 4          | 29.0                       | 26.0      |                                                                                |           |
|                  |             | EGPRS | 1          | 27.0                       | 18.0      |                                                                                |           |
|                  |             | EGPRS | 2          | 25.0                       | 19.0      |                                                                                |           |
|                  |             | EGPRS | 3          | 24.0                       | 19.7      |                                                                                |           |
|                  |             | EGPRS | 4          | 23.0                       | 20.0      |                                                                                |           |
| GSM1900          | Main 1 Ant. | Voice | 1          | 30.5                       | 21.5      | 27.0                                                                           | 18.0      |
|                  |             | GPRS  | 1          | 30.5                       | 21.5      | 27.0                                                                           | 18.0      |
|                  |             | GPRS  | 2          | 27.0                       | 21.0      | 24.5                                                                           | 18.5      |
|                  |             | GPRS  | 3          | 25.5                       | 21.2      | 22.5                                                                           | 18.2      |
|                  |             | GPRS  | 4          | 23.5                       | 20.5      | 21.0                                                                           | 18.0      |
|                  |             | EGPRS | 1          | 25.5                       | 16.5      |                                                                                |           |
|                  |             | EGPRS | 2          | 23.5                       | 17.5      |                                                                                |           |
|                  |             | EGPRS | 3          | 22.5                       | 18.2      |                                                                                |           |
|                  |             | EGPRS | 4          | 19.5                       | 16.5      |                                                                                |           |

| RF Air interface | Antenna     | Mode     | Max. RF Output Power (dBm) | Reduced. RF Output Power (Hotspot & Proximity sensor & Earjack back-off) (dBm) |
|------------------|-------------|----------|----------------------------|--------------------------------------------------------------------------------|
| W-CDMA Band II   | Main 1 Ant. | R99      | 23.0                       | 19.5                                                                           |
|                  |             | HSDPA    | 22.5                       | 19.0                                                                           |
|                  |             | HSUPA    | 21.0                       | 19.0                                                                           |
|                  |             | DC-HSDPA | 22.5                       | 19.0                                                                           |
| W-CDMA Band IV   | Main 1 Ant. | R99      | 23.5                       | 19.5                                                                           |
|                  |             | HSDPA    | 22.5                       | 19.0                                                                           |
|                  |             | HSUPA    | 21.5                       | 19.0                                                                           |
|                  |             | DC-HSDPA | 21.5                       | 19.0                                                                           |
| W-CDMA Band V    | Main 1 Ant. | R99      | 25.0                       |                                                                                |
|                  |             | HSDPA    | 23.0                       |                                                                                |
|                  |             | HSUPA    | 23.0                       |                                                                                |
|                  |             | DC-HSDPA | 23.0                       |                                                                                |

| RF Air interface             | Antenna     | Mode | Max. RF Output Power (dBm) | Reduced. RF Output Power (dBm) |                             |
|------------------------------|-------------|------|----------------------------|--------------------------------|-----------------------------|
|                              |             |      |                            | (Hotspot & Earjack back-off)   | (Proximity sensor back-off) |
| LTE Band 2                   | Main 1 Ant. | QPSK | 23.0                       | 19.0                           | 19.5                        |
| LTE Band 4                   | Main 1 Ant. | QPSK | 23.0                       | 19.5                           | 20.0                        |
| LTE Band 5                   | Main 1 Ant. | QPSK | 25.0                       |                                |                             |
| LTE Band 12                  | Main 1 Ant. | QPSK | 25.0                       |                                |                             |
| LTE Bands 13                 | Main 1 Ant. | QPSK | 25.0                       |                                |                             |
| LTE Band 17                  | Main 1 Ant. | QPSK | 25.0                       |                                |                             |
| LTE Band 25                  | Main 1 Ant. | QPSK | 23.0                       |                                |                             |
| LTE Band 26                  | Main 1 Ant. | QPSK | 25.0                       |                                |                             |
| LTE Band 66                  | Main 1 Ant. | QPSK | 23.0                       | 19.5                           |                             |
| LTE Band 41<br>Power Class 3 | Main 2 Ant. | QPSK | 24.0                       | 21.0                           |                             |
| LTE Band 41<br>Power Class 2 | Main 2 Ant. | QPSK | 25.5                       |                                |                             |

| RF Air interface                 | Mode                         | Normal WLAN mode power (dBm) |                      |                      |                         |              |       |
|----------------------------------|------------------------------|------------------------------|----------------------|----------------------|-------------------------|--------------|-------|
|                                  |                              | Max. RF Output Power         |                      |                      | Reduced RF Output Power |              |       |
|                                  |                              | SISO                         | MIMO                 |                      | SISO                    | MIMO         |       |
|                                  |                              | Ant.1, Ant.2                 | Ant.1, Ant.2         | TOTAL                | Ant.1, Ant.2            | Ant.1, Ant.2 | TOTAL |
| WiFi 2.4 GHz<br>(Ch.1)           | 802.11b                      | 21.0                         |                      |                      | 17.0                    |              |       |
|                                  | 802.11g                      | 17.0                         | 15.0                 | 18.0                 | 17.0                    | 15.0         | 18.0  |
|                                  | 802.11n HT20                 | 16.0                         | 15.0                 | 18.0                 | 16.0                    | 15.0         | 18.0  |
|                                  | 802.11ax HE20                | 15.0                         | 12.0                 | 15.0                 | 15.0                    | 12.0         | 15.0  |
| WiFi 2.4 GHz<br>(Ch.2 - Ch.10)   | 802.11b                      | 21.0                         |                      |                      | 17.0                    |              |       |
|                                  | 802.11g                      | 18.0                         | 16.0                 | 19.0                 | 17.0                    | 16.0         | 19.0  |
|                                  | 802.11n HT20                 | 18.0                         | 16.0                 | 19.0                 | 17.0                    | 16.0         | 19.0  |
|                                  | 802.11ax HE20                | 16.0                         | 13.0                 | 16.0                 | 16.0                    | 13.0         | 16.0  |
| WiFi 2.4 GHz<br>(Ch.11)          | 802.11b                      | 21.0                         |                      |                      | 17.0                    |              |       |
|                                  | 802.11g                      | 17.0                         | 16.0                 | 19.0                 | 17.0                    | 15.0         | 18.0  |
|                                  | 802.11n HT20                 | 16.0                         | 15.0                 | 18.0                 | 16.0                    | 15.0         | 18.0  |
|                                  | 802.11ax HE20                | 16.0                         | 13.0                 | 16.0                 | 16.0                    | 13.0         | 16.0  |
| WiFi 2.4 GHz<br>(Ch.12)          | 802.11b                      | 10.0                         |                      |                      |                         |              |       |
|                                  | 802.11g                      | 10.0                         | 10.0                 | 13.0                 |                         |              |       |
|                                  | 802.11n HT20                 | 10.0                         | 10.0                 | 13.0                 |                         |              |       |
|                                  | 802.11ax HE20                | 10.0                         | 10.0                 | 13.0                 |                         |              |       |
| WiFi 2.4 GHz<br>(Ch.13)          | 802.11b                      | 5.0                          |                      |                      |                         |              |       |
|                                  | 802.11g                      | 5.0                          | 5.0                  | 8.0                  |                         |              |       |
|                                  | 802.11n HT20                 | 5.0                          | 5.0                  | 8.0                  |                         |              |       |
|                                  | 802.11ax HE20                | 5.0                          | 5.0                  | 8.0                  |                         |              |       |
| WiFi 5 GHz<br>(UNII-1 & UNII-2A) | 802.11a                      | 16.5                         | 16.5                 | 19.5                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11n HT20                 | 16.5                         | 16.5                 | 19.5                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11n HT40                 | 16.0<br>(ch38: 15.0)         | 16.0<br>(ch38: 15.0) | 19.0<br>(ch38: 18.0) | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11ac VHT20               | 16.5                         | 16.5                 | 19.5                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11ac VHT40               | 16.0                         | 16.0                 | 19.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11ac VHT80               | 15.0                         | 15.0                 | 18.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11ax HE20                | 16.0                         | 13.0                 | 16.0                 | 14.0                    | 13.0         | 16.0  |
|                                  | 802.11ax HE40                | 14.0                         | 11.0                 | 14.0                 | 14.0                    | 11.0         | 14.0  |
| WiFi 5 GHz<br>(UNII-2C)          | 802.11a                      | 17.0                         | 17.0                 | 20.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11n HT20                 | 17.0                         | 17.0                 | 20.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11n HT40                 | 16.0                         | 16.0                 | 19.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11ac VHT20               | 17.0                         | 17.0                 | 20.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11ac VHT40               | 16.0                         | 16.0                 | 19.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11ac VHT80               | 15.0                         | 15.0                 | 18.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11ax HE20                | 16.0                         | 13.0                 | 16.0                 | 14.0                    | 13.0         | 16.0  |
|                                  | 802.11ax HE40                | 14.0                         | 11.0                 | 14.0                 | 14.0                    | 11.0         | 14.0  |
| WiFi 5 GHz<br>(UNII-3)           | 802.11a                      | 13.0                         | 10.0                 | 13.0                 | 13.0                    | 10.0         | 13.0  |
|                                  | 802.11a                      | 18.0                         | 18.0                 | 21.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11n HT20                 | 18.0                         | 18.0                 | 21.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11n HT40                 | 16.0                         | 16.0                 | 19.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11ac VHT20               | 18.0                         | 18.0                 | 21.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11ac VHT40               | 16.0                         | 16.0                 | 19.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11ac VHT80               | 15.0                         | 15.0                 | 18.0                 | 14.0                    | 14.0         | 17.0  |
|                                  | 802.11ax HE20                | 16.0                         | 13.0                 | 16.0                 | 14.0                    | 13.0         | 16.0  |
| Bluetooth (Ch.0 - Ch.78)         | 802.11ax HE40                | 14.0                         | 11.0                 | 14.0                 | 14.0                    | 11.0         | 14.0  |
|                                  | 802.11ax HE80                | 13.0                         | 10.0                 | 13.0                 | 13.0                    | 10.0         | 13.0  |
|                                  | Bluetooth (Ch.0 - Ch.78)     | 17.5                         |                      |                      |                         |              |       |
|                                  | Bluetooth-EDR (Ch.0 - Ch.78) | 11.0                         |                      |                      |                         |              |       |
| Bluetooth-LE                     | Bluetooth-LE_1Mbps, 37 pkt   | 8.0                          |                      |                      |                         |              |       |
|                                  | Bluetooth-LE_2Mbps, 37 pkt   | 9.0                          |                      |                      |                         |              |       |

| RF Air interface               | Mode           | RSDB WLAN mode power (dBm) |              |       |                         |              |       |
|--------------------------------|----------------|----------------------------|--------------|-------|-------------------------|--------------|-------|
|                                |                | Max. RF Output Power       |              |       | Reduced RF Output Power |              |       |
|                                |                | SISO                       | MIMO         |       | SISO                    | MIMO         |       |
|                                |                | Ant.1, Ant.2               | Ant.1, Ant.2 | TOTAL | Ant.1, Ant.2            | Ant.1, Ant.2 | TOTAL |
| WiFi 2.4 GHz<br>(Ch.1)         | 802.11b        | 17.0                       |              |       | 14.0                    |              |       |
|                                | 802.11g        | 17.0                       | 15.0         | 18.0  | 14.0                    | 14.0         | 17.0  |
|                                | 802.11n HT20   | 16.0                       | 15.0         | 18.0  | 14.0                    | 14.0         | 17.0  |
|                                | 802.11ax HE20  | 15.0                       | 12.0         | 15.0  | 14.0                    | 12.0         | 15.0  |
| WiFi 2.4 GHz<br>(Ch.2 - Ch.10) | 802.11b        | 17.0                       |              |       | 14.0                    |              |       |
|                                | 802.11g        | 17.0                       | 16.0         | 19.0  | 14.0                    | 14.0         | 17.0  |
|                                | 802.11n HT20   | 17.0                       | 16.0         | 19.0  | 14.0                    | 14.0         | 17.0  |
|                                | 802.11ax HE20  | 16.0                       | 13.0         | 16.0  | 14.0                    | 13.0         | 16.0  |
| WiFi 2.4 GHz<br>(Ch.11)        | 802.11b        | 17.0                       |              |       | 14.0                    |              |       |
|                                | 802.11g        | 17.0                       | 16.0         | 19.0  | 14.0                    | 14.0         | 17.0  |
|                                | 802.11n HT20   | 16.0                       | 15.0         | 18.0  | 14.0                    | 14.0         | 17.0  |
|                                | 802.11ax HE20  | 16.0                       | 13.0         | 16.0  | 14.0                    | 13.0         | 16.0  |
| WiFi 2.4 GHz<br>(Ch.12)        | 802.11b        | 10.0                       |              |       |                         |              |       |
|                                | 802.11g        | 10.0                       | 10.0         | 13.0  |                         |              |       |
|                                | 802.11n HT20   | 10.0                       | 10.0         | 13.0  |                         |              |       |
|                                | 802.11ax HE20  | 10.0                       | 10.0         | 13.0  |                         |              |       |
| WiFi 2.4 GHz<br>(Ch.13)        | 802.11b        | 5.0                        |              |       |                         |              |       |
|                                | 802.11g        | 5.0                        | 5.0          | 8.0   |                         |              |       |
|                                | 802.11n HT20   | 5.0                        | 5.0          | 8.0   |                         |              |       |
|                                | 802.11ax HE20  | 5.0                        | 5.0          | 8.0   |                         |              |       |
| WiFi 5 GHz                     | 802.11a        | 14.0                       | 14.0         | 17.0  |                         |              |       |
|                                | 802.11n HT20   | 14.0                       | 14.0         | 17.0  |                         |              |       |
|                                | 802.11n HT40   | 14.0                       | 14.0         | 17.0  |                         |              |       |
|                                | 802.11ac VHT20 | 14.0                       | 14.0         | 17.0  |                         |              |       |
|                                | 802.11ac VHT40 | 14.0                       | 14.0         | 17.0  |                         |              |       |
|                                | 802.11ac VHT80 | 14.0                       | 14.0         | 17.0  |                         |              |       |
|                                | 802.11ax HE20  | 14.0                       | 13.0         | 16.0  |                         |              |       |
|                                | 802.11ax HE40  | 14.0                       | 11.0         | 14.0  |                         |              |       |
|                                | 802.11ax HE80  | 13.0                       | 10.0         | 13.0  |                         |              |       |

**Note(s):**

1. This device uses an independent fixed level power reduction mechanism for WLAN mode operations during RCV operation. Detailed descriptions of the power reduction mechanism are included in the operational description.
2. WLAN mode supports RSDB operation. Detail of RSDB operation scenario is mentioned in Sec.13.

## 6.4. Power Back-off Operation

This device supports multiple power back-off modes: WWAN (Ear-jack), WWAN (Hotspot), WWAN (Proximity sensor), and WLAN (RCV). Each of the power back-off operates within specific exposure conditions for certain technologies. For full details on how each power back-off mode operates, refer to the Operational Description.

| Power Back-off mode                  | Technologies Supported                                     | Exposure Conditions Active |           |         |                       |
|--------------------------------------|------------------------------------------------------------|----------------------------|-----------|---------|-----------------------|
|                                      |                                                            | Head                       | Body-worn | Hotspot | Product Specific 10-g |
| WWAN (Ear-jack)                      | GSM 1900<br>W-CDMA B2/4<br>LTE B2/4/25/41 <sup>4</sup> /66 | N/A                        | ✓         | N/A     | ✓                     |
| WWAN (Hotspot) <sup>1</sup>          | GSM 1900<br>W-CDMA B2/4<br>LTE B2/4/25/41 <sup>4</sup> /66 | N/A                        | N/A       | ✓       | N/A                   |
| WWAN (Proximity sensor) <sup>1</sup> | GSM 1900<br>W-CDMA B2/4<br>LTE B2/4/25/41 <sup>4</sup> /66 | N/A                        | N/A       | N/A     | ✓                     |
| WLAN (RCV)                           | Wi-Fi 2.4GHz<br>Wi-Fi 5GHz                                 | ✓                          | N/A       | N/A     | N/A                   |

### Note(s):

1. Tune-up Limits for WWAN (Hotspot) and WWAN (Proximity Sensor) are all Reduced Average Powers. Please refer to Sec.9 for all conducted power measurements.
2. WWAN Back-off priority: Ear-jack → Proximity Sensor → Hotspot
3. Body-worn SAR with ear-jack connected at reduced power is not required due to Body-worn measured at max power is not over 1.2 W/kg.
4. LTE Band 41 Power Class 3.
5. Ear-jack and Proximity sensor back-off mode have the same reduced power level or proximity sensor back-off level is higher than ear-jack in Product Specific 10g, therefore we tested using Proximity sensor back-off mode in Product Specific 10g.

### Product Specific 10g Adjusted SAR Calculation

| Wireless technologies | Max Tune-up Limit (dBm) | Reduced Tune-Up Limit (dBm) | Power Factor | Reported SAR Limit (W/kg) |
|-----------------------|-------------------------|-----------------------------|--------------|---------------------------|
| GSM 1900              | 21.5                    | 18.5                        | 2.00         | 0.601                     |
| W-CDMA B2             | 23.0                    | 19.5                        | 2.24         | 0.536                     |
| W-CDMA B4             | 23.5                    | 19.5                        | 2.51         | 0.478                     |
| LTE B2                | 23.0                    | 19.5                        | 2.24         | 0.536                     |
| LTE B4                | 23.0                    | 20.0                        | 2.00         | 0.601                     |
| LTE B25               | 23.0                    | 19.0                        | 2.51         | 0.478                     |
| LTE B66               | 23.0                    | 19.5                        | 2.24         | 0.536                     |
| LTE B41               | 24.0                    | 21.0                        | 2.00         | 0.601                     |

### Note(s):

1. Tune-up limit powers for GSM 1900 are frame power(dBm).
2. Hotspot mode supports power reduction. When the measured SAR is scaled to the maximum tune-up limit, the adjusted SAR is < 1.2 W/kg. Therefore, Extremity SAR testing is not required for this band in accordance with KDB 648474 §2.5 b. Refer to §10 for Reported SAR results. If the Reported SAR 1g value in §10 is less than the Reported SAR Limit listed above, then Extremity SAR is not required.
3. LTE 50% RB is scaled up to the Max Tune-Up Limit with MPR included.
4. For Reported SAR limit in above table, it was calculated using Max tune-up Limit & Reduced Tune-up limit & Reported SAR 1.2 W/kg.  
(Reported SAR Limit = 1.2 W/kg / Power factor, Power factor =  $10^{((\text{Max tune-up limit} - \text{Reduced tune-up limit})/10)}$ )

## 6.5. General LTE SAR Test and Reporting Considerations

| Item                                                        | Description |                                  |                  |                  |                  |                  |                  |
|-------------------------------------------------------------|-------------|----------------------------------|------------------|------------------|------------------|------------------|------------------|
| Frequency range, Channel Bandwidth, Numbers and Frequencies | Band 2      | Frequency range: 1850 - 1910 MHz |                  |                  |                  |                  |                  |
|                                                             |             | Channel Bandwidth                |                  |                  |                  |                  |                  |
|                                                             |             | 20 MHz                           | 15 MHz           | 10 MHz           | 5 MHz            | 3 MHz            | 1.4 MHz          |
|                                                             | Low         | 18700/<br>1860                   | 18675/<br>1857.5 | 18650/<br>1855   | 18625/<br>1852.5 | 18615/<br>1851.5 | 18607/<br>1850.7 |
|                                                             | Mid         | 18900/<br>1880                   | 18900/<br>1880   | 18900/<br>1880   | 18900/<br>1880   | 18900/<br>1880   | 18900/<br>1880   |
|                                                             | High        | 19100/<br>1900                   | 19125/<br>1902.5 | 19150/<br>1905   | 19175/<br>1907.5 | 19185/<br>1908.5 | 19193/<br>1909.3 |
|                                                             | Band 4      | Frequency range: 1710 - 1755 MHz |                  |                  |                  |                  |                  |
|                                                             |             | Channel Bandwidth                |                  |                  |                  |                  |                  |
|                                                             |             | 20 MHz                           | 15 MHz           | 10 MHz           | 5 MHz            | 3 MHz            | 1.4 MHz          |
|                                                             | Low         | 20050/<br>1720                   | 20025/<br>1717.5 | 20000/<br>1715   | 19975/<br>1712.5 | 19965/<br>1711.5 | 19957/<br>1710.7 |
|                                                             | Mid         | 20175/<br>1732.5                 | 20175/<br>1732.5 | 20175/<br>1732.5 | 20175/<br>1732.5 | 20175/<br>1732.5 | 20175/<br>1732.5 |
|                                                             | High        | 20300/<br>1745                   | 20325/<br>1747.5 | 20350/<br>1750   | 20375/<br>1752.5 | 20385/<br>1753.5 | 20393/<br>1754.3 |
|                                                             | Band 5      | Frequency range: 824 - 849 MHz   |                  |                  |                  |                  |                  |
|                                                             |             | Channel Bandwidth                |                  |                  |                  |                  |                  |
|                                                             |             | 20 MHz                           | 15 MHz           | 10 MHz           | 5 MHz            | 3 MHz            | 1.4 MHz          |
|                                                             | Low         |                                  |                  | 20450/<br>829    | 20425/<br>826.5  | 20415/<br>825.5  | 20407/<br>824.7  |
|                                                             | Mid         |                                  |                  | 20525/<br>836.5  | 20525/<br>836.5  | 20525/<br>836.5  | 20525/<br>836.5  |
|                                                             | High        |                                  |                  | 20600/<br>844    | 20625/<br>846.5  | 20635/<br>847.5  | 20643/<br>848.3  |
|                                                             | Band 12     | Frequency range: 699 - 716 MHz   |                  |                  |                  |                  |                  |
|                                                             |             | Channel Bandwidth                |                  |                  |                  |                  |                  |
|                                                             |             | 20 MHz                           | 15 MHz           | 10 MHz           | 5 MHz            | 3 MHz            | 1.4 MHz          |
|                                                             | Low         |                                  |                  | 23060/<br>704    | 23035/<br>701.5  | 23025/<br>700.5  | 23017/<br>699.7  |
|                                                             | Mid         |                                  |                  | 23095/<br>707.5  | 23095/<br>707.5  | 23095/<br>707.5  | 23095/<br>707.5  |
|                                                             | High        |                                  |                  | 23130/<br>711    | 23155/<br>713.5  | 23165/<br>714.5  | 23173/<br>715.3  |
|                                                             | Band 13     | Frequency range: 777 - 787 MHz   |                  |                  |                  |                  |                  |
|                                                             |             | Channel Bandwidth                |                  |                  |                  |                  |                  |
|                                                             |             | 20 MHz                           | 15 MHz           | 10 MHz           | 5 MHz            | 3 MHz            | 1.4 MHz          |
|                                                             | Low         |                                  |                  |                  | 23205/<br>779.5  |                  |                  |
|                                                             | Mid         |                                  |                  | 23230/<br>782    | 23230/<br>782    |                  |                  |
|                                                             | High        |                                  |                  |                  | 23255/<br>784.5  |                  |                  |
|                                                             | Band 17     | Frequency range: 704 - 716 MHz   |                  |                  |                  |                  |                  |
|                                                             |             | Channel Bandwidth                |                  |                  |                  |                  |                  |
|                                                             |             | 20 MHz                           | 15 MHz           | 10 MHz           | 5 MHz            | 3 MHz            | 1.4 MHz          |
|                                                             | Low         |                                  |                  | 23780/<br>709    | 23755/<br>706.5  |                  |                  |
|                                                             | Mid         |                                  |                  | 23790/<br>710    | 23790/<br>710    |                  |                  |
|                                                             | High        |                                  |                  | 23800/<br>711    | 23825/<br>713.5  |                  |                  |

**General LTE SAR Test and Reporting Considerations (Continued)**

|                                                                                                                                                                                                             |                                                                                                                                                                                                         |                                                                         |                                                               |                   |                  |                   |                   |                   |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------|-------------------|------------------|-------------------|-------------------|-------------------|----------|
| Frequency range, Channel Bandwidth, Numbers and Frequencies                                                                                                                                                 | Band 25                                                                                                                                                                                                 | Frequency range: 1850 - 1915 MHz                                        |                                                               |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         | Channel Bandwidth                                                       |                                                               |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         | 20 MHz                                                                  | 15 MHz                                                        | 10 MHz            | 5 MHz            | 3 MHz             | 1.4 MHz           |                   |          |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         | Low                                                                     | 26140/<br>1860                                                | 26115/<br>1857.5  | 26090/<br>1855   | 26065/<br>1852.5  | 26055/<br>1851.5  | 26047/<br>1850.7  |          |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         | Mid                                                                     | 26365/<br>1882.5                                              | 26365/<br>1882.5  | 26365/<br>1882.5 | 26365/<br>1882.5  | 26365/<br>1882.5  | 26365/<br>1882.5  |          |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         | High                                                                    | 26590/<br>1905                                                | 26615/<br>1907.5  | 26640/<br>1910   | 26665/<br>1912.5  | 26675/<br>1913.5  | 26683/<br>1914.3  |          |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         | Band 26                                                                 | Frequency range: 814 - 849 MHz                                |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             | Channel Bandwidth                                                                                                                                                                                       |                                                                         |                                                               |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             | 20 MHz                                                                                                                                                                                                  |                                                                         | 15 MHz                                                        | 10 MHz            | 5 MHz            | 3 MHz             | 1.4 MHz           |                   |          |
|                                                                                                                                                                                                             | Low                                                                                                                                                                                                     |                                                                         |                                                               | 26765/<br>821.5   | 26740/<br>819    | 26715/<br>816.5   | 26705/<br>815.5   | 26697/<br>814.7   |          |
|                                                                                                                                                                                                             | Mid                                                                                                                                                                                                     |                                                                         |                                                               | 26865/<br>831.5   | 26865/<br>831.5  | 26865/<br>831.5   | 26865/<br>831.5   | 26865/<br>831.5   |          |
|                                                                                                                                                                                                             | High                                                                                                                                                                                                    |                                                                         |                                                               | 26965/<br>841.5   | 26990/<br>844    | 27015/<br>846.5   | 27025/<br>847.5   | 27033/<br>848.3   |          |
|                                                                                                                                                                                                             | Band 66                                                                                                                                                                                                 |                                                                         | Frequency range: 1710 - 1780 MHz                              |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         | Channel Bandwidth                                                       |                                                               |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         | 20 MHz                                                                  | 15 MHz                                                        | 10 MHz            | 5 MHz            | 3 MHz             | 1.4 MHz           |                   |          |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         | Low                                                                     | 132072/<br>1720                                               | 132047/<br>1717.5 | 132022/<br>1715  | 131997/<br>1712.5 | 131987/<br>1711.5 | 131979/<br>1710.7 |          |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         | Mid                                                                     | 132322/<br>1745                                               | 132322/<br>1745   | 132322/<br>1745  | 132322/<br>1745   | 132322/<br>1745   | 132322/<br>1745   |          |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         | High                                                                    | 132572/<br>1770                                               | 132597/<br>1772.5 | 132622/<br>1775  | 132647/<br>1777.5 | 132657/<br>1778.5 | 132665/<br>1779.3 |          |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         | Band 41                                                                 | Frequency range: 2496 - 2690 MHz                              |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             | Channel Bandwidth                                                                                                                                                                                       |                                                                         |                                                               |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             | 20 MHz                                                                                                                                                                                                  |                                                                         | 15 MHz                                                        | 10 MHz            | 5 MHz            | 3 MHz             | 1.4 MHz           |                   |          |
|                                                                                                                                                                                                             | Low                                                                                                                                                                                                     |                                                                         | 39750 / 2506.0                                                |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             | Low-Mid                                                                                                                                                                                                 |                                                                         | 40185 / 2549.5                                                |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             | Mid                                                                                                                                                                                                     |                                                                         | 40620 / 2593.0                                                |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             | Mid-High                                                                                                                                                                                                |                                                                         | 41055 / 2636.5                                                |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             | High                                                                                                                                                                                                    | 41490 / 2680.0                                                          |                                                               |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             | LTE transmitter and antenna implementation                                                                                                                                                              | Refer to Appendix A.                                                    |                                                               |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             | Maximum power reduction (MPR)                                                                                                                                                                           | Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3 |                                                               |                   |                  |                   |                   |                   |          |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         | Modulation                                                              | Channel bandwidth / Transmission bandwidth (N <sub>RB</sub> ) |                   |                  |                   |                   |                   | MPR (dB) |
|                                                                                                                                                                                                             |                                                                                                                                                                                                         |                                                                         | 1.4 MHz                                                       | 3.0 MHz           | 5 MHz            | 10 MHz            | 15 MHz            | 20 MHz            |          |
| 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               |          |
| MPR Built-in by design<br>The manufacturer MPR values are always within the 3GPP maximum MPR allowance but may not follow the default MPR values.<br>A-MPR (additional MPR) was disabled during SAR testing |                                                                                                                                                                                                         |                                                                         |                                                               |                   |                  |                   |                   |                   |          |
| Power reduction                                                                                                                                                                                             | Yes                                                                                                                                                                                                     |                                                                         |                                                               |                   |                  |                   |                   |                   |          |
| Spectrum plots for RB configurations                                                                                                                                                                        | A properly configured base station simulator was used for the SAR and power measurements; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report. |                                                                         |                                                               |                   |                  |                   |                   |                   |          |

**Notes:**

- Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths. 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 per KDB 941225 D05 SAR for LTE devices.
- LTE Band 41 test channels in accordance with October 2014 TCB workshop for all channels bandwidths.
- SAR Testing for LTE was performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

## 6.6. LTE (TDD) Considerations

According to KDB 941225 D05 SAR for LTE Devices, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

LTE TDD Bands support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

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 |                                |                                  |
|--------------------------------|----------------------------------|--------------------------------|----------------------------------|------------------------------------|--------------------------------|----------------------------------|
|                                | 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                              | $6592 \cdot T_s$                 | $2192 \cdot T_s$               | $2560 \cdot T_s$                 | $7680 \cdot T_s$                   | $2192 \cdot T_s$               | $2560 \cdot T_s$                 |
| 1                              | $19760 \cdot T_s$                |                                |                                  | $20480 \cdot T_s$                  |                                |                                  |
| 2                              | $21952 \cdot T_s$                |                                |                                  | $23040 \cdot T_s$                  |                                |                                  |
| 3                              | $24144 \cdot T_s$                |                                |                                  | $25600 \cdot T_s$                  |                                |                                  |
| 4                              | $26336 \cdot T_s$                |                                |                                  | $7680 \cdot T_s$                   | $4384 \cdot T_s$               | $5120 \cdot T_s$                 |
| 5                              | $6592 \cdot T_s$                 | $4384 \cdot T_s$               | $5120 \cdot T_s$                 | $20480 \cdot T_s$                  |                                |                                  |
| 6                              | $19760 \cdot T_s$                |                                |                                  | $23040 \cdot T_s$                  |                                |                                  |
| 7                              | $21952 \cdot T_s$                |                                |                                  | $12800 \cdot T_s$                  |                                |                                  |
| 8                              | $24144 \cdot T_s$                |                                |                                  | -                                  | -                              | -                                |
| 9                              | $13168 \cdot T_s$                |                                |                                  | -                                  | -                              | -                                |

### Calculated Duty Cycle

| Uplink-Downlink Configuration | Downlink-to-Uplink Switch-point Periodicity | Subframe Number |   |   |   |   |   |   |   |   |   | Calculated Duty Cycle (%) |
|-------------------------------|---------------------------------------------|-----------------|---|---|---|---|---|---|---|---|---|---------------------------|
|                               |                                             | 0               | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |                           |
| 0                             | 5 ms                                        | D               | S | U | U | U | D | S | U | U | U | 63.33                     |
| 1                             | 5 ms                                        | D               | S | U | U | D | D | S | U | U | D | 43.33                     |
| 2                             | 5 ms                                        | D               | S | U | D | D | D | S | U | D | D | 23.33                     |
| 3                             | 10 ms                                       | D               | S | U | U | U | D | D | D | D | D | 31.67                     |
| 4                             | 10 ms                                       | D               | S | U | U | D | D | D | D | D | D | 21.67                     |
| 5                             | 10 ms                                       | D               | S | U | D | D | D | D | D | D | D | 11.67                     |
| 6                             | 5 ms                                        | D               | S | U | U | U | D | S | U | U | D | 53.33                     |

Calculated Duty Cycle = Extended cyclic prefix in uplink  $\times (T_s) \times \#$  of S +  $\#$  of U

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle =  $5120 \times [1/(15000 \times 2048)] \times 2 + 6 \text{ ms} = 63.33\%$

where

$T_s = 1/(15000 \times 2048)$  seconds

### Note(s):

This device supports uplink-downlink configurations 0-6. The configuration with highest duty cycle was used for SAR Testing: configuration 0 at 63.3% (Power Class 3) and configuration 1 at 43.3% (Power Class 2) duty cycle.

## 6.7. LTE Carrier Aggregation

### DL Inter-Band

| E-UTRA CA configuration (BCS)   | E-UTRA Band | Bandwidth |       |       |        |        |        | Max Aggregated BW |
|---------------------------------|-------------|-----------|-------|-------|--------|--------|--------|-------------------|
|                                 |             | 1.4 MHz   | 3 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz |                   |
| CA_2A-4A<br>(0)(1)(2)           | Band 2      | Yes       | Yes   | Yes   | Yes    | Yes    | Yes    | 40 MHz            |
|                                 | Band 4      |           |       | Yes   | Yes    | Yes    | Yes    |                   |
|                                 | Band 2      |           |       | Yes   | Yes    |        |        | 20 MHz            |
|                                 | Band 4      |           |       | Yes   | Yes    |        |        |                   |
|                                 | Band 2      |           |       | Yes   | Yes    | Yes    | Yes    | 40 MHz            |
|                                 | Band 4      |           |       | Yes   | Yes    | Yes    | Yes    |                   |
| CA_2A-5A(0)(1)                  | Band 2      |           |       | Yes   | Yes    | Yes    | Yes    | 30 MHz            |
|                                 | Band 5      |           |       | Yes   | Yes    |        |        |                   |
|                                 | Band 2      |           |       | Yes   | Yes    |        |        | 20 MHz            |
|                                 | Band 5      |           |       | Yes   | Yes    |        |        |                   |
| CA_2A-12A<br>(0)(1)(2)          | Band 2      |           |       | Yes   | Yes    | Yes    | Yes    | 30 MHz            |
|                                 | Band 12     |           |       | Yes   | Yes    |        |        |                   |
|                                 | Band 2      |           |       | Yes   | Yes    | Yes    | Yes    | 30 MHz            |
|                                 | Band 12     |           | Yes   | Yes   | Yes    |        |        |                   |
|                                 | Band 2      |           |       | Yes   | Yes    |        |        | 20 MHz            |
|                                 | Band 12     |           |       | Yes   | Yes    |        |        |                   |
| CA_2A-13A(0)(1)                 | Band 2      |           |       | Yes   | Yes    | Yes    | Yes    | 30 MHz            |
|                                 | Band 13     |           |       |       | Yes    |        |        |                   |
|                                 | Band 2      |           |       | Yes   | Yes    |        |        | 20 MHz            |
|                                 | Band 13     |           |       |       | Yes    |        |        |                   |
| CA_2A-17A(0)                    | Band 2      |           |       | Yes   | Yes    |        |        | 20 MHz            |
|                                 | Band 17     |           |       | Yes   | Yes    |        |        |                   |
| CA_2A-66A<br>(0)(1)(2)          | Band 2      | Yes       | Yes   | Yes   | Yes    | Yes    | Yes    | 40 MHz            |
|                                 | Band 66     |           |       | Yes   | Yes    | Yes    | Yes    |                   |
|                                 | Band 2      |           |       | Yes   | Yes    |        |        | 20 MHz            |
|                                 | Band 66     |           |       | Yes   | Yes    |        |        |                   |
|                                 | Band 2      |           |       | Yes   | Yes    | Yes    | Yes    | 40 MHz            |
|                                 | Band 66     |           |       | Yes   | Yes    | Yes    | Yes    |                   |
| CA_4A-12A<br>(0)(1)(2)(3)(4)(5) | Band 4      | Yes       | Yes   | Yes   | Yes    |        |        | 20 MHz            |
|                                 | Band 12     |           |       | Yes   | Yes    |        |        |                   |
|                                 | Band 4      | Yes       | Yes   | Yes   | Yes    | Yes    | Yes    | 30 MHz            |
|                                 | Band 12     |           |       | Yes   | Yes    |        |        |                   |
|                                 | Band 4      |           |       | Yes   | Yes    | Yes    | Yes    | 30 MHz            |
|                                 | Band 12     |           |       | Yes   | Yes    |        |        |                   |
|                                 | Band 4      |           |       | Yes   | Yes    |        |        | 20 MHz            |
|                                 | Band 12     |           |       | Yes   | Yes    |        |        |                   |
|                                 | Band 4      |           |       | Yes   | Yes    | Yes    | Yes    | 30 MHz            |
|                                 | Band 12     |           |       | Yes   | Yes    |        |        |                   |
|                                 | Band 4      |           |       | Yes   | Yes    | Yes    |        | 20 MHz            |
|                                 | Band 12     |           |       | Yes   |        |        |        |                   |
| CA_4A-5A(0)(1)                  | Band 4      |           |       | Yes   | Yes    |        |        | 20 MHz            |
|                                 | Band 5      |           |       | Yes   | Yes    |        |        |                   |
|                                 | Band 4      |           |       | Yes   | Yes    | Yes    | Yes    | 30 MHz            |
|                                 | Band 5      |           |       | Yes   | Yes    |        |        |                   |
| CA_4A-13A(0)(1)                 | Band 4      |           |       | Yes   | Yes    | Yes    | Yes    | 30 MHz            |
|                                 | Band 13     |           |       |       | Yes    |        |        |                   |
|                                 | Band 4      |           |       | Yes   | Yes    |        |        | 20 MHz            |
|                                 | Band 13     |           |       |       | Yes    |        |        |                   |

**DL Inter-Band (Continued)**

| E-UTRA CA configuration<br>(BCS) | E-UTRA Band | Bandwidth     |       |       |        |        |        | Max Aggregated<br>BW |
|----------------------------------|-------------|---------------|-------|-------|--------|--------|--------|----------------------|
|                                  |             | 1.4 MHz       | 3 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz |                      |
| CA_4A-17A(0)                     | Band 4      |               |       | Yes   | Yes    |        |        | 20 MHz               |
|                                  | Band 17     |               |       | Yes   | Yes    |        |        |                      |
| CA_5A-66A(0)                     | Band 5      |               |       | Yes   | Yes    |        |        | 30 MHz               |
|                                  | Band 66     |               |       | Yes   | Yes    | Yes    | Yes    |                      |
| CA_5A-41A(0)                     | Band 5      |               |       | Yes   | Yes    |        |        | 30 MHz               |
|                                  | Band 41     |               |       |       |        |        | Yes    |                      |
| CA_12A-66A<br>(0)(1)(2)(3)(4)(5) | Band 12     |               |       | Yes   | Yes    |        |        | 20 MHz               |
|                                  | Band 66     | Yes           | Yes   | Yes   | Yes    |        |        |                      |
|                                  | Band 12     |               |       | Yes   | Yes    |        |        | 30 MHz               |
|                                  | Band 66     | Yes           | Yes   | Yes   | Yes    | Yes    | Yes    |                      |
|                                  | Band 12     |               | Yes   | Yes   | Yes    |        |        | 30 MHz               |
|                                  | Band 66     |               |       | Yes   | Yes    | Yes    | Yes    |                      |
|                                  | Band 12     |               |       | Yes   | Yes    |        |        | 20 MHz               |
|                                  | Band 66     |               |       | Yes   | Yes    |        |        |                      |
|                                  | Band 12     |               |       | Yes   | Yes    |        |        | 30 MHz               |
|                                  | Band 66     |               |       | Yes   | Yes    | Yes    | Yes    |                      |
|                                  | Band 12     |               |       | Yes   |        |        |        | 20 MHz               |
|                                  | Band 66     |               |       | Yes   | Yes    | Yes    |        |                      |
| CA_26A-41A(0)                    | Band 26     |               |       | Yes   | Yes    | Yes    |        | 35 MHz               |
|                                  | Band 41     |               |       | Yes   | Yes    | Yes    | Yes    |                      |
| CA_2A-4A-5A(0)                   | Band 2      |               |       | Yes   | Yes    | Yes    | Yes    | 50 MHz               |
|                                  | Band 4      |               |       | Yes   | Yes    | Yes    | Yes    |                      |
|                                  | Band 5      |               |       | Yes   | Yes    |        |        |                      |
| CA_2A-4A-13A(0)                  | Band 2      |               |       | Yes   | Yes    | Yes    | Yes    | 50 MHz               |
|                                  | Band 4      |               |       | Yes   | Yes    | Yes    | Yes    |                      |
|                                  | Band 13     |               |       |       | Yes    |        |        |                      |
| CA_4A-4A-12A(0)                  | Band 4      | 4A-4A BCS 0   |       |       |        |        |        | 50 MHz               |
|                                  | Band 12     |               |       | Yes   | Yes    |        |        |                      |
| CA_4A-4A-17A(0)                  | Band 4      | 4A-4A BCS 0   |       |       |        |        |        | 50 MHz               |
|                                  | Band 17     |               |       |       | Yes    |        |        |                      |
| CA_5A-66A-66A(0)                 | Band 5      |               |       | Yes   | Yes    |        |        | 50 MHz               |
|                                  | Band 66     | 66A-66A BCS 0 |       |       |        |        |        |                      |
| CA_12A-66A-66A(0)                | Band 12     |               |       | Yes   | Yes    |        |        | 50 MHz               |
|                                  | Band 66     | 66A-66A BCS 0 |       |       |        |        |        |                      |
| CA_26A-41C(0)                    | Band 26     |               |       | Yes   | Yes    | Yes    |        | 55 MHz               |
|                                  | Band 41     | 41C BCS 1     |       |       |        |        |        |                      |

**DL Inter-Band (Non-Contiguous)**

| E-UTRA CA configuration (BCS) | E-UTRA Band | Allowed Channel BW Per Carrier (MHz) |               |               |               | Max Aggregated BW |
|-------------------------------|-------------|--------------------------------------|---------------|---------------|---------------|-------------------|
|                               |             | 1st Carrier                          | 2nd Carrier   | 3rd Carrier   | 4th Carrier   |                   |
| CA_2A-2A (0)                  | Band 2      | 5, 10, 15, 20                        | 5, 10, 15, 20 |               |               | 40 MHz            |
| CA_4A-4A (0)(1)               | Band 4      | 5, 10, 15, 20                        | 5, 10, 15, 20 |               |               | 40 MHz            |
|                               |             | 5, 10                                | 5, 10         |               |               | 20 MHz            |
| CA_41A-41A (0)(1)             | Band 41     | 10, 15, 20                           | 10, 15, 20    |               |               | 40 MHz            |
|                               |             | 5, 10, 15, 20                        | 5, 10, 15, 20 |               |               |                   |
| CA_66A-66A (0)                | Band 66     | 5, 10, 15, 20                        | 5, 10, 15, 20 |               |               | 40 MHz            |
| CA_41A-41C(0)                 | Band 41     | 5, 10, 15, 20                        | 41C BCS 1     |               |               | 60 MHz            |
|                               |             | 41C BCS 1                            |               | 5, 10, 15, 20 |               |                   |
| CA_41A-41D (0)                | Band 41     | 5, 10, 15, 20                        | 41D BCS 0     |               |               | 80 MHz            |
|                               |             | 41D BCS 0                            |               |               | 5, 10, 15, 20 |                   |
| CA_41C-41C (0)                | Band 41     | 41C BCS 0                            |               | 41C BCS 0     |               | 80 MHz            |

**DL Intra-Band (Contiguous)**

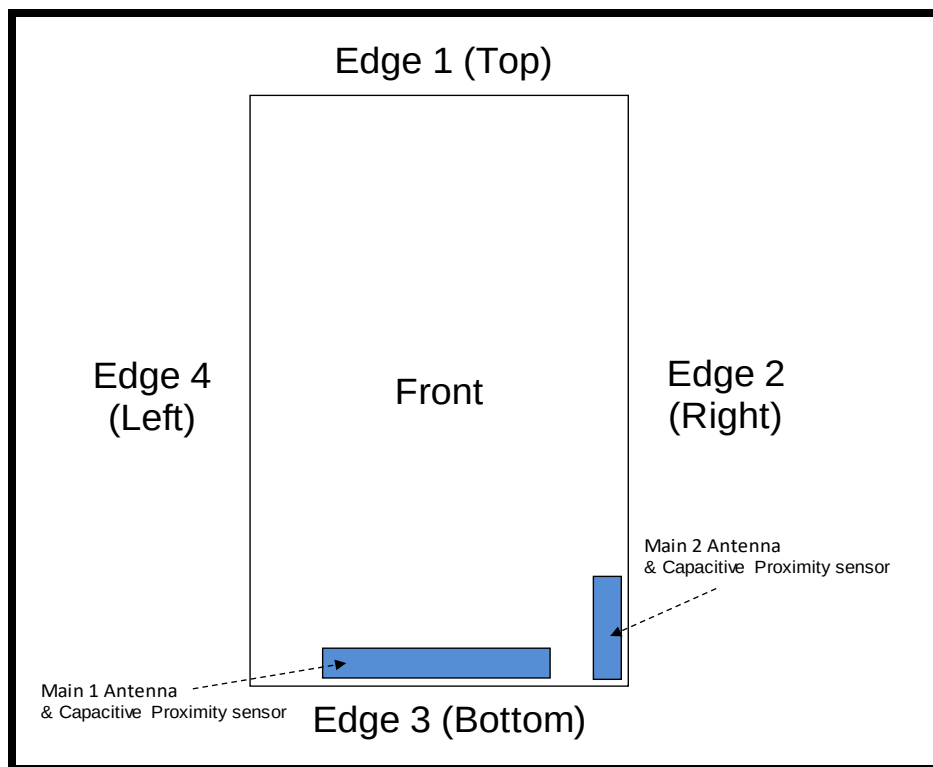
| E-UTRA CA configuration (BCS) | E-UTRA Band | Allowed Channel BW Per Carrier (MHz) |               |             |             | Max Aggregated BW |
|-------------------------------|-------------|--------------------------------------|---------------|-------------|-------------|-------------------|
|                               |             | 1st Carrier                          | 2nd Carrier   | 3rd Carrier | 4th Carrier |                   |
| CA_41C (0)(1)(2)(3)           | Band 41     | 10                                   | 20            |             |             | 40 MHz            |
|                               |             | 15                                   | 15,20         |             |             |                   |
|                               |             | 20                                   | 10,15,20      |             |             |                   |
|                               | Band 41     | 5,10                                 | 20            |             |             | 40 MHz            |
|                               |             | 15                                   | 15,20         |             |             |                   |
|                               |             | 20                                   | 5,10,15,20    |             |             |                   |
|                               | Band 41     | 10                                   | 15,20         |             |             | 40 MHz            |
|                               |             | 15                                   | 10,15,20      |             |             |                   |
|                               |             | 20                                   | 10,15,20      |             |             |                   |
|                               | Band 41     | 10                                   | 20            |             |             | 40 MHz            |
|                               |             | 20                                   | 20            |             |             |                   |
| CA_66B (0)                    | Band 66     | 5                                    | 5, 10, 15     |             |             | 20 MHz            |
|                               |             | 10                                   | 5, 10         |             |             |                   |
|                               |             | 15                                   | 5             |             |             |                   |
| CA_66C (0)                    | Band 66     | 5                                    | 20            |             |             | 40 MHz            |
|                               |             | 10                                   | 15, 20        |             |             |                   |
|                               |             | 15                                   | 10, 15, 20    |             |             |                   |
|                               |             | 20                                   | 5, 10, 15, 20 |             |             |                   |
| CA_41E (0)                    | Band 41     | 15,20                                | 15,20         | 15,20       | 20          | 80 MHz            |

**Note(s):**

1. For supported channels, please refer to §6.5.
2. This device supports DL 4X4 MIMO for LTE Band 4, 66. Please refer to Sec.9.3.1 for detailed LTE CA combination with 4X4 DL MIMO.

## 6.8. Proximity Sensor feature

The DUT has two proximity sensors to reduce the output power. The position of the sensors and antennas are as shown in the graphic.

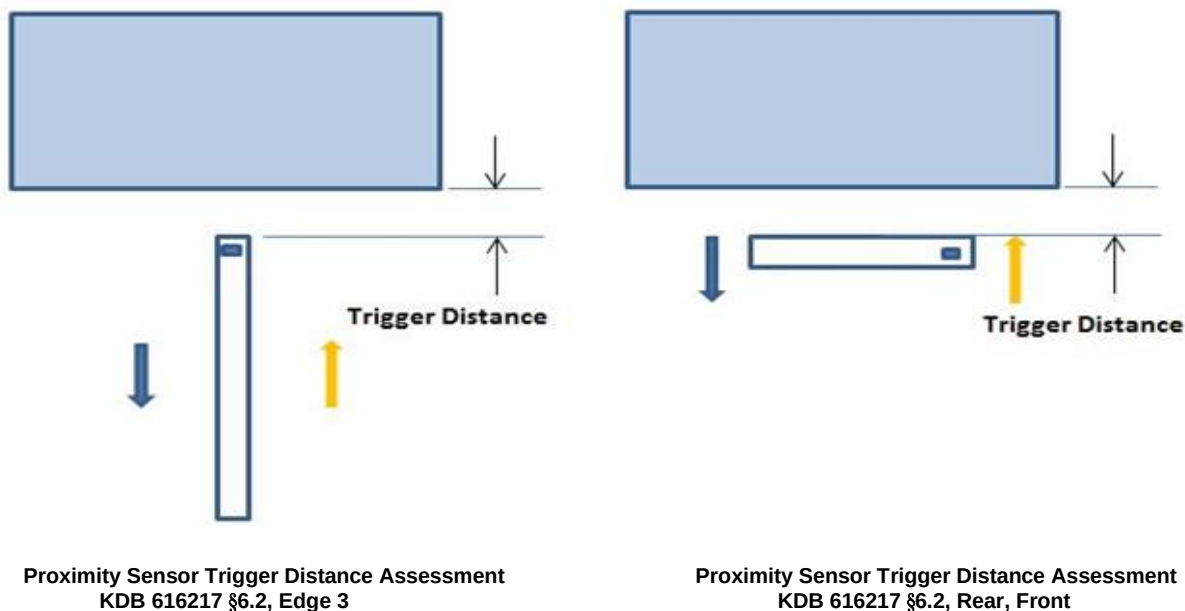


### 6.8.1. Proximity Sensor Triggering Distance (KDB 616217 §6.2)

Rear, Front and Edge 3 of the DUT was placed directly below the flat phantom. The DUT was moved toward the phantom in accordance with the steps outlined in KDB 616217 §6.2 to determine the trigger distance for enabling power reduction. The DUT was moved away from the phantom to determine the trigger distance for resuming full power.

The DUT featured a visual indicator on its display that showed the status of the proximity sensor (Triggered or not triggered). This was used to determine the status of the sensor during the proximity sensor assessment as monitoring the output power directly was not practical without affecting the measurement.

It was confirmed separately that the output power was altered according to the proximity sensor status indication. This was achieved by observing the proximity sensor status at the same time as monitoring the conducted power. Section 9 contains both the full and reduced conducted power measurements.



#### LEGEND

- Direction of DUT travel for determination of power reduction triggering point
- Direction of DUT travel for determination of full power resumption triggering point

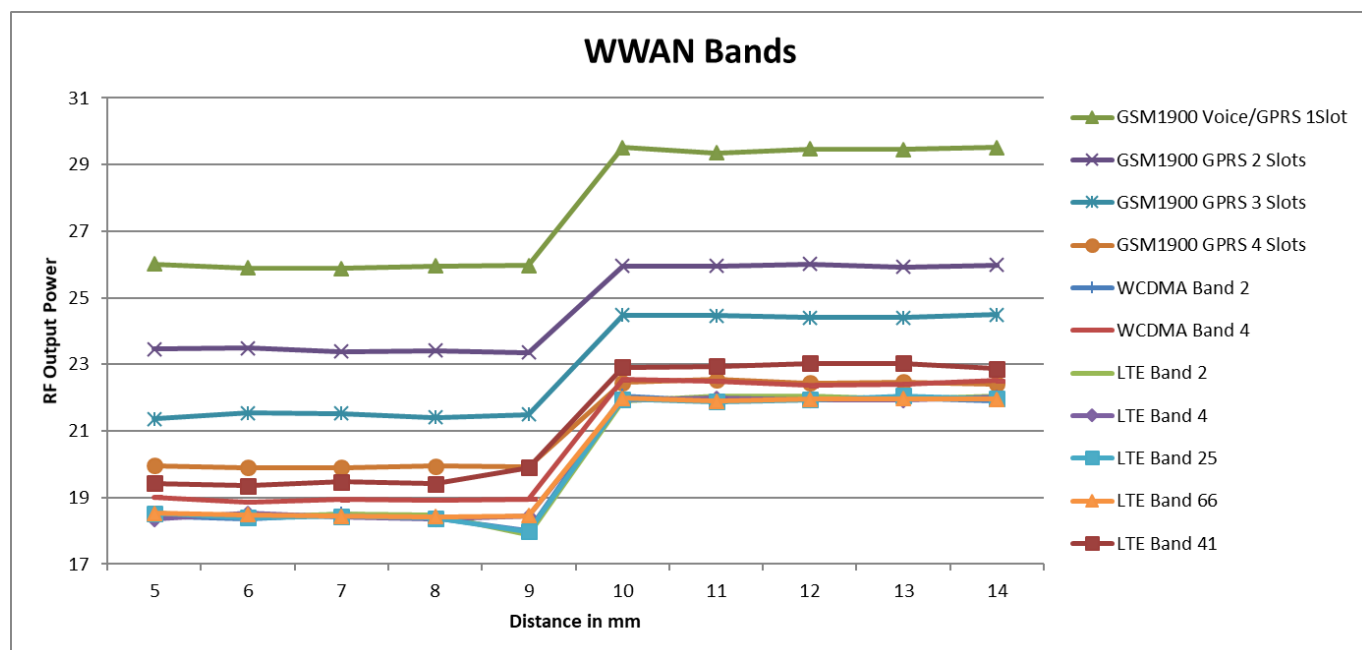
### Summary of Trigger Distances

| Tissue simulating liquid | Antenna     | Trigger distance – Rear |                     | Trigger distance - Front |                     | Trigger distance – Edge 3 |                     |
|--------------------------|-------------|-------------------------|---------------------|--------------------------|---------------------|---------------------------|---------------------|
|                          |             | Moving toward phantom   | Moving from phantom | Moving toward phantom    | Moving from phantom | Moving toward phantom     | Moving from phantom |
| 1750 Head                | Main 1 Ant. | 9 mm                    | 9 mm                | 8 mm                     | 8 mm                | 12 mm                     | 12 mm               |
| 1900 Head                | Main 1 Ant. | 9 mm                    | 9 mm                | 8 mm                     | 8 mm                | 12 mm                     | 12 mm               |
| 2600 Head                | Main 2 Ant. | 9 mm                    | 9 mm                | 8 mm                     | 8 mm                | 12 mm                     | 12 mm               |

**Proximity Sensor Triggering Distance Measurement Results****WWAN Bands**

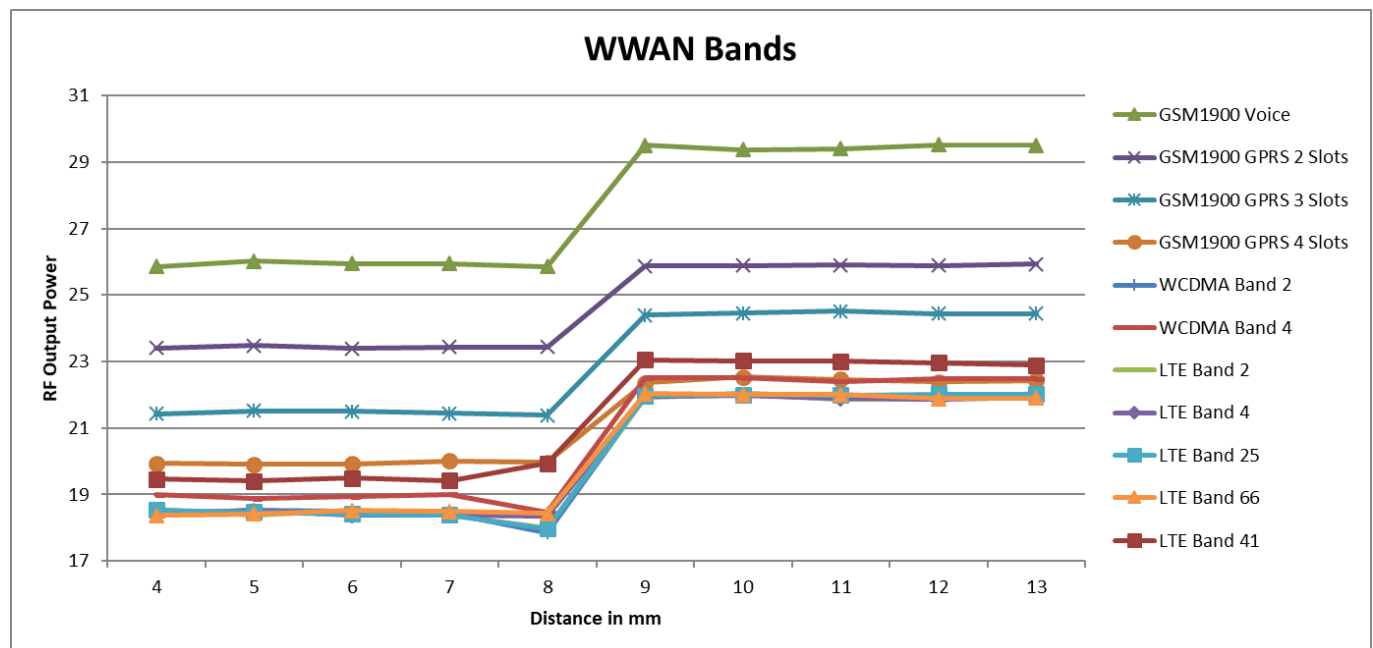
Rear, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

| Distance to DUT vs. Output Power in dBm |      |      |      |      |      |      |      |      |      |      |
|-----------------------------------------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm)                           | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   |
| GSM1900 Voice/GPRS 1Slot                | 26.0 | 25.9 | 25.9 | 26.0 | 26.0 | 29.5 | 29.4 | 29.5 | 29.5 | 29.5 |
| GSM1900 GPRS 2 Slots                    | 23.5 | 23.5 | 23.4 | 23.4 | 23.4 | 26.0 | 26.0 | 26.0 | 25.9 | 26.0 |
| GSM1900 GPRS 3 Slots                    | 21.4 | 21.5 | 21.5 | 21.4 | 21.5 | 24.5 | 24.5 | 24.4 | 24.4 | 24.5 |
| GSM1900 GPRS 4 Slots                    | 20.0 | 19.9 | 19.9 | 19.9 | 19.9 | 22.5 | 22.5 | 22.4 | 22.5 | 22.4 |
| WCDMA Band 2                            | 18.5 | 18.4 | 18.5 | 18.4 | 18.0 | 22.1 | 21.9 | 22.0 | 22.0 | 21.9 |
| WCDMA Band 4                            | 19.0 | 18.9 | 18.9 | 18.9 | 19.0 | 22.6 | 22.5 | 22.4 | 22.4 | 22.5 |
| LTE Band 2                              | 18.5 | 18.4 | 18.5 | 18.5 | 17.9 | 21.9 | 22.0 | 22.0 | 22.0 | 22.0 |
| LTE Band 4                              | 18.4 | 18.5 | 18.4 | 18.4 | 18.4 | 21.9 | 22.0 | 21.9 | 21.9 | 22.0 |
| LTE Band 25                             | 18.5 | 18.4 | 18.4 | 18.4 | 18.0 | 22.0 | 21.9 | 21.9 | 22.1 | 22.0 |
| LTE Band 66                             | 18.5 | 18.5 | 18.4 | 18.4 | 18.5 | 22.0 | 21.9 | 22.0 | 22.0 | 22.0 |
| LTE Band 41                             | 19.4 | 19.4 | 19.5 | 19.4 | 19.9 | 22.9 | 23.0 | 23.0 | 23.0 | 22.9 |



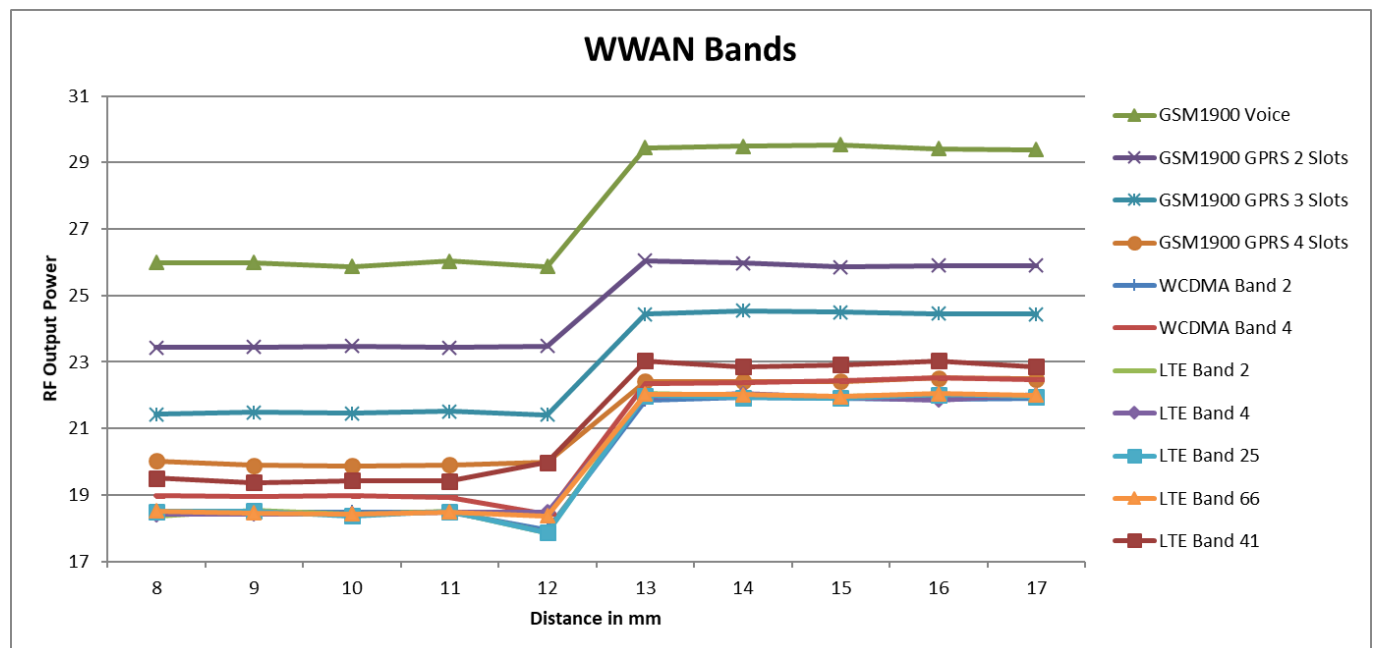
## Front, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

| Distance to DUT vs. Output Power in dBm |      |      |      |      |      |      |      |      |      |      |
|-----------------------------------------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm)                           | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   |
| GSM1900 Voice                           | 25.9 | 26.0 | 26.0 | 26.0 | 25.9 | 29.5 | 29.4 | 29.4 | 29.5 | 29.5 |
| GSM1900 GPRS 2 Slots                    | 23.4 | 23.5 | 23.4 | 23.4 | 23.4 | 25.9 | 25.9 | 25.9 | 25.9 | 25.9 |
| GSM1900 GPRS 3 Slots                    | 21.4 | 21.5 | 21.5 | 21.4 | 21.4 | 24.4 | 24.5 | 24.5 | 24.4 | 24.4 |
| GSM1900 GPRS 4 Slots                    | 19.9 | 19.9 | 19.9 | 20.0 | 20.0 | 22.4 | 22.5 | 22.5 | 22.4 | 22.4 |
| WCDMA Band 2                            | 18.4 | 18.5 | 18.5 | 18.4 | 17.9 | 22.0 | 22.0 | 22.0 | 21.9 | 22.0 |
| WCDMA Band 4                            | 19.0 | 18.9 | 18.9 | 19.0 | 18.5 | 22.5 | 22.5 | 22.4 | 22.5 | 22.5 |
| LTE Band 2                              | 18.5 | 18.4 | 18.5 | 18.4 | 18.0 | 21.9 | 22.0 | 21.9 | 21.9 | 21.9 |
| LTE Band 4                              | 18.4 | 18.5 | 18.4 | 18.4 | 18.4 | 21.9 | 22.0 | 21.9 | 21.9 | 21.9 |
| LTE Band 25                             | 18.5 | 18.5 | 18.4 | 18.4 | 18.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| LTE Band 66                             | 18.4 | 18.4 | 18.5 | 18.5 | 18.4 | 22.0 | 22.0 | 22.0 | 21.9 | 21.9 |
| LTE Band 41                             | 19.5 | 19.4 | 19.5 | 19.4 | 19.9 | 23.1 | 23.0 | 23.0 | 23.0 | 22.9 |



## Edge 3, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

| Distance to DUT vs. Output Power in dBm |      |      |      |      |      |      |      |      |      |      |
|-----------------------------------------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm)                           | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   |
| GSM1900 Voice                           | 26.0 | 26.0 | 25.9 | 26.0 | 25.9 | 29.4 | 29.5 | 29.5 | 29.4 | 29.4 |
| GSM1900 GPRS 2 Slots                    | 23.4 | 23.5 | 23.5 | 23.4 | 23.5 | 26.1 | 26.0 | 25.9 | 25.9 | 25.9 |
| GSM1900 GPRS 3 Slots                    | 21.4 | 21.5 | 21.5 | 21.5 | 21.4 | 24.4 | 24.5 | 24.5 | 24.5 | 24.4 |
| GSM1900 GPRS 4 Slots                    | 20.0 | 19.9 | 19.9 | 19.9 | 20.0 | 22.4 | 22.4 | 22.4 | 22.5 | 22.5 |
| WCDMA Band 2                            | 18.5 | 18.5 | 18.5 | 18.5 | 18.0 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 |
| WCDMA Band 4                            | 19.0 | 19.0 | 19.0 | 18.9 | 18.4 | 22.4 | 22.4 | 22.4 | 22.5 | 22.5 |
| LTE Band 2                              | 18.4 | 18.5 | 18.4 | 18.5 | 17.9 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| LTE Band 4                              | 18.4 | 18.4 | 18.4 | 18.5 | 18.5 | 21.9 | 22.0 | 21.9 | 21.9 | 22.0 |
| LTE Band 25                             | 18.5 | 18.5 | 18.4 | 18.5 | 17.9 | 22.0 | 21.9 | 21.9 | 22.0 | 22.0 |
| LTE Band 66                             | 18.5 | 18.5 | 18.4 | 18.5 | 18.4 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| LTE Band 41                             | 19.5 | 19.4 | 19.4 | 19.4 | 20.0 | 23.0 | 22.9 | 22.9 | 23.0 | 22.9 |



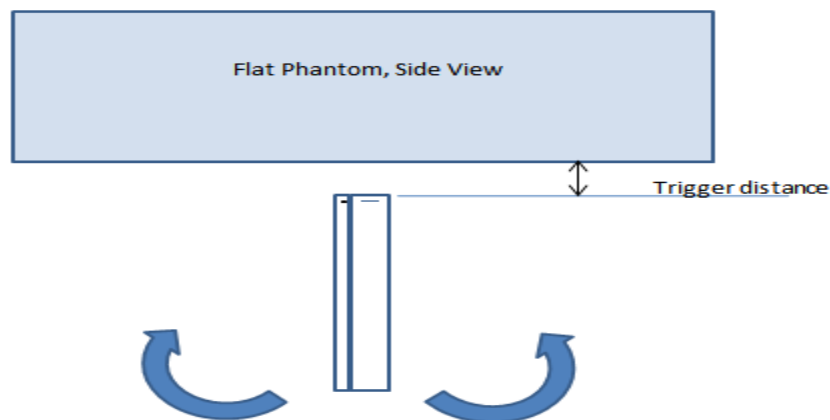
### 6.8.2. Proximity Sensor Coverage (KDB 616217 §6.3)

As there is no spatial offset between the antenna and the proximity sensor element, proximity sensor coverage did not need to be assessed.

### 6.8.3. Proximity Sensor Tilt Angle Assessment (KDB 616217 §6.4)

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Edge 3 parallel to the base of the flat phantom for each band.

The EUT was rotated about Edge 3 for angles up to  $\pm 45^\circ$ . If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up to  $\pm 45^\circ$ .



Proximity sensor tilt angle assessment (Edge 3) KDB 616217 §6.4

#### Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering (Edge 3)

| Band (MHz) | Minimum trigger distance measured according to KDB 616217 §6.2 | Minimum distance at which power reduction was maintained over $\pm 45^\circ$ | Power reduction status |      |      |      |      |    |     |     |     |     |     |
|------------|----------------------------------------------------------------|------------------------------------------------------------------------------|------------------------|------|------|------|------|----|-----|-----|-----|-----|-----|
|            |                                                                |                                                                              | -45°                   | -40° | -30° | -20° | -10° | 0° | 10° | 20° | 30° | 40° | 45° |
| 1750       | 12 mm                                                          | 12 mm                                                                        | On                     | On   | On   | On   | On   | On | On  | On  | On  | On  | On  |
| 1900       | 12 mm                                                          | 12 mm                                                                        | On                     | On   | On   | On   | On   | On | On  | On  | On  | On  | On  |
| 2600       | 12 mm                                                          | 12 mm                                                                        | On                     | On   | On   | On   | On   | On | On  | On  | On  | On  | On  |

### 6.8.4. Resulting test positions for SAR measurements

| Wireless technologies          | DUT Position | §6.2 Triggering Distance | §6.3 Coverage | §6.4 Tilt Angle | Worst case distance for SAR |
|--------------------------------|--------------|--------------------------|---------------|-----------------|-----------------------------|
| WWAN (Main 1 Ant & Main 2 Ant) | Rear         | 9 mm                     | N/A           | N/A             | 8 mm                        |
|                                | Front        | 8 mm                     | N/A           | N/A             | 7 mm                        |
|                                | Edge 3       | 12 mm                    | N/A           | 12 mm           | 11 mm                       |

## 7. RF Exposure Conditions (Test Configurations)

Refer to Appendix A for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

| Wireless technologies   | RF Exposure Conditions | Antennaa                   | DUT-to-User Separation | Test Position    | Antenna-to-edge/surface | SAR Required | Note |
|-------------------------|------------------------|----------------------------|------------------------|------------------|-------------------------|--------------|------|
| WWAN                    | Head                   | Main 1 Ant. & Main 2 Ant.  | 0 mm                   | Left Touch       | N/A                     | Yes          |      |
|                         |                        |                            |                        | Left Tilt (15°)  | N/A                     | Yes          |      |
|                         |                        |                            |                        | Right Touch      | N/A                     | Yes          |      |
|                         |                        |                            |                        | Right Tilt (15°) | N/A                     | Yes          |      |
|                         | Body                   | Main 1 Ant. & Main 2 Ant.  | 15 mm                  | Rear             | N/A                     | Yes          |      |
|                         |                        |                            |                        | Front            | N/A                     | Yes          |      |
|                         | Hotspot                | Main 1 Ant.                | 10 mm                  | Rear             | < 25 mm                 | Yes          |      |
|                         |                        |                            |                        | Front            | < 25 mm                 | Yes          |      |
|                         |                        |                            |                        | Edge 1 (Top)     | > 25 mm                 | No           | 1    |
|                         |                        |                            |                        | Edge 2 (Right)   | < 25 mm                 | Yes          |      |
|                         |                        |                            |                        | Edge 3 (Bottom)  | < 25 mm                 | Yes          |      |
|                         |                        |                            |                        | Edge 4 (Left)    | < 25 mm                 | Yes          |      |
|                         | Hotspot                | Main 2 Ant.                | 10 mm                  | Rear             | < 25 mm                 | Yes          |      |
|                         |                        |                            |                        | Front            | < 25 mm                 | Yes          |      |
|                         |                        |                            |                        | Edge 1 (Top)     | > 25 mm                 | No           | 1    |
|                         |                        |                            |                        | Edge 2 (Right)   | < 25 mm                 | Yes          |      |
|                         |                        |                            |                        | Edge 3 (Bottom)  | < 25 mm                 | Yes          |      |
|                         |                        |                            |                        | Edge 4 (Left)    | > 25 mm                 | No           | 1    |
|                         | Product Specific 10-g  | Main 1 Ant. & Main 2 Ant.  | 0 mm                   | Rear             | Refer to notes 2 & 3    |              |      |
|                         |                        |                            |                        | Front            |                         |              |      |
|                         |                        |                            |                        | Edge 1 (Top)     |                         |              |      |
|                         |                        |                            |                        | Edge 2 (Right)   |                         |              |      |
| Edge 3 (Bottom)         |                        |                            |                        |                  |                         |              |      |
| Edge 4 (Left)           |                        |                            |                        |                  |                         |              |      |
| 2.4GHz WLAN & 5GHz WLAN | Head                   | WiFi/BT Ant.1 & WiFi Ant.2 | 0 mm                   | Left Touch       | N/A                     | Yes          |      |
|                         |                        |                            |                        | Left Tilt (15°)  | N/A                     | Yes          |      |
|                         |                        |                            |                        | Right Touch      | N/A                     | Yes          |      |
|                         |                        |                            |                        | Right Tilt (15°) | N/A                     | Yes          |      |
|                         | Body                   |                            | 15 mm                  | Rear             | N/A                     | Yes          |      |
|                         |                        |                            |                        | Front            | N/A                     | Yes          |      |
|                         | Hotspot                |                            | 10 mm                  | Rear             | < 25 mm                 | Yes          |      |
|                         |                        |                            |                        | Front            | < 25 mm                 | Yes          |      |
|                         |                        |                            |                        | Edge 1 (Top)     | < 25 mm                 | Yes          |      |
|                         |                        |                            |                        | Edge 2 (Right)   | > 25 mm                 | No           | 1    |
|                         |                        |                            |                        | Edge 3 (Bottom)  | > 25 mm                 | No           | 1    |
|                         |                        |                            |                        | Edge 4 (Left)    | < 25 mm                 | Yes          |      |
|                         | Product Specific 10-g  |                            | 0 mm                   | Rear             | Refer to notes 2 & 4    |              |      |
|                         |                        |                            |                        | Front            |                         |              |      |
| Edge 1 (Top)            |                        |                            |                        |                  |                         |              |      |
| Edge 2 (Right)          |                        |                            |                        |                  |                         |              |      |
| Edge 3 (Bottom)         |                        |                            |                        |                  |                         |              |      |
| Edge 4 (Left)           |                        |                            |                        |                  |                         |              |      |

### Notes:

- SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.
- For Phablet devices: When hotspot mode applies, Product specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.
- For Phablet devices: When hotspot mode applies and power reduction applies to hotspot mode, Product specific 10-g SAR is required for each test position that has an adjusted SAR to maximum power that is > 1.2 W/kg.
- For Phablet devices: When hotspot mode is not supported, Product specific 10-g SAR is required for all surfaces and edges with an antenna located at ≤ 25mm from that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions.

## 8. Dielectric Property Measurements & System Check

### 8.1. Dielectric Property Measurements

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within  $\pm 2^\circ\text{C}$  of the temperature when the tissue parameters are characterized.

The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

#### Tissue Dielectric Parameters

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

| Target Frequency (MHz) | Head         |                | Body         |                |
|------------------------|--------------|----------------|--------------|----------------|
|                        | $\epsilon_r$ | $\sigma$ (S/m) | $\epsilon_r$ | $\sigma$ (S/m) |
| 150                    | 52.3         | 0.76           | 61.9         | 0.80           |
| 300                    | 45.3         | 0.87           | 58.2         | 0.92           |
| 450                    | 43.5         | 0.87           | 56.7         | 0.94           |
| 835                    | 41.5         | 0.90           | 55.2         | 0.97           |
| 900                    | 41.5         | 0.97           | 55.0         | 1.05           |
| 915                    | 41.5         | 0.98           | 55.0         | 1.06           |
| 1450                   | 40.5         | 1.20           | 54.0         | 1.30           |
| 1610                   | 40.3         | 1.29           | 53.8         | 1.40           |
| 1800 – 2000            | 40.0         | 1.40           | 53.3         | 1.52           |
| 2450                   | 39.2         | 1.80           | 52.7         | 1.95           |
| 3000                   | 38.5         | 2.40           | 52.0         | 2.73           |
| 5000                   | 36.2         | 4.45           | 49.3         | 5.07           |
| 5100                   | 36.1         | 4.55           | 49.1         | 5.18           |
| 5200                   | 36.0         | 4.66           | 49.0         | 5.30           |
| 5300                   | 35.9         | 4.76           | 48.9         | 5.42           |
| 5400                   | 35.8         | 4.86           | 48.7         | 5.53           |
| 5500                   | 35.6         | 4.96           | 48.6         | 5.65           |
| 5600                   | 35.5         | 5.07           | 48.5         | 5.77           |
| 5700                   | 35.4         | 5.17           | 48.3         | 5.88           |
| 5800                   | 35.3         | 5.27           | 48.2         | 6.00           |

SAR test were performed in All RF exposure conditions using Head tissue according to TCB workshop note of April. 2019.

#### IEEE Std 1528-2013

Refer to Table 3 within the IEEE Std 1528-2013

**Dielectric Property Measurements Results:****SAR 1 Room**

| Date      | Freq. (MHz) | Liquid Parameters |         |                                         | Measured | Target | Delta (%) | Limit ±(%) |
|-----------|-------------|-------------------|---------|-----------------------------------------|----------|--------|-----------|------------|
| 6-2-2020  | Head 5250   | e'                | 36.6600 | Relative Permittivity ( $\epsilon_r$ ): | 36.66    | 35.93  | 2.02      | 5          |
|           |             | e''               | 16.3000 | Conductivity ( $\sigma$ ):              | 4.76     | 4.70   | 1.19      | 5          |
|           | Head 5260   | e'                | 36.6400 | Relative Permittivity ( $\epsilon_r$ ): | 36.64    | 35.92  | 2.00      | 5          |
|           |             | e''               | 16.3200 | Conductivity ( $\sigma$ ):              | 4.77     | 4.71   | 1.29      | 5          |
|           | Head 5600   | e'                | 36.2800 | Relative Permittivity ( $\epsilon_r$ ): | 36.28    | 35.53  | 2.10      | 5          |
|           |             | e''               | 16.6400 | Conductivity ( $\sigma$ ):              | 5.18     | 5.06   | 2.39      | 5          |
|           | Head 5750   | e'                | 36.1600 | Relative Permittivity ( $\epsilon_r$ ): | 36.16    | 35.36  | 2.25      | 5          |
|           |             | e''               | 16.8000 | Conductivity ( $\sigma$ ):              | 5.37     | 5.21   | 3.02      | 5          |
|           | Head 5825   | e'                | 36.1400 | Relative Permittivity ( $\epsilon_r$ ): | 36.14    | 35.30  | 2.38      | 5          |
|           |             | e''               | 16.9000 | Conductivity ( $\sigma$ ):              | 5.47     | 5.27   | 3.87      | 5          |
| 6-4-2020  | Head 2450   | e'                | 38.5600 | Relative Permittivity ( $\epsilon_r$ ): | 38.56    | 39.20  | -1.63     | 5          |
|           |             | e''               | 13.4600 | Conductivity ( $\sigma$ ):              | 1.83     | 1.80   | 1.87      | 5          |
|           | Head 2400   | e'                | 38.7400 | Relative Permittivity ( $\epsilon_r$ ): | 38.74    | 39.30  | -1.42     | 5          |
|           |             | e''               | 13.3100 | Conductivity ( $\sigma$ ):              | 1.78     | 1.75   | 1.40      | 5          |
|           | Head 2480   | e'                | 38.4400 | Relative Permittivity ( $\epsilon_r$ ): | 38.44    | 39.16  | -1.84     | 5          |
|           |             | e''               | 13.5400 | Conductivity ( $\sigma$ ):              | 1.87     | 1.83   | 1.89      | 5          |
| 6-11-2020 | Head 5250   | e'                | 36.7400 | Relative Permittivity ( $\epsilon_r$ ): | 36.74    | 35.93  | 2.25      | 5          |
|           |             | e''               | 15.6900 | Conductivity ( $\sigma$ ):              | 4.58     | 4.70   | -2.59     | 5          |
|           | Head 5260   | e'                | 36.7100 | Relative Permittivity ( $\epsilon_r$ ): | 36.71    | 35.92  | 2.19      | 5          |
|           |             | e''               | 15.7000 | Conductivity ( $\sigma$ ):              | 4.59     | 4.71   | -2.56     | 5          |
|           | Head 5600   | e'                | 36.2100 | Relative Permittivity ( $\epsilon_r$ ): | 36.21    | 35.53  | 1.90      | 5          |
|           |             | e''               | 15.9200 | Conductivity ( $\sigma$ ):              | 4.96     | 5.06   | -2.04     | 5          |
|           | Head 5750   | e'                | 35.9900 | Relative Permittivity ( $\epsilon_r$ ): | 35.99    | 35.36  | 1.77      | 5          |
|           |             | e''               | 16.0200 | Conductivity ( $\sigma$ ):              | 5.12     | 5.21   | -1.76     | 5          |
|           | Head 5825   | e'                | 35.8800 | Relative Permittivity ( $\epsilon_r$ ): | 35.88    | 35.30  | 1.64      | 5          |
|           |             | e''               | 16.0600 | Conductivity ( $\sigma$ ):              | 5.20     | 5.27   | -1.30     | 5          |
| 6-18-2020 | Head 5250   | e'                | 35.5300 | Relative Permittivity ( $\epsilon_r$ ): | 35.53    | 35.93  | -1.12     | 5          |
|           |             | e''               | 16.4000 | Conductivity ( $\sigma$ ):              | 4.79     | 4.70   | 1.81      | 5          |
|           | Head 5260   | e'                | 35.5000 | Relative Permittivity ( $\epsilon_r$ ): | 35.50    | 35.92  | -1.17     | 5          |
|           |             | e''               | 16.4100 | Conductivity ( $\sigma$ ):              | 4.80     | 4.71   | 1.85      | 5          |
|           | Head 5600   | e'                | 34.9200 | Relative Permittivity ( $\epsilon_r$ ): | 34.92    | 35.53  | -1.73     | 5          |
|           |             | e''               | 16.6100 | Conductivity ( $\sigma$ ):              | 5.17     | 5.06   | 2.21      | 5          |
|           | Head 5750   | e'                | 34.6800 | Relative Permittivity ( $\epsilon_r$ ): | 34.68    | 35.36  | -1.93     | 5          |
|           |             | e''               | 16.7100 | Conductivity ( $\sigma$ ):              | 5.34     | 5.21   | 2.47      | 5          |
|           | Head 5825   | e'                | 34.5400 | Relative Permittivity ( $\epsilon_r$ ): | 34.54    | 35.30  | -2.15     | 5          |
|           |             | e''               | 16.7400 | Conductivity ( $\sigma$ ):              | 5.42     | 5.27   | 2.88      | 5          |

**SAR 3 Room**

| Date      | Freq. (MHz) | Liquid Parameters |         |                                         | Measured | Target | Delta (%) | Limit ±(%) |
|-----------|-------------|-------------------|---------|-----------------------------------------|----------|--------|-----------|------------|
| 5-10-2020 | Head 750    | e'                | 42.5600 | Relative Permittivity ( $\epsilon_r$ ): | 42.56    | 41.96  | 1.43      | 5          |
|           |             | e''               | 21.4400 | Conductivity ( $\sigma$ ):              | 0.89     | 0.89   | 0.11      | 5          |
|           | Head 700    | e'                | 42.6700 | Relative Permittivity ( $\epsilon_r$ ): | 42.67    | 42.22  | 1.07      | 5          |
|           |             | e''               | 22.5200 | Conductivity ( $\sigma$ ):              | 0.88     | 0.89   | -1.43     | 5          |
|           | Head 790    | e'                | 42.4600 | Relative Permittivity ( $\epsilon_r$ ): | 42.46    | 41.76  | 1.68      | 5          |
|           |             | e''               | 20.6400 | Conductivity ( $\sigma$ ):              | 0.91     | 0.90   | 1.17      | 5          |
| 5-10-2020 | Head 835    | e'                | 42.3700 | Relative Permittivity ( $\epsilon_r$ ): | 42.37    | 41.50  | 2.10      | 5          |
|           |             | e''               | 19.8400 | Conductivity ( $\sigma$ ):              | 0.92     | 0.90   | 2.35      | 5          |
|           | Head 820    | e'                | 42.3900 | Relative Permittivity ( $\epsilon_r$ ): | 42.39    | 41.60  | 1.89      | 5          |
|           |             | e''               | 20.1000 | Conductivity ( $\sigma$ ):              | 0.92     | 0.90   | 2.00      | 5          |
|           | Head 850    | e'                | 42.3600 | Relative Permittivity ( $\epsilon_r$ ): | 42.36    | 41.50  | 2.07      | 5          |
|           |             | e''               | 19.5900 | Conductivity ( $\sigma$ ):              | 0.93     | 0.92   | 1.19      | 5          |
| 5-12-2020 | Head 1750   | e'                | 39.3200 | Relative Permittivity ( $\epsilon_r$ ): | 39.32    | 40.08  | -1.91     | 5          |
|           |             | e''               | 13.4900 | Conductivity ( $\sigma$ ):              | 1.31     | 1.37   | -4.11     | 5          |
|           | Head 1710   | e'                | 39.3500 | Relative Permittivity ( $\epsilon_r$ ): | 39.35    | 40.15  | -1.98     | 5          |
|           |             | e''               | 13.6200 | Conductivity ( $\sigma$ ):              | 1.30     | 1.35   | -3.82     | 5          |
|           | Head 1755   | e'                | 39.3200 | Relative Permittivity ( $\epsilon_r$ ): | 39.32    | 40.08  | -1.89     | 5          |
|           |             | e''               | 13.4700 | Conductivity ( $\sigma$ ):              | 1.31     | 1.37   | -4.18     | 5          |

**SAR 3 Room (Continued)**

| Date      | Freq. (MHz) | Liquid Parameters |         |                                         | Measured | Target | Delta (%) | Limit ±(%) |
|-----------|-------------|-------------------|---------|-----------------------------------------|----------|--------|-----------|------------|
| 5-12-2020 | Head 1900   | e'                | 39.2100 | Relative Permittivity ( $\epsilon_r$ ): | 39.21    | 40.00  | -1.98     | 5          |
|           |             | e''               | 13.2500 | Conductivity ( $\sigma$ ):              | 1.40     | 1.40   | -0.01     | 5          |
|           | Head 1850   | e'                | 39.2400 | Relative Permittivity ( $\epsilon_r$ ): | 39.24    | 40.00  | -1.90     | 5          |
|           |             | e''               | 13.2900 | Conductivity ( $\sigma$ ):              | 1.37     | 1.40   | -2.35     | 5          |
|           | Head 1910   | e'                | 39.1900 | Relative Permittivity ( $\epsilon_r$ ): | 39.19    | 40.00  | -2.03     | 5          |
|           |             | e''               | 13.2500 | Conductivity ( $\sigma$ ):              | 1.41     | 1.40   | 0.51      | 5          |
| 5-17-2020 | Head 1750   | e'                | 38.8000 | Relative Permittivity ( $\epsilon_r$ ): | 38.80    | 40.08  | -3.20     | 5          |
|           |             | e''               | 13.7100 | Conductivity ( $\sigma$ ):              | 1.33     | 1.37   | -2.55     | 5          |
|           | Head 1710   | e'                | 38.8300 | Relative Permittivity ( $\epsilon_r$ ): | 38.83    | 40.15  | -3.28     | 5          |
|           |             | e''               | 13.8200 | Conductivity ( $\sigma$ ):              | 1.31     | 1.35   | -2.41     | 5          |
|           | Head 1755   | e'                | 38.8000 | Relative Permittivity ( $\epsilon_r$ ): | 38.80    | 40.08  | -3.19     | 5          |
|           |             | e''               | 13.6900 | Conductivity ( $\sigma$ ):              | 1.34     | 1.37   | -2.62     | 5          |
| 5-17-2020 | Head 1900   | e'                | 38.6500 | Relative Permittivity ( $\epsilon_r$ ): | 38.65    | 40.00  | -3.38     | 5          |
|           |             | e''               | 13.4500 | Conductivity ( $\sigma$ ):              | 1.42     | 1.40   | 1.50      | 5          |
|           | Head 1850   | e'                | 38.7200 | Relative Permittivity ( $\epsilon_r$ ): | 38.72    | 40.00  | -3.20     | 5          |
|           |             | e''               | 13.5400 | Conductivity ( $\sigma$ ):              | 1.39     | 1.40   | -0.51     | 5          |
|           | Head 1910   | e'                | 38.6300 | Relative Permittivity ( $\epsilon_r$ ): | 38.63    | 40.00  | -3.42     | 5          |
|           |             | e''               | 13.4400 | Conductivity ( $\sigma$ ):              | 1.43     | 1.40   | 1.95      | 5          |
| 5-17-2020 | Head 2600   | e'                | 37.7700 | Relative Permittivity ( $\epsilon_r$ ): | 37.77    | 39.01  | -3.18     | 5          |
|           |             | e''               | 13.2200 | Conductivity ( $\sigma$ ):              | 1.91     | 1.96   | -2.60     | 5          |
|           | Head 2500   | e'                | 37.9400 | Relative Permittivity ( $\epsilon_r$ ): | 37.94    | 39.14  | -3.06     | 5          |
|           |             | e''               | 13.2200 | Conductivity ( $\sigma$ ):              | 1.84     | 1.85   | -0.88     | 5          |
|           | Head 2700   | e'                | 37.6200 | Relative Permittivity ( $\epsilon_r$ ): | 37.62    | 38.88  | -3.25     | 5          |
|           |             | e''               | 13.2200 | Conductivity ( $\sigma$ ):              | 1.98     | 2.07   | -4.13     | 5          |
| 5-20-2020 | Head 1750   | e'                | 38.5600 | Relative Permittivity ( $\epsilon_r$ ): | 38.56    | 40.08  | -3.80     | 5          |
|           |             | e''               | 14.0500 | Conductivity ( $\sigma$ ):              | 1.37     | 1.37   | -0.13     | 5          |
|           | Head 1710   | e'                | 38.6200 | Relative Permittivity ( $\epsilon_r$ ): | 38.62    | 40.15  | -3.80     | 5          |
|           |             | e''               | 14.1100 | Conductivity ( $\sigma$ ):              | 1.34     | 1.35   | -0.36     | 5          |
|           | Head 1755   | e'                | 38.5600 | Relative Permittivity ( $\epsilon_r$ ): | 38.56    | 40.08  | -3.79     | 5          |
|           |             | e''               | 14.0400 | Conductivity ( $\sigma$ ):              | 1.37     | 1.37   | -0.13     | 5          |
| 5-20-2020 | Head 1900   | e'                | 38.2800 | Relative Permittivity ( $\epsilon_r$ ): | 38.28    | 40.00  | -4.30     | 5          |
|           |             | e''               | 13.7800 | Conductivity ( $\sigma$ ):              | 1.46     | 1.40   | 3.99      | 5          |
|           | Head 1850   | e'                | 38.3700 | Relative Permittivity ( $\epsilon_r$ ): | 38.37    | 40.00  | -4.08     | 5          |
|           |             | e''               | 13.8700 | Conductivity ( $\sigma$ ):              | 1.43     | 1.40   | 1.91      | 5          |
|           | Head 1910   | e'                | 38.2600 | Relative Permittivity ( $\epsilon_r$ ): | 38.26    | 40.00  | -4.35     | 5          |
|           |             | e''               | 13.7700 | Conductivity ( $\sigma$ ):              | 1.46     | 1.40   | 4.46      | 5          |
| 5-20-2020 | Head 2600   | e'                | 37.2400 | Relative Permittivity ( $\epsilon_r$ ): | 37.24    | 39.01  | -4.54     | 5          |
|           |             | e''               | 13.4400 | Conductivity ( $\sigma$ ):              | 1.94     | 1.96   | -0.98     | 5          |
|           | Head 2500   | e'                | 37.3700 | Relative Permittivity ( $\epsilon_r$ ): | 37.37    | 39.14  | -4.51     | 5          |
|           |             | e''               | 13.4000 | Conductivity ( $\sigma$ ):              | 1.86     | 1.85   | 0.47      | 5          |
|           | Head 2700   | e'                | 37.0600 | Relative Permittivity ( $\epsilon_r$ ): | 37.06    | 38.88  | -4.69     | 5          |
|           |             | e''               | 13.4800 | Conductivity ( $\sigma$ ):              | 2.02     | 2.07   | -2.25     | 5          |
| 5-24-2020 | Head 1900   | e'                | 38.7500 | Relative Permittivity ( $\epsilon_r$ ): | 38.75    | 40.00  | -3.13     | 5          |
|           |             | e''               | 13.7700 | Conductivity ( $\sigma$ ):              | 1.45     | 1.40   | 3.91      | 5          |
|           | Head 1850   | e'                | 38.8100 | Relative Permittivity ( $\epsilon_r$ ): | 38.81    | 40.00  | -2.97     | 5          |
|           |             | e''               | 13.7700 | Conductivity ( $\sigma$ ):              | 1.42     | 1.40   | 1.18      | 5          |
|           | Head 1910   | e'                | 38.7300 | Relative Permittivity ( $\epsilon_r$ ): | 38.73    | 40.00  | -3.18     | 5          |
|           |             | e''               | 13.7700 | Conductivity ( $\sigma$ ):              | 1.46     | 1.40   | 4.46      | 5          |
| 5-31-2020 | Head 1750   | e'                | 39.2300 | Relative Permittivity ( $\epsilon_r$ ): | 39.23    | 40.08  | -2.13     | 5          |
|           |             | e''               | 14.0900 | Conductivity ( $\sigma$ ):              | 1.37     | 1.37   | 0.15      | 5          |
|           | Head 1710   | e'                | 39.3100 | Relative Permittivity ( $\epsilon_r$ ): | 39.31    | 40.15  | -2.08     | 5          |
|           |             | e''               | 14.1900 | Conductivity ( $\sigma$ ):              | 1.35     | 1.35   | 0.21      | 5          |
|           | Head 1755   | e'                | 39.2200 | Relative Permittivity ( $\epsilon_r$ ): | 39.22    | 40.08  | -2.14     | 5          |
|           |             | e''               | 14.0700 | Conductivity ( $\sigma$ ):              | 1.37     | 1.37   | 0.09      | 5          |
| 6-1-2020  | Head 2600   | e'                | 39.3700 | Relative Permittivity ( $\epsilon_r$ ): | 39.37    | 39.01  | 0.92      | 5          |
|           |             | e''               | 13.6700 | Conductivity ( $\sigma$ ):              | 1.98     | 1.96   | 0.72      | 5          |
|           | Head 2500   | e'                | 39.5300 | Relative Permittivity ( $\epsilon_r$ ): | 39.53    | 39.14  | 1.00      | 5          |
|           |             | e''               | 13.6200 | Conductivity ( $\sigma$ ):              | 1.89     | 1.85   | 2.12      | 5          |
|           | Head 2700   | e'                | 39.1900 | Relative Permittivity ( $\epsilon_r$ ): | 39.19    | 38.88  | 0.79      | 5          |
|           |             | e''               | 13.7300 | Conductivity ( $\sigma$ ):              | 2.06     | 2.07   | -0.44     | 5          |

**SAR 3 Room (Continued)**

| Date      | Freq. (MHz) | Liquid Parameters |         |                                          | Measured | Target | Delta (%) | Limit ±(%) |
|-----------|-------------|-------------------|---------|------------------------------------------|----------|--------|-----------|------------|
| 6-7-2020  | Head 1750   | e'                | 40.2200 | Relative Permittivity (ε <sub>r</sub> ): | 40.22    | 40.08  | 0.34      | 5          |
|           |             | e''               | 13.9400 | Conductivity (σ):                        | 1.36     | 1.37   | -0.92     | 5          |
|           | Head 1710   | e'                | 40.2800 | Relative Permittivity (ε <sub>r</sub> ): | 40.28    | 40.15  | 0.33      | 5          |
|           |             | e''               | 14.0900 | Conductivity (σ):                        | 1.34     | 1.35   | -0.50     | 5          |
|           | Head 1755   | e'                | 40.2100 | Relative Permittivity (ε <sub>r</sub> ): | 40.21    | 40.08  | 0.33      | 5          |
|           |             | e''               | 13.9200 | Conductivity (σ):                        | 1.36     | 1.37   | -0.98     | 5          |
| 6-7-2020  | Head 1900   | e'                | 40.0500 | Relative Permittivity (ε <sub>r</sub> ): | 40.05    | 40.00  | 0.12      | 5          |
|           |             | e''               | 13.7600 | Conductivity (σ):                        | 1.45     | 1.40   | 3.83      | 5          |
|           | Head 1850   | e'                | 40.1400 | Relative Permittivity (ε <sub>r</sub> ): | 40.14    | 40.00  | 0.35      | 5          |
|           |             | e''               | 13.8600 | Conductivity (σ):                        | 1.43     | 1.40   | 1.84      | 5          |
|           | Head 1910   | e'                | 40.0300 | Relative Permittivity (ε <sub>r</sub> ): | 40.03    | 40.00  | 0.08      | 5          |
|           |             | e''               | 13.7600 | Conductivity (σ):                        | 1.46     | 1.40   | 4.38      | 5          |
| 6-10-2020 | Head 1750   | e'                | 40.5400 | Relative Permittivity (ε <sub>r</sub> ): | 40.54    | 40.08  | 1.14      | 5          |
|           |             | e''               | 14.0300 | Conductivity (σ):                        | 1.37     | 1.37   | -0.28     | 5          |
|           | Head 1710   | e'                | 40.6300 | Relative Permittivity (ε <sub>r</sub> ): | 40.63    | 40.15  | 1.21      | 5          |
|           |             | e''               | 14.0700 | Conductivity (σ):                        | 1.34     | 1.35   | -0.64     | 5          |
|           | Head 1755   | e'                | 40.5200 | Relative Permittivity (ε <sub>r</sub> ): | 40.52    | 40.08  | 1.11      | 5          |
|           |             | e''               | 14.0200 | Conductivity (σ):                        | 1.37     | 1.37   | -0.27     | 5          |
| 6-10-2020 | Head 1900   | e'                | 40.1700 | Relative Permittivity (ε <sub>r</sub> ): | 40.17    | 40.00  | 0.43      | 5          |
|           |             | e''               | 13.8100 | Conductivity (σ):                        | 1.46     | 1.40   | 4.21      | 5          |
|           | Head 1850   | e'                | 40.2900 | Relative Permittivity (ε <sub>r</sub> ): | 40.29    | 40.00  | 0.72      | 5          |
|           |             | e''               | 13.9000 | Conductivity (σ):                        | 1.43     | 1.40   | 2.13      | 5          |
|           | Head 1910   | e'                | 40.1400 | Relative Permittivity (ε <sub>r</sub> ): | 40.14    | 40.00  | 0.35      | 5          |
|           |             | e''               | 13.8000 | Conductivity (σ):                        | 1.47     | 1.40   | 4.68      | 5          |
| 6-14-2020 | Head 1750   | e'                | 39.7700 | Relative Permittivity (ε <sub>r</sub> ): | 39.77    | 40.08  | -0.78     | 5          |
|           |             | e''               | 13.9300 | Conductivity (σ):                        | 1.36     | 1.37   | -0.99     | 5          |
|           | Head 1710   | e'                | 39.8600 | Relative Permittivity (ε <sub>r</sub> ): | 39.86    | 40.15  | -0.71     | 5          |
|           |             | e''               | 14.0200 | Conductivity (σ):                        | 1.33     | 1.35   | -0.99     | 5          |
|           | Head 1755   | e'                | 39.7700 | Relative Permittivity (ε <sub>r</sub> ): | 39.77    | 40.08  | -0.77     | 5          |
|           |             | e''               | 13.9200 | Conductivity (σ):                        | 1.36     | 1.37   | -0.98     | 5          |
| 6-14-2020 | Head 2600   | e'                | 38.4100 | Relative Permittivity (ε <sub>r</sub> ): | 38.41    | 39.01  | -1.54     | 5          |
|           |             | e''               | 13.4100 | Conductivity (σ):                        | 1.94     | 1.96   | -1.20     | 5          |
|           | Head 2500   | e'                | 38.6400 | Relative Permittivity (ε <sub>r</sub> ): | 38.64    | 39.14  | -1.27     | 5          |
|           |             | e''               | 13.4400 | Conductivity (σ):                        | 1.87     | 1.85   | 0.77      | 5          |
|           | Head 2700   | e'                | 38.3000 | Relative Permittivity (ε <sub>r</sub> ): | 38.30    | 38.88  | -1.50     | 5          |
|           |             | e''               | 13.3500 | Conductivity (σ):                        | 2.00     | 2.07   | -3.19     | 5          |
| 6-21-2020 | Head 1750   | e'                | 41.3100 | Relative Permittivity (ε <sub>r</sub> ): | 41.31    | 40.08  | 3.06      | 5          |
|           |             | e''               | 13.7600 | Conductivity (σ):                        | 1.34     | 1.37   | -2.20     | 5          |
|           | Head 1710   | e'                | 41.3800 | Relative Permittivity (ε <sub>r</sub> ): | 41.38    | 40.15  | 3.07      | 5          |
|           |             | e''               | 13.9800 | Conductivity (σ):                        | 1.33     | 1.35   | -1.28     | 5          |
|           | Head 1755   | e'                | 41.3100 | Relative Permittivity (ε <sub>r</sub> ): | 41.31    | 40.08  | 3.08      | 5          |
|           |             | e''               | 13.7400 | Conductivity (σ):                        | 1.34     | 1.37   | -2.26     | 5          |
| 6-21-2020 | Head 1900   | e'                | 41.1600 | Relative Permittivity (ε <sub>r</sub> ): | 41.16    | 40.00  | 2.90      | 5          |
|           |             | e''               | 13.6100 | Conductivity (σ):                        | 1.44     | 1.40   | 2.70      | 5          |
|           | Head 1850   | e'                | 41.2700 | Relative Permittivity (ε <sub>r</sub> ): | 41.27    | 40.00  | 3.18      | 5          |
|           |             | e''               | 13.7200 | Conductivity (σ):                        | 1.41     | 1.40   | 0.81      | 5          |
|           | Head 1910   | e'                | 41.1500 | Relative Permittivity (ε <sub>r</sub> ): | 41.15    | 40.00  | 2.88      | 5          |
|           |             | e''               | 13.6300 | Conductivity (σ):                        | 1.45     | 1.40   | 3.40      | 5          |

**SAR 4 Room**

| Date      | Freq. (MHz) | Liquid Parameters |         |                                         | Measured | Target | Delta (%) | Limit ±(%) |
|-----------|-------------|-------------------|---------|-----------------------------------------|----------|--------|-----------|------------|
| 5-17-2020 | Head 1900   | e'                | 39.7400 | Relative Permittivity ( $\epsilon_r$ ): | 39.74    | 40.00  | -0.65     | 5          |
|           |             | e''               | 13.5000 | Conductivity ( $\sigma$ ):              | 1.43     | 1.40   | 1.87      | 5          |
|           | Head 1850   | e'                | 39.8200 | Relative Permittivity ( $\epsilon_r$ ): | 39.82    | 40.00  | -0.45     | 5          |
|           |             | e''               | 13.5900 | Conductivity ( $\sigma$ ):              | 1.40     | 1.40   | -0.15     | 5          |
|           | Head 1910   | e'                | 39.7200 | Relative Permittivity ( $\epsilon_r$ ): | 39.72    | 40.00  | -0.70     | 5          |
|           |             | e''               | 13.4900 | Conductivity ( $\sigma$ ):              | 1.43     | 1.40   | 2.33      | 5          |
| 5-17-2020 | Head 2450   | e'                | 39.0100 | Relative Permittivity ( $\epsilon_r$ ): | 39.01    | 39.20  | -0.48     | 5          |
|           |             | e''               | 13.1300 | Conductivity ( $\sigma$ ):              | 1.79     | 1.80   | -0.63     | 5          |
|           | Head 2400   | e'                | 39.0100 | Relative Permittivity ( $\epsilon_r$ ): | 39.01    | 39.30  | -0.73     | 5          |
|           |             | e''               | 13.1300 | Conductivity ( $\sigma$ ):              | 1.75     | 1.75   | 0.03      | 5          |
|           | Head 2480   | e'                | 38.9600 | Relative Permittivity ( $\epsilon_r$ ): | 38.96    | 39.16  | -0.52     | 5          |
|           |             | e''               | 13.1200 | Conductivity ( $\sigma$ ):              | 1.81     | 1.83   | -1.27     | 5          |
| 5-20-2020 | Head 2450   | e'                | 37.5700 | Relative Permittivity ( $\epsilon_r$ ): | 37.57    | 39.20  | -4.16     | 5          |
|           |             | e''               | 13.4200 | Conductivity ( $\sigma$ ):              | 1.83     | 1.80   | 1.57      | 5          |
|           | Head 2400   | e'                | 37.7000 | Relative Permittivity ( $\epsilon_r$ ): | 37.70    | 39.30  | -4.06     | 5          |
|           |             | e''               | 13.4300 | Conductivity ( $\sigma$ ):              | 1.79     | 1.75   | 2.32      | 5          |
|           | Head 2480   | e'                | 37.4800 | Relative Permittivity ( $\epsilon_r$ ): | 37.48    | 39.16  | -4.30     | 5          |
|           |             | e''               | 13.4000 | Conductivity ( $\sigma$ ):              | 1.85     | 1.83   | 0.84      | 5          |
| 5-24-2020 | Head 2450   | e'                | 38.4700 | Relative Permittivity ( $\epsilon_r$ ): | 38.47    | 39.20  | -1.86     | 5          |
|           |             | e''               | 13.5500 | Conductivity ( $\sigma$ ):              | 1.85     | 1.80   | 2.55      | 5          |
|           | Head 2400   | e'                | 38.4700 | Relative Permittivity ( $\epsilon_r$ ): | 38.47    | 39.30  | -2.10     | 5          |
|           |             | e''               | 13.5100 | Conductivity ( $\sigma$ ):              | 1.80     | 1.75   | 2.92      | 5          |
|           | Head 2480   | e'                | 38.4200 | Relative Permittivity ( $\epsilon_r$ ): | 38.42    | 39.16  | -1.90     | 5          |
|           |             | e''               | 13.5400 | Conductivity ( $\sigma$ ):              | 1.87     | 1.83   | 1.89      | 5          |
| 5-31-2020 | Head 2450   | e'                | 38.5000 | Relative Permittivity ( $\epsilon_r$ ): | 38.50    | 39.20  | -1.79     | 5          |
|           |             | e''               | 13.1100 | Conductivity ( $\sigma$ ):              | 1.79     | 1.80   | -0.78     | 5          |
|           | Head 2400   | e'                | 38.5600 | Relative Permittivity ( $\epsilon_r$ ): | 38.56    | 39.30  | -1.87     | 5          |
|           |             | e''               | 13.1200 | Conductivity ( $\sigma$ ):              | 1.75     | 1.75   | -0.05     | 5          |
|           | Head 2480   | e'                | 38.4500 | Relative Permittivity ( $\epsilon_r$ ): | 38.45    | 39.16  | -1.82     | 5          |
|           |             | e''               | 13.1100 | Conductivity ( $\sigma$ ):              | 1.81     | 1.83   | -1.34     | 5          |
| 6-7-2020  | Head 750    | e'                | 41.2700 | Relative Permittivity ( $\epsilon_r$ ): | 41.27    | 41.96  | -1.65     | 5          |
|           |             | e''               | 21.5700 | Conductivity ( $\sigma$ ):              | 0.90     | 0.89   | 0.72      | 5          |
|           | Head 700    | e'                | 41.3500 | Relative Permittivity ( $\epsilon_r$ ): | 41.35    | 42.22  | -2.06     | 5          |
|           |             | e''               | 22.6200 | Conductivity ( $\sigma$ ):              | 0.88     | 0.89   | -0.99     | 5          |
|           | Head 790    | e'                | 41.1600 | Relative Permittivity ( $\epsilon_r$ ): | 41.16    | 41.76  | -1.43     | 5          |
|           |             | e''               | 20.7700 | Conductivity ( $\sigma$ ):              | 0.91     | 0.90   | 1.81      | 5          |
| 6-7-2020  | Head 2450   | e'                | 38.4500 | Relative Permittivity ( $\epsilon_r$ ): | 38.45    | 39.20  | -1.91     | 5          |
|           |             | e''               | 13.1900 | Conductivity ( $\sigma$ ):              | 1.80     | 1.80   | -0.18     | 5          |
|           | Head 2400   | e'                | 38.4900 | Relative Permittivity ( $\epsilon_r$ ): | 38.49    | 39.30  | -2.05     | 5          |
|           |             | e''               | 13.1600 | Conductivity ( $\sigma$ ):              | 1.76     | 1.75   | 0.26      | 5          |
|           | Head 2480   | e'                | 38.4000 | Relative Permittivity ( $\epsilon_r$ ): | 38.40    | 39.16  | -1.95     | 5          |
|           |             | e''               | 13.1900 | Conductivity ( $\sigma$ ):              | 1.82     | 1.83   | -0.74     | 5          |
| 6-10-2020 | Head 750    | e'                | 41.9300 | Relative Permittivity ( $\epsilon_r$ ): | 41.93    | 41.96  | -0.08     | 5          |
|           |             | e''               | 20.8800 | Conductivity ( $\sigma$ ):              | 0.87     | 0.89   | -2.50     | 5          |
|           | Head 700    | e'                | 42.0700 | Relative Permittivity ( $\epsilon_r$ ): | 42.07    | 42.22  | -0.35     | 5          |
|           |             | e''               | 21.9600 | Conductivity ( $\sigma$ ):              | 0.85     | 0.89   | -3.88     | 5          |
|           | Head 790    | e'                | 41.8100 | Relative Permittivity ( $\epsilon_r$ ): | 41.81    | 41.76  | 0.13      | 5          |
|           |             | e''               | 20.0800 | Conductivity ( $\sigma$ ):              | 0.88     | 0.90   | -1.57     | 5          |
| 6-14-2020 | Head 835    | e'                | 41.3700 | Relative Permittivity ( $\epsilon_r$ ): | 41.37    | 41.50  | -0.31     | 5          |
|           |             | e''               | 19.8000 | Conductivity ( $\sigma$ ):              | 0.92     | 0.90   | 2.14      | 5          |
|           | Head 820    | e'                | 41.3800 | Relative Permittivity ( $\epsilon_r$ ): | 41.38    | 41.60  | -0.53     | 5          |
|           |             | e''               | 20.0400 | Conductivity ( $\sigma$ ):              | 0.91     | 0.90   | 1.70      | 5          |
|           | Head 850    | e'                | 41.3600 | Relative Permittivity ( $\epsilon_r$ ): | 41.36    | 41.50  | -0.34     | 5          |
|           |             | e''               | 19.5900 | Conductivity ( $\sigma$ ):              | 0.93     | 0.92   | 1.19      | 5          |

**SAR 5 Room**

| Date      | Freq. (MHz) | Liquid Parameters |         | Measured                                | Target | Delta (%) | Limit ±(%) |   |
|-----------|-------------|-------------------|---------|-----------------------------------------|--------|-----------|------------|---|
| 5-17-2020 | Head 5250   | e'                | 37.0700 | Relative Permittivity ( $\epsilon_r$ ): | 37.07  | 35.93     | 3.16       | 5 |
|           |             | e''               | 15.6100 | Conductivity ( $\sigma$ ):              | 4.56   | 4.70      | -3.09      | 5 |
|           | Head 5260   | e'                | 37.0600 | Relative Permittivity ( $\epsilon_r$ ): | 37.06  | 35.92     | 3.17       | 5 |
|           |             | e''               | 15.6100 | Conductivity ( $\sigma$ ):              | 4.57   | 4.71      | -3.12      | 5 |
|           | Head 5600   | e'                | 36.5500 | Relative Permittivity ( $\epsilon_r$ ): | 36.55  | 35.53     | 2.86       | 5 |
|           |             | e''               | 15.8200 | Conductivity ( $\sigma$ ):              | 4.93   | 5.06      | -2.65      | 5 |
|           | Head 5750   | e'                | 36.3300 | Relative Permittivity ( $\epsilon_r$ ): | 36.33  | 35.36     | 2.74       | 5 |
|           |             | e''               | 15.9300 | Conductivity ( $\sigma$ ):              | 5.09   | 5.21      | -2.31      | 5 |
|           | Head 5825   | e'                | 36.2400 | Relative Permittivity ( $\epsilon_r$ ): | 36.24  | 35.30     | 2.66       | 5 |
|           |             | e''               | 15.9800 | Conductivity ( $\sigma$ ):              | 5.18   | 5.27      | -1.79      | 5 |
| 5-20-2020 | Head 5250   | e'                | 35.2800 | Relative Permittivity ( $\epsilon_r$ ): | 35.28  | 35.93     | -1.82      | 5 |
|           |             | e''               | 15.7200 | Conductivity ( $\sigma$ ):              | 4.59   | 4.70      | -2.41      | 5 |
|           | Head 5260   | e'                | 35.2600 | Relative Permittivity ( $\epsilon_r$ ): | 35.26  | 35.92     | -1.84      | 5 |
|           |             | e''               | 15.7300 | Conductivity ( $\sigma$ ):              | 4.60   | 4.71      | -2.37      | 5 |
|           | Head 5600   | e'                | 34.7600 | Relative Permittivity ( $\epsilon_r$ ): | 34.76  | 35.53     | -2.18      | 5 |
|           |             | e''               | 15.8800 | Conductivity ( $\sigma$ ):              | 4.94   | 5.06      | -2.28      | 5 |
|           | Head 5750   | e'                | 34.5500 | Relative Permittivity ( $\epsilon_r$ ): | 34.55  | 35.36     | -2.30      | 5 |
|           |             | e''               | 15.9600 | Conductivity ( $\sigma$ ):              | 5.10   | 5.21      | -2.13      | 5 |
|           | Head 5825   | e'                | 34.4500 | Relative Permittivity ( $\epsilon_r$ ): | 34.45  | 35.30     | -2.41      | 5 |
|           |             | e''               | 16.0000 | Conductivity ( $\sigma$ ):              | 5.18   | 5.27      | -1.67      | 5 |
| 5-24-2020 | Head 5250   | e'                | 35.2400 | Relative Permittivity ( $\epsilon_r$ ): | 35.24  | 35.93     | -1.93      | 5 |
|           |             | e''               | 16.1800 | Conductivity ( $\sigma$ ):              | 4.72   | 4.70      | 0.45       | 5 |
|           | Head 5260   | e'                | 35.2300 | Relative Permittivity ( $\epsilon_r$ ): | 35.23  | 35.92     | -1.93      | 5 |
|           |             | e''               | 16.2000 | Conductivity ( $\sigma$ ):              | 4.74   | 4.71      | 0.54       | 5 |
|           | Head 5600   | e'                | 34.6200 | Relative Permittivity ( $\epsilon_r$ ): | 34.62  | 35.53     | -2.57      | 5 |
|           |             | e''               | 16.3100 | Conductivity ( $\sigma$ ):              | 5.08   | 5.06      | 0.36       | 5 |
|           | Head 5750   | e'                | 34.4800 | Relative Permittivity ( $\epsilon_r$ ): | 34.48  | 35.36     | -2.50      | 5 |
|           |             | e''               | 16.3500 | Conductivity ( $\sigma$ ):              | 5.23   | 5.21      | 0.26       | 5 |
|           | Head 5825   | e'                | 34.2200 | Relative Permittivity ( $\epsilon_r$ ): | 34.22  | 35.30     | -3.06      | 5 |
|           |             | e''               | 16.3900 | Conductivity ( $\sigma$ ):              | 5.31   | 5.27      | 0.73       | 5 |
| 5-27-2020 | Head 5250   | e'                | 35.1000 | Relative Permittivity ( $\epsilon_r$ ): | 35.10  | 35.93     | -2.32      | 5 |
|           |             | e''               | 16.1400 | Conductivity ( $\sigma$ ):              | 4.71   | 4.70      | 0.20       | 5 |
|           | Head 5260   | e'                | 35.0800 | Relative Permittivity ( $\epsilon_r$ ): | 35.08  | 35.92     | -2.34      | 5 |
|           |             | e''               | 16.1500 | Conductivity ( $\sigma$ ):              | 4.72   | 4.71      | 0.23       | 5 |
|           | Head 5600   | e'                | 34.5300 | Relative Permittivity ( $\epsilon_r$ ): | 34.53  | 35.53     | -2.83      | 5 |
|           |             | e''               | 16.3100 | Conductivity ( $\sigma$ ):              | 5.08   | 5.06      | 0.36       | 5 |
|           | Head 5750   | e'                | 34.3100 | Relative Permittivity ( $\epsilon_r$ ): | 34.31  | 35.36     | -2.98      | 5 |
|           |             | e''               | 16.3900 | Conductivity ( $\sigma$ ):              | 5.24   | 5.21      | 0.51       | 5 |
|           | Head 5825   | e'                | 34.1800 | Relative Permittivity ( $\epsilon_r$ ): | 34.18  | 35.30     | -3.17      | 5 |
|           |             | e''               | 16.4400 | Conductivity ( $\sigma$ ):              | 5.32   | 5.27      | 1.04       | 5 |
| 6-8-2020  | Head 5250   | e'                | 36.2800 | Relative Permittivity ( $\epsilon_r$ ): | 36.28  | 35.93     | 0.97       | 5 |
|           |             | e''               | 16.1200 | Conductivity ( $\sigma$ ):              | 4.71   | 4.70      | 0.08       | 5 |
|           | Head 5260   | e'                | 36.2500 | Relative Permittivity ( $\epsilon_r$ ): | 36.25  | 35.92     | 0.91       | 5 |
|           |             | e''               | 16.1300 | Conductivity ( $\sigma$ ):              | 4.72   | 4.71      | 0.11       | 5 |
|           | Head 5600   | e'                | 35.7200 | Relative Permittivity ( $\epsilon_r$ ): | 35.72  | 35.53     | 0.52       | 5 |
|           |             | e''               | 16.3200 | Conductivity ( $\sigma$ ):              | 5.08   | 5.06      | 0.42       | 5 |
|           | Head 5750   | e'                | 35.5000 | Relative Permittivity ( $\epsilon_r$ ): | 35.50  | 35.36     | 0.39       | 5 |
|           |             | e''               | 16.4100 | Conductivity ( $\sigma$ ):              | 5.25   | 5.21      | 0.63       | 5 |
|           | Head 5825   | e'                | 35.3700 | Relative Permittivity ( $\epsilon_r$ ): | 35.37  | 35.30     | 0.20       | 5 |
|           |             | e''               | 16.4600 | Conductivity ( $\sigma$ ):              | 5.33   | 5.27      | 1.16       | 5 |
| 6-11-2020 | Head 5250   | e'                | 36.4600 | Relative Permittivity ( $\epsilon_r$ ): | 36.46  | 35.93     | 1.47       | 5 |
|           |             | e''               | 16.0500 | Conductivity ( $\sigma$ ):              | 4.69   | 4.70      | -0.36      | 5 |
|           | Head 5260   | e'                | 36.4400 | Relative Permittivity ( $\epsilon_r$ ): | 36.44  | 35.92     | 1.44       | 5 |
|           |             | e''               | 16.0600 | Conductivity ( $\sigma$ ):              | 4.70   | 4.71      | -0.32      | 5 |
|           | Head 5600   | e'                | 35.9200 | Relative Permittivity ( $\epsilon_r$ ): | 35.92  | 35.53     | 1.09       | 5 |
|           |             | e''               | 16.2000 | Conductivity ( $\sigma$ ):              | 5.04   | 5.06      | -0.31      | 5 |
|           | Head 5750   | e'                | 35.7000 | Relative Permittivity ( $\epsilon_r$ ): | 35.70  | 35.36     | 0.95       | 5 |
|           |             | e''               | 16.2800 | Conductivity ( $\sigma$ ):              | 5.21   | 5.21      | -0.17      | 5 |
|           | Head 5825   | e'                | 35.5800 | Relative Permittivity ( $\epsilon_r$ ): | 35.58  | 35.30     | 0.79       | 5 |
|           |             | e''               | 16.3100 | Conductivity ( $\sigma$ ):              | 5.28   | 5.27      | 0.24       | 5 |

**SAR 5 Room (Continued)**

| Date      | Freq. (MHz) | Liquid Parameters |         |                                         | Measured | Target | Delta (%) | Limit ±(%) |
|-----------|-------------|-------------------|---------|-----------------------------------------|----------|--------|-----------|------------|
| 6-15-2020 | Head 5250   | e'                | 36.4157 | Relative Permittivity ( $\epsilon_r$ ): | 36.42    | 35.93  | 1.34      | 5          |
|           |             | e"                | 15.6742 | Conductivity ( $\sigma$ ):              | 4.58     | 4.70   | -2.69     | 5          |
|           | Head 5260   | e'                | 36.4027 | Relative Permittivity ( $\epsilon_r$ ): | 36.40    | 35.92  | 1.34      | 5          |
|           |             | e"                | 15.6792 | Conductivity ( $\sigma$ ):              | 4.59     | 4.71   | -2.69     | 5          |
|           | Head 5600   | e'                | 35.9200 | Relative Permittivity ( $\epsilon_r$ ): | 35.92    | 35.53  | 1.09      | 5          |
|           |             | e"                | 15.8900 | Conductivity ( $\sigma$ ):              | 4.95     | 5.06   | -2.22     | 5          |
|           | Head 5800   | e'                | 35.6944 | Relative Permittivity ( $\epsilon_r$ ): | 35.69    | 35.30  | 1.12      | 5          |
|           |             | e"                | 15.9830 | Conductivity ( $\sigma$ ):              | 5.15     | 5.27   | -2.19     | 5          |
|           | Head 5825   | e'                | 35.6000 | Relative Permittivity ( $\epsilon_r$ ): | 35.60    | 35.30  | 0.85      | 5          |
|           |             | e"                | 16.0400 | Conductivity ( $\sigma$ ):              | 5.20     | 5.27   | -1.42     | 5          |

**8.2. System Check**

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are re-measured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

**System Performance Check Measurement Conditions:**

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ±0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm for measurements > 3 GHz.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm was aligned with the dipole.  
For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- Distance between probe sensors and phantom surface was set to 2.5 mm.  
For 5 GHz band - Distance between probe sensors and phantom surface was set to 1.4 mm
- The dipole input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

**Reference Target SAR Values**

The reference SAR values can be obtained from the calibration certificate of system validation dipoles.

| System Dipole | Serial No. | Cal. Date  | Freq. (MHz) | Target SAR Values (W/kg) |       |
|---------------|------------|------------|-------------|--------------------------|-------|
|               |            |            |             | 1g/10g                   | Head  |
| D750V3        | 1122       | 2-24-2020  | 750         | 1g                       | 8.54  |
|               |            |            |             | 10g                      | 5.59  |
| D835V2        | 4d174      | 2-24-2020  | 835         | 1g                       | 9.59  |
|               |            |            |             | 10g                      | 6.24  |
| D1750V2       | 1125       | 2-21-2020  | 1750        | 1g                       | 36.50 |
|               |            |            |             | 10g                      | 19.20 |
| D1900V2       | 5d190      | 10-23-2018 | 1900        | 1g                       | 39.10 |
|               |            |            |             | 10g                      | 20.40 |
| D1900V2       | 5d199      | 3-19-2020  | 1900        | 1g                       | 40.50 |
|               |            |            |             | 10g                      | 21.00 |
| D2450V2       | 939        | 7-25-2019  | 2450        | 1g                       | 53.20 |
|               |            |            |             | 10g                      | 25.10 |
| D2600V2       | 1097       | 9-19-2019  | 2600        | 1g                       | 57.30 |
|               |            |            |             | 10g                      | 25.70 |
| D5GHzV2       | 1184       | 8-21-2018  | 5250        | 1g                       | 81.10 |
|               |            |            |             | 10g                      | 23.40 |
|               |            |            | 5600        | 1g                       | 85.00 |
|               |            |            |             | 10g                      | 24.40 |
|               |            |            | 5750        | 1g                       | 82.60 |
|               |            |            |             | 10g                      | 23.70 |
| D5GHzV2       | 1209       | 2-27-2020  | 5250        | 1g                       | 79.90 |
|               |            |            |             | 10g                      | 22.60 |
|               |            |            | 5600        | 1g                       | 83.60 |
|               |            |            |             | 10g                      | 23.60 |
|               |            |            | 5750        | 1g                       | 80.20 |
|               |            |            |             | 10g                      | 22.60 |

**Note(s):**

Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (D1900V2 (SN : 5d190), D5GHzV2 (SN : 1184))

**System Check Results**

The 1-g and 10-g SAR measured with a reference dipole, using the required tissue-equivalent medium at the test frequency, must be within 10% of the manufacturer calibrated dipole SAR target.

**SAR 1 Room**

| Date Tested | System Dipole  |          | T.S. Liquid |     | Measured Results    |                  | Target (Ref. Value) | Delta ±10 % | Plot No. |
|-------------|----------------|----------|-------------|-----|---------------------|------------------|---------------------|-------------|----------|
|             | Type           | Serial # |             |     | Zoom Scan to 100 mW | Normalize to 1 W |                     |             |          |
| 6-2-2020    | D5GHzV2 (5250) | 1184     | Head        | 1g  | 7.65                | 76.50            | 79.90               | -4.26       |          |
|             |                |          |             | 10g | 2.20                | 22.00            | 22.60               | -2.65       |          |
| 6-2-2020    | D5GHzV2 (5600) | 1184     | Head        | 1g  | 8.42                | 84.20            | 83.60               | 0.72        |          |
|             |                |          |             | 10g | 2.39                | 23.90            | 23.60               | 1.27        |          |
| 6-2-2020    | D5GHzV2 (5750) | 1184     | Head        | 1g  | 8.41                | 84.10            | 80.20               | 4.86        |          |
|             |                |          |             | 10g | 2.41                | 24.10            | 22.60               | 6.64        |          |
| 6-4-2020    | D2450V2        | 1184     | Head        | 1g  | 5.22                | 52.20            | 53.20               | -1.88       |          |
|             |                |          |             | 10g | 2.39                | 23.90            | 25.10               | -4.78       |          |
| 6-11-2020   | D5GHzV2 (5250) | 1209     | Head        | 1g  | 7.70                | 77.00            | 79.90               | -3.63       |          |
|             |                |          |             | 10g | 2.19                | 21.90            | 22.60               | -3.10       |          |
| 6-11-2020   | D5GHzV2 (5600) | 1209     | Head        | 1g  | 7.83                | 78.30            | 83.60               | -6.34       |          |
|             |                |          |             | 10g | 2.21                | 22.10            | 23.60               | -6.36       |          |
| 6-11-2020   | D5GHzV2 (5750) | 1209     | Head        | 1g  | 8.68                | 86.80            | 80.20               | 8.23        | 1, 2     |
|             |                |          |             | 10g | 2.45                | 24.50            | 22.60               | 8.41        |          |
| 6-18-2020   | D5GHzV2 (5250) | 1209     | Head        | 1g  | 7.71                | 77.10            | 79.90               | -3.50       |          |
|             |                |          |             | 10g | 2.19                | 21.90            | 22.60               | -3.10       |          |
| 6-18-2020   | D5GHzV2 (5600) | 1209     | Head        | 1g  | 8.18                | 81.80            | 83.60               | -2.15       |          |
|             |                |          |             | 10g | 2.31                | 23.10            | 23.60               | -2.12       |          |
| 6-18-2020   | D5GHzV2 (5750) | 1209     | Head        | 1g  | 8.59                | 85.90            | 80.20               | 7.11        |          |
|             |                |          |             | 10g | 2.43                | 24.30            | 22.60               | 7.52        |          |

**SAR 3 Room**

| Date Tested | System Dipole |          | T.S.<br>Liquid | Measured Results       |                     | Target<br>(Ref. Value) | Delta<br>±10 % | Plot No. |
|-------------|---------------|----------|----------------|------------------------|---------------------|------------------------|----------------|----------|
|             | Type          | Serial # |                | Zoom Scan to<br>100 mW | Normalize<br>to 1 W |                        |                |          |
| 5-10-2020   | D750V3        | 1122     | Head           | 1g                     | 0.80                | 7.98                   | 8.54           | 3, 4     |
|             |               |          |                | 10g                    | 0.52                | 5.22                   | 5.59           |          |
| 5-10-2020   | D835V2        | 4d174    | Head           | 1g                     | 0.96                | 9.61                   | 9.59           |          |
|             |               |          |                | 10g                    | 0.63                | 6.25                   | 6.24           |          |
| 5-12-2020   | D1750V2       | 1125     | Head           | 1g                     | 3.45                | 34.50                  | 36.50          |          |
|             |               |          |                | 10g                    | 1.84                | 18.40                  | 19.20          |          |
| 5-12-2020   | D1900V2       | 5d190    | Head           | 1g                     | 3.83                | 38.30                  | 39.10          |          |
|             |               |          |                | 10g                    | 1.99                | 19.90                  | 20.40          |          |
| 5-17-2020   | D1750V2       | 1125     | Head           | 1g                     | 3.46                | 34.60                  | 36.50          |          |
|             |               |          |                | 10g                    | 1.84                | 18.40                  | 19.20          |          |
| 5-17-2020   | D1900V2       | 5d190    | Head           | 1g                     | 3.80                | 38.00                  | 39.10          |          |
|             |               |          |                | 10g                    | 1.97                | 19.70                  | 20.40          |          |
| 5-17-2020   | D2600V2       | 1097     | Head           | 1g                     | 5.41                | 54.10                  | 57.30          |          |
|             |               |          |                | 10g                    | 2.44                | 24.40                  | 25.70          |          |
| 5-20-2020   | D1750V2       | 1125     | Head           | 1g                     | 3.42                | 34.20                  | 36.50          |          |
|             |               |          |                | 10g                    | 1.81                | 18.10                  | 19.20          |          |
| 5-20-2020   | D1900V2       | 5d190    | Head           | 1g                     | 3.84                | 38.40                  | 39.10          |          |
|             |               |          |                | 10g                    | 1.99                | 19.90                  | 20.40          |          |
| 5-20-2020   | D2600V2       | 1097     | Head           | 1g                     | 5.36                | 53.60                  | 57.30          |          |
|             |               |          |                | 10g                    | 2.41                | 24.10                  | 25.70          |          |
| 5-24-2020   | D1900V2       | 5d190    | Head           | 1g                     | 4.08                | 40.80                  | 39.10          |          |
|             |               |          |                | 10g                    | 2.11                | 21.10                  | 20.40          |          |
| 5-31-2020   | D1750V2       | 1125     | Head           | 1g                     | 3.41                | 34.10                  | 36.50          | 5, 6     |
|             |               |          |                | 10g                    | 1.81                | 18.10                  | 19.20          |          |
| 6-1-2020    | D2600V2       | 1097     | Head           | 1g                     | 5.67                | 56.70                  | 57.30          |          |
|             |               |          |                | 10g                    | 2.55                | 25.50                  | 25.70          |          |
| 6-7-2020    | D1750V2       | 1125     | Head           | 1g                     | 3.47                | 34.70                  | 36.50          |          |
|             |               |          |                | 10g                    | 1.84                | 18.40                  | 19.20          |          |
| 6-7-2020    | D1900V2       | 5d199    | Head           | 1g                     | 4.23                | 42.30                  | 40.50          |          |
|             |               |          |                | 10g                    | 2.20                | 22.00                  | 21.00          |          |
| 6-10-2020   | D1750V2       | 1125     | Head           | 1g                     | 3.68                | 36.80                  | 36.50          |          |
|             |               |          |                | 10g                    | 1.95                | 19.50                  | 19.20          |          |
| 6-10-2020   | D1900V2       | 5d199    | Head           | 1g                     | 4.27                | 42.70                  | 40.50          | 7, 8     |
|             |               |          |                | 10g                    | 2.22                | 22.20                  | 21.00          |          |
| 6-14-2020   | D1750V2       | 1125     | Head           | 1g                     | 3.52                | 35.20                  | 36.50          |          |
|             |               |          |                | 10g                    | 1.89                | 18.90                  | 19.20          |          |
| 6-14-2020   | D2600V2       | 1097     | Head           | 1g                     | 5.46                | 54.60                  | 57.30          |          |
|             |               |          |                | 10g                    | 2.47                | 24.70                  | 25.70          |          |
| 6-21-2020   | D1750V2       | 1125     | Head           | 1g                     | 3.50                | 35.00                  | 36.50          |          |
|             |               |          |                | 10g                    | 1.86                | 18.60                  | 19.20          |          |
| 6-21-2020   | D1900V2       | 5d199    | Head           | 1g                     | 4.23                | 42.30                  | 40.50          |          |
|             |               |          |                | 10g                    | 2.19                | 21.90                  | 21.00          |          |

**SAR 4 Room**

| Date Tested | System Dipole |          | T.S.<br>Liquid | Measured Results       |                     | Target<br>(Ref. Value) | Delta<br>±10 % | Plot No. |
|-------------|---------------|----------|----------------|------------------------|---------------------|------------------------|----------------|----------|
|             | Type          | Serial # |                | Zoom Scan to<br>100 mW | Normalize<br>to 1 W |                        |                |          |
| 5-17-2020   | D1900V2       | 5d190    | Head           | 1g                     | 3.92                | 39.20                  | 39.10          | 0.26     |
|             |               |          |                | 10g                    | 2.02                | 20.20                  | 20.40          | -0.98    |
| 5-17-2020   | D2450V2       | 939      | Head           | 1g                     | 5.20                | 52.00                  | 53.20          | -2.26    |
|             |               |          |                | 10g                    | 2.41                | 24.10                  | 25.10          | -3.98    |
| 5-20-2020   | D2450V2       | 939      | Head           | 1g                     | 5.32                | 53.20                  | 53.20          | 0.00     |
|             |               |          |                | 10g                    | 2.46                | 24.60                  | 25.10          | -1.99    |
| 5-24-2020   | D2450V2       | 939      | Head           | 1g                     | 5.46                | 54.60                  | 53.20          | 2.63     |
|             |               |          |                | 10g                    | 2.52                | 25.20                  | 25.10          | 0.40     |
| 5-31-2020   | D2450V2       | 939      | Head           | 1g                     | 5.23                | 52.30                  | 53.20          | -1.69    |
|             |               |          |                | 10g                    | 2.43                | 24.30                  | 25.10          | -3.19    |
| 6-7-2020    | D750V3        | 1122     | Head           | 1g                     | 0.84                | 8.44                   | 8.54           | -1.17    |
|             |               |          |                | 10g                    | 0.55                | 5.52                   | 5.59           | -1.25    |
| 6-7-2020    | D2450V2       | 939      | Head           | 1g                     | 5.38                | 53.80                  | 53.20          | 1.13     |
|             |               |          |                | 10g                    | 2.48                | 24.80                  | 25.10          | -1.20    |
| 6-10-2020   | D750V3        | 1122     | Head           | 1g                     | 0.80                | 8.01                   | 8.54           | -6.21    |
|             |               |          |                | 10g                    | 0.52                | 5.21                   | 5.59           | -6.80    |
| 6-14-2020   | D835V2        | 4d174    | Head           | 1g                     | 0.95                | 9.53                   | 9.59           | -0.63    |
|             |               |          |                | 10g                    | 0.62                | 6.16                   | 6.24           | -1.28    |

**SAR 5 Room**

| Date Tested | System Dipole     |          | T.S.<br>Liquid | Measured Results       |                     | Target<br>(Ref. Value) | Delta<br>±10 % | Plot No. |
|-------------|-------------------|----------|----------------|------------------------|---------------------|------------------------|----------------|----------|
|             | Type              | Serial # |                | Zoom Scan to<br>100 mW | Normalize<br>to 1 W |                        |                |          |
| 5-17-2020   | D5GHzV2<br>(5250) | 1184     | Head           | 1g                     | 7.51                | 75.10                  | 81.10          | -7.40    |
|             |                   |          |                | 10g                    | 2.17                | 21.70                  | 23.40          | -7.26    |
| 5-17-2020   | D5GHzV2<br>(5600) | 1184     | Head           | 1g                     | 8.62                | 86.20                  | 85.00          | 1.41     |
|             |                   |          |                | 10g                    | 2.48                | 24.80                  | 24.40          | 1.64     |
| 5-17-2020   | D5GHzV2<br>(5750) | 1184     | Head           | 1g                     | 8.30                | 83.00                  | 82.60          | 0.48     |
|             |                   |          |                | 10g                    | 2.37                | 23.70                  | 23.70          | 0.00     |
| 5-20-2020   | D5GHzV2<br>(5250) | 1184     | Head           | 1g                     | 7.54                | 75.40                  | 81.10          | -7.03    |
|             |                   |          |                | 10g                    | 2.18                | 21.80                  | 23.40          | -6.84    |
| 5-20-2020   | D5GHzV2<br>(5600) | 1184     | Head           | 1g                     | 8.50                | 85.00                  | 85.00          | 0.00     |
|             |                   |          |                | 10g                    | 2.46                | 24.60                  | 24.40          | 0.82     |
| 5-20-2020   | D5GHzV2<br>(5750) | 1184     | Head           | 1g                     | 8.92                | 89.20                  | 82.60          | 7.99     |
|             |                   |          |                | 10g                    | 2.57                | 25.70                  | 23.70          | 8.44     |
| 5-24-2020   | D5GHzV2<br>(5250) | 1184     | Head           | 1g                     | 8.08                | 80.80                  | 81.10          | -0.37    |
|             |                   |          |                | 10g                    | 2.34                | 23.40                  | 23.40          | 0.00     |
| 5-24-2020   | D5GHzV2<br>(5600) | 1184     | Head           | 1g                     | 8.93                | 89.30                  | 85.00          | 5.06     |
|             |                   |          |                | 10g                    | 2.57                | 25.70                  | 24.40          | 5.33     |
| 5-24-2020   | D5GHzV2<br>(5750) | 1184     | Head           | 1g                     | 8.51                | 85.10                  | 82.60          | 3.03     |
|             |                   |          |                | 10g                    | 2.44                | 24.40                  | 23.70          | 2.95     |
| 5-27-2020   | D5GHzV2<br>(5250) | 1184     | Head           | 1g                     | 8.45                | 84.50                  | 81.10          | 4.19     |
|             |                   |          |                | 10g                    | 2.44                | 24.40                  | 23.40          | 4.27     |
| 5-27-2020   | D5GHzV2<br>(5600) | 1184     | Head           | 1g                     | 8.64                | 86.40                  | 85.00          | 1.65     |
|             |                   |          |                | 10g                    | 2.49                | 24.90                  | 24.40          | 2.05     |
| 5-27-2020   | D5GHzV2<br>(5750) | 1184     | Head           | 1g                     | 8.27                | 82.70                  | 82.60          | 0.12     |
|             |                   |          |                | 10g                    | 2.38                | 23.80                  | 23.70          | 0.42     |
| 6-8-2020    | D5GHzV2<br>(5250) | 1209     | Head           | 1g                     | 8.28                | 82.80                  | 79.90          | 3.63     |
|             |                   |          |                | 10g                    | 2.36                | 23.60                  | 22.60          | 4.42     |
| 6-8-2020    | D5GHzV2<br>(5600) | 1209     | Head           | 1g                     | 8.60                | 86.00                  | 83.60          | 2.87     |
|             |                   |          |                | 10g                    | 2.45                | 24.50                  | 23.60          | 3.81     |
| 6-8-2020    | D5GHzV2<br>(5750) | 1209     | Head           | 1g                     | 8.40                | 84.00                  | 80.20          | 4.74     |
|             |                   |          |                | 10g                    | 2.36                | 23.60                  | 22.60          | 4.42     |
| 6-11-2020   | D5GHzV2<br>(5250) | 1209     | Head           | 1g                     | 8.33                | 83.30                  | 79.90          | 4.26     |
|             |                   |          |                | 10g                    | 2.37                | 23.70                  | 22.60          | 4.87     |
| 6-11-2020   | D5GHzV2<br>(5600) | 1209     | Head           | 1g                     | 8.74                | 87.40                  | 83.60          | 4.55     |
|             |                   |          |                | 10g                    | 2.47                | 24.70                  | 23.60          | 4.66     |
| 6-11-2020   | D5GHzV2<br>(5750) | 1209     | Head           | 1g                     | 8.34                | 83.40                  | 80.20          | 3.99     |
|             |                   |          |                | 10g                    | 2.35                | 23.50                  | 22.60          | 3.98     |
| 6-15-2020   | D5GHzV2<br>(5250) | 1209     | Head           | 1g                     | 8.02                | 80.20                  | 79.90          | 0.38     |
|             |                   |          |                | 10g                    | 2.28                | 22.80                  | 22.60          | 0.88     |
| 6-15-2020   | D5GHzV2<br>(5600) | 1209     | Head           | 1g                     | 8.76                | 87.60                  | 83.60          | 4.78     |
|             |                   |          |                | 10g                    | 2.48                | 24.80                  | 23.60          | 5.08     |
| 6-15-2020   | D5GHzV2<br>(5750) | 1209     | Head           | 1g                     | 8.38                | 83.80                  | 80.20          | 4.49     |
|             |                   |          |                | 10g                    | 2.36                | 23.60                  | 22.60          | 4.42     |

## 9. Conducted Output Power Measurements

### 9.1. GSM

Per KDB 941225 D01 3G SAR Procedures:

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

#### GSM850 Measured Results

| Mode         | Coding Scheme | Time Slots | Ch No. | Freq. (MHz) | Maximum Average Power (dBm) |           |               |           |
|--------------|---------------|------------|--------|-------------|-----------------------------|-----------|---------------|-----------|
|              |               |            |        |             | Measured                    |           | Tune-up Limit |           |
|              |               |            |        |             | Burst Pwr                   | Frame Pwr | Burst Pwr     | Frame Pwr |
| GSM (Voice)  | CS1           | 1          | 128    | 824.2       | 33.0                        | 23.9      | 33.5          | 24.5      |
|              |               |            | 190    | 836.6       | 33.0                        | 23.9      |               |           |
|              |               |            | 251    | 848.8       | 33.0                        | 24.0      |               |           |
| GPRS (GMSK)  | CS1           | 1          | 128    | 824.2       | 32.9                        | 23.8      | 33.5          | 24.5      |
|              |               |            | 190    | 836.6       | 33.0                        | 24.0      |               |           |
|              |               |            | 251    | 848.8       | 33.0                        | 24.0      |               |           |
|              |               | 2          | 128    | 824.2       | 30.5                        | 24.4      | 31.5          | 25.5      |
|              |               |            | 190    | 836.6       | 30.5                        | 24.5      |               |           |
|              |               |            | 251    | 848.8       | 30.6                        | 24.6      |               |           |
|              |               | 3          | 128    | 824.2       | 29.4                        | 25.2      | 30.5          | 26.2      |
|              |               |            | 190    | 836.6       | 29.5                        | 25.3      |               |           |
|              |               |            | 251    | 848.8       | 29.6                        | 25.3      |               |           |
|              |               | 4          | 128    | 824.2       | 27.3                        | 24.3      | 29.0          | 26.0      |
|              |               |            | 190    | 836.6       | 27.6                        | 24.6      |               |           |
|              |               |            | 251    | 848.8       | 27.6                        | 24.6      |               |           |
| EGPRS (8PSK) | MCS5          | 1          | 128    | 824.2       | 26.3                        | 17.3      | 27.0          | 18.0      |
|              |               |            | 190    | 836.6       | 26.4                        | 17.4      |               |           |
|              |               |            | 251    | 848.8       | 26.4                        | 17.4      |               |           |
|              |               | 2          | 128    | 824.2       | 23.9                        | 17.9      | 25.0          | 19.0      |
|              |               |            | 190    | 836.6       | 24.1                        | 18.0      |               |           |
|              |               |            | 251    | 848.8       | 24.1                        | 18.1      |               |           |
|              |               | 3          | 128    | 824.2       | 22.7                        | 18.4      | 24.0          | 19.7      |
|              |               |            | 190    | 836.6       | 23.0                        | 18.8      |               |           |
|              |               |            | 251    | 848.8       | 23.1                        | 18.8      |               |           |
|              |               | 4          | 128    | 824.2       | 21.4                        | 18.4      | 23.0          | 20.0      |
|              |               |            | 190    | 836.6       | 21.4                        | 18.4      |               |           |
|              |               |            | 251    | 848.8       | 21.5                        | 18.5      |               |           |

#### Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- GMSK (GPRS) mode with 3 time slots for Max power, based on the Tune-up Procedure. Refer to §6.3.
- SAR is not required for EGPRS (8PSK) mode because the maximum output power and tune-up limit is  $\leq 1/4$ dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is  $\leq 1.2$ W/kg.

**GSM1900 Measured Results**

| Mode         | Coding Scheme | Time Slots | Ch No. | Freq. (MHz) | Maximum Average Power (dBm) |           |               |           |
|--------------|---------------|------------|--------|-------------|-----------------------------|-----------|---------------|-----------|
|              |               |            |        |             | Measured                    |           | Tune-up Limit |           |
|              |               |            |        |             | Burst Pwr                   | Frame Pwr | Burst Pwr     | Frame Pwr |
| GSM (Voice)  | CS1           | 1          | 512    | 1850.2      | 28.5                        | 19.5      | 30.5          | 21.5      |
|              |               |            | 661    | 1880.0      | 28.3                        | 19.3      |               |           |
|              |               |            | 810    | 1909.8      | 28.5                        | 19.5      |               |           |
| GPRS (GMSK)  | CS1           | 1          | 512    | 1850.2      | 28.6                        | 19.6      | 30.5          | 21.5      |
|              |               |            | 661    | 1880.0      | 28.5                        | 19.5      |               |           |
|              |               |            | 810    | 1909.8      | 28.5                        | 19.5      |               |           |
|              |               | 2          | 512    | 1850.2      | 25.4                        | 19.4      | 27.0          | 21.0      |
|              |               |            | 661    | 1880.0      | 25.1                        | 19.1      |               |           |
|              |               |            | 810    | 1909.8      | 25.4                        | 19.4      |               |           |
|              |               | 3          | 512    | 1850.2      | 23.9                        | 19.6      | 25.5          | 21.2      |
|              |               |            | 661    | 1880.0      | 23.6                        | 19.3      |               |           |
|              |               |            | 810    | 1909.8      | 24.2                        | 19.9      |               |           |
|              |               | 4          | 512    | 1850.2      | 22.2                        | 19.2      | 23.5          | 20.5      |
|              |               |            | 661    | 1880.0      | 21.8                        | 18.8      |               |           |
|              |               |            | 810    | 1909.8      | 22.2                        | 19.2      |               |           |
| EGPRS (8PSK) | MCS5          | 1          | 512    | 1850.2      | 24.2                        | 15.2      | 25.5          | 16.5      |
|              |               |            | 661    | 1880.0      | 24.0                        | 15.0      |               |           |
|              |               |            | 810    | 1909.8      | 24.3                        | 15.2      |               |           |
|              |               | 2          | 512    | 1850.2      | 22.3                        | 16.3      | 23.5          | 17.5      |
|              |               |            | 661    | 1880.0      | 21.9                        | 15.9      |               |           |
|              |               |            | 810    | 1909.8      | 22.2                        | 16.1      |               |           |
|              |               | 3          | 512    | 1850.2      | 20.8                        | 16.6      | 22.5          | 18.2      |
|              |               |            | 661    | 1880.0      | 20.4                        | 16.2      |               |           |
|              |               |            | 810    | 1909.8      | 20.9                        | 16.7      |               |           |
|              |               | 4          | 512    | 1850.2      | 19.3                        | 16.3      | 19.5          | 16.5      |
|              |               |            | 661    | 1880.0      | 18.9                        | 15.9      |               |           |
|              |               |            | 810    | 1909.8      | 19.2                        | 16.2      |               |           |

**Notes:**

The worst-case configuration and mode for SAR testing is determined to be as follows:

- GMSK (GPRS) mode with 1 time slot for Max power & 2 time slots for Reduced power, based on the Tune-up Procedure. Refer to §6.3.
- SAR is not required for EGPRS (8PSK) mode because the maximum output power and tune-up limit is  $\leq 1/4$ dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is  $\leq 1.2$ W/kg.

**GSM1900 Measured Results (Continued)**

| Mode         | Coding Scheme | Time Slots | Ch No. | Freq. (MHz) | Reduced Average Power (dBm) |            |               |            | Reduced Average Power (dBm) |            |               |            |
|--------------|---------------|------------|--------|-------------|-----------------------------|------------|---------------|------------|-----------------------------|------------|---------------|------------|
|              |               |            |        |             | Hotspot back-off            |            |               |            | Proximity sensor back-off   |            |               |            |
|              |               |            |        |             | Measured                    |            | Tune-up Limit |            | Measured                    |            | Tune-up Limit |            |
|              |               |            |        |             | Burst Pw r                  | Frame Pw r | Burst Pw r    | Frame Pw r | Burst Pw r                  | Frame Pw r | Burst Pw r    | Frame Pw r |
| GSM (Voice)  | CS1           | 1          | 512    | 1850.2      | 26.4                        | 17.3       | 27.0          | 18.0       | 26.4                        | 17.3       | 27.0          | 18.0       |
|              |               |            | 661    | 1880.0      | 26.1                        | 17.1       |               |            | 26.1                        | 17.1       |               |            |
|              |               |            | 810    | 1909.8      | 26.4                        | 17.4       |               |            | 26.4                        | 17.4       |               |            |
| GPRS (GMSK)  | CS1           | 1          | 512    | 1850.2      | 26.4                        | 17.4       | 27.0          | 18.0       | 26.3                        | 17.3       | 27.0          | 18.0       |
|              |               |            | 661    | 1880.0      | 26.1                        | 17.1       |               |            | 26.1                        | 17.0       |               |            |
|              |               |            | 810    | 1909.8      | 26.4                        | 17.4       |               |            | 26.4                        | 17.3       |               |            |
|              |               | 2          | 512    | 1850.2      | 23.3                        | 17.3       | 24.5          | 18.5       | 23.3                        | 17.2       | 24.5          | 18.5       |
|              |               |            | 661    | 1880.0      | 23.2                        | 17.2       |               |            | 23.3                        | 17.3       |               |            |
|              |               |            | 810    | 1909.8      | 23.6                        | 17.6       |               |            | 23.5                        | 17.5       |               |            |
|              |               | 3          | 512    | 1850.2      | 21.5                        | 17.3       | 22.5          | 18.2       | 21.5                        | 17.2       | 22.5          | 18.2       |
|              |               |            | 661    | 1880.0      | 21.3                        | 17.0       |               |            | 21.2                        | 17.0       |               |            |
|              |               |            | 810    | 1909.8      | 21.5                        | 17.3       |               |            | 21.5                        | 17.3       |               |            |
|              |               | 4          | 512    | 1850.2      | 20.1                        | 17.1       | 21.0          | 18.0       | 20.0                        | 17.0       | 21.0          | 18.0       |
|              |               |            | 661    | 1880.0      | 19.8                        | 16.8       |               |            | 19.8                        | 16.8       |               |            |
|              |               |            | 810    | 1909.8      | 20.0                        | 17.0       |               |            | 20.0                        | 17.0       |               |            |
| EGPRS (8PSK) | MCS5          | 1          | 512    | 1850.2      |                             |            |               |            |                             |            |               |            |
|              |               |            | 661    | 1880.0      |                             |            |               |            |                             |            |               |            |
|              |               |            | 810    | 1909.8      |                             |            |               |            |                             |            |               |            |
|              |               | 2          | 512    | 1850.2      |                             |            |               |            |                             |            |               |            |
|              |               |            | 661    | 1880.0      |                             |            |               |            |                             |            |               |            |
|              |               |            | 810    | 1909.8      |                             |            |               |            |                             |            |               |            |
|              |               | 3          | 512    | 1850.2      |                             |            |               |            |                             |            |               |            |
|              |               |            | 661    | 1880.0      |                             |            |               |            |                             |            |               |            |
|              |               |            | 810    | 1909.8      |                             |            |               |            |                             |            |               |            |
|              |               | 4          | 512    | 1850.2      |                             |            |               |            |                             |            |               |            |
|              |               |            | 661    | 1880.0      |                             |            |               |            |                             |            |               |            |
|              |               |            | 810    | 1909.8      |                             |            |               |            |                             |            |               |            |

**Notes:**

The worst-case configuration and mode for SAR testing is determined to be as follows:

- GMSK (GPRS) mode with 1 time slot for Max power & 2 time slots for Reduced power, based on the Tune-up Procedure. Refer to §6.3.
- SAR is not required for EGPRS (8PSK) mode because the maximum output power and tune-up limit is  $\leq 1/4\text{dB}$  higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is  $\leq 1.2\text{W/kg}$ .

## 9.2. W-CDMA

### Release 99 Setup Procedures used to establish the test signals

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).

| Mode                   | Subtest                 | Rel99        |
|------------------------|-------------------------|--------------|
| WCDMA General Settings | Loopback Mode           | Test Mode 2  |
|                        | Rel99 RMC               | 12.2kbps RMC |
|                        | Power Control Algorithm | Algorithm2   |
|                        | $\beta_c/\beta_d$       | 8/15         |

### HSDPA Setup Procedures used to establish the test signals

The following 4 Sub-tests were completed according to Release 5 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

|                         | Mode                                 | HSDPA        | HSDPA | HSDPA | HSDPA |
|-------------------------|--------------------------------------|--------------|-------|-------|-------|
|                         | Subtest                              | 1            | 2     | 3     | 4     |
| W-CDMA General Settings | Loopback Mode                        | Test Mode 1  |       |       |       |
|                         | Rel99 RMC                            | 12.2kbps RMC |       |       |       |
|                         | HSDPA FRC                            | H-Set 1      |       |       |       |
|                         | Power Control Algorithm              | Algorithm 2  |       |       |       |
|                         | $\beta_c$                            | 2/15         | 11/15 | 15/15 | 15/15 |
|                         | $\beta_d$                            | 15/15        | 15/15 | 8/15  | 4/15  |
|                         | Bd (SF)                              | 64           |       |       |       |
|                         | $\beta_c/\beta_d$                    | 2/15         | 11/15 | 15/8  | 15/4  |
|                         | $\beta_{hs}$                         | 4/15         | 24/15 | 30/15 | 30/15 |
|                         | MPR (dB)                             | 0            | 0     | 0.5   | 0.5   |
| HSDPA Specific Settings | $D_{ACK}$                            | 8            |       |       |       |
|                         | $D_{NAK}$                            | 8            |       |       |       |
|                         | DCQI                                 | 8            |       |       |       |
|                         | Ack-Nack repetition factor           | 3            |       |       |       |
|                         | CQI Feedback (Table 5.2B.4)          | 4ms          |       |       |       |
|                         | CQI Repetition Factor (Table 5.2B.4) | 2            |       |       |       |
|                         | $A_{hs}=\beta_{hs}/\beta_c$          | 30/15        |       |       |       |

**HSPA (HSDPA & HSUPA) Setup Procedures used to establish the test signals**

The following 5 Sub-tests were completed according to Release 6 procedures in table C.11.1.3 of 3GPP TS 34.121-1 v13.  
A summary of these settings are illustrated below:

|                               | Mode                                 | HSPA          |       |       |       |             |
|-------------------------------|--------------------------------------|---------------|-------|-------|-------|-------------|
|                               | Subtest                              | 1             | 2     | 3     | 4     | 5           |
| WCDMA<br>General<br>Settings  | Loopback Mode                        | Test Mode 1   |       |       |       |             |
|                               | Rel99 RMC                            | 12.2 kbps RMC |       |       |       |             |
|                               | HSDPA FRC                            | H-Set 1       |       |       |       |             |
|                               | HSUPA Test                           | HSPA          |       |       |       |             |
|                               | Power Control Algorithm              | Algorithm 2   |       |       |       | Algorithm 1 |
|                               | $\beta_c$                            | 11/15         | 6/15  | 15/15 | 2/15  | 15/15       |
|                               | $\beta_d$                            | 15/15         | 15/15 | 9/15  | 15/15 | 0           |
|                               | $\beta_{ec}$                         | 209/225       | 12/15 | 30/15 | 2/15  | 5/15        |
|                               | $\beta_c/\beta_d$                    | 11/15         | 6/15  | 15/9  | 2/15  | -           |
|                               | $\beta_{hs}$                         | 22/15         | 12/15 | 30/15 | 4/15  | 5/15        |
|                               | $\beta_{ed}$                         | 1309/225      | 94/75 | 47/15 | 56/75 | 47/15       |
| HSDPA<br>Specific<br>Settings | CM (dB)                              | 1             | 3     | 2     | 3     | 1           |
|                               | MPR (dB)                             | 0             | 2     | 1     | 2     | 0           |
|                               | DACK                                 | 8             |       |       |       | 0           |
|                               | DNAK                                 | 8             |       |       |       | 0           |
|                               | DCQI                                 | 8             |       |       |       | 0           |
|                               | Ack-Nack repetition factor           | 3             |       |       |       |             |
|                               | CQI Feedback (Table 5.2B.4)          | 4ms           |       |       |       |             |
| HSUPA<br>Specific<br>Settings | CQI Repetition Factor (Table 5.2B.4) | 2             |       |       |       |             |
|                               | $A_{hs} = \beta_{hs}/\beta_c$        | 30/15         |       |       |       |             |
|                               | E-DPDCH                              | 6             | 8     | 8     | 5     | 0           |
|                               | DHARQ                                | 0             | 0     | 0     | 0     | 0           |
|                               | AG Index                             | 20            | 12    | 15    | 17    | 12          |
|                               | ETFCI (from 34.121 Table C.11.1.3)   | 75            | 67    | 92    | 71    | 67          |
|                               | Associated Max UL Data Rate kbps     | 242.1         | 174.9 | 482.8 | 205.8 | 308.9       |
|                               | Reference E-TFCIs                    | 5             | 5     | 2     | 5     | 1           |
|                               | Reference E-TFCI                     | 11            | 11    | 11    | 11    | 67          |
|                               | Reference E-TFCI PO                  | 4             | 4     | 4     | 4     | 18          |
|                               | Reference E-TFCI                     | 67            | 67    | 92    | 67    | 67          |
|                               | Reference E-TFCI PO                  | 18            | 18    | 18    | 18    | 18          |
|                               | Reference E-TFCI                     | 71            | 71    | 71    | 71    | 71          |
|                               | Reference E-TFCI PO                  | 23            | 23    | 23    | 23    | 23          |
|                               | Reference E-TFCI                     | 75            | 75    | 75    | 75    | 75          |
|                               | Reference E-TFCI PO                  | 26            | 26    | 26    | 26    | 26          |
|                               | Reference E-TFCI                     | 81            | 81    | 81    | 81    | 81          |
|                               | Reference E-TFCI PO                  | 27            | 27    | 27    | 27    | 27          |
|                               | Maximum Channelization Codes         | 2xSF2         |       |       |       | SF4         |

**DC-HSDPA Setup Procedures used to establish the test signals**

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

**Table E.5.0: Levels for HSDPA connection setup**

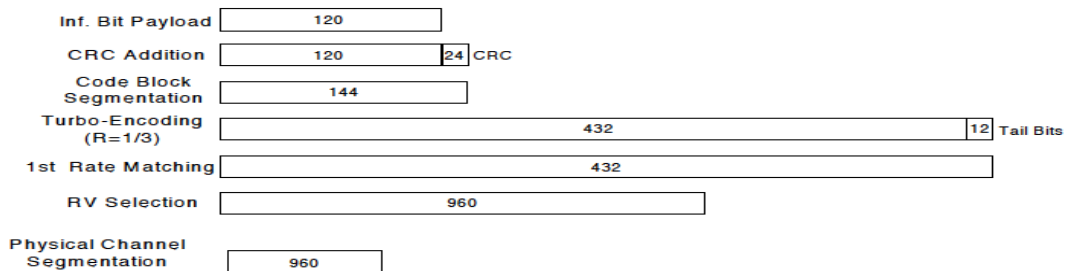
| Parameter During Connection setup | Unit | Value |
|-----------------------------------|------|-------|
| P-CPICH $E_c/I_{or}$              | dB   | -10   |
| P-CCPCH and SCH $E_c/I_{or}$      | dB   | -12   |
| PICH $E_c/I_{or}$                 | dB   | -15   |
| HS-PDSCH                          | dB   | off   |
| HS-SCCH_1                         | dB   | off   |
| DPCH $E_c/I_{or}$                 | dB   | -5    |
| OCNS $E_c/I_{or}$                 | dB   | -3.1  |

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

**Table C.8.1.12: Fixed Reference Channel H-Set 12**

| Parameter                                                                                                                                              | Unit       | Value |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------|
| Nominal Avg. Inf. Bit Rate                                                                                                                             | kbps       | 60    |
| Inter-TTI Distance                                                                                                                                     | TTI's      | 1     |
| Number of HARQ Processes                                                                                                                               | Proces ses | 6     |
| Information Bit Payload ( $N_{INF}$ )                                                                                                                  | Bits       | 120   |
| Number Code Blocks                                                                                                                                     | Blocks     | 1     |
| Binary Channel Bits Per TTI                                                                                                                            | Bits       | 960   |
| Total Available SML's in UE                                                                                                                            | SML's      | 19200 |
| Number of SML's per HARQ Proc.                                                                                                                         | SML's      | 3200  |
| Coding Rate                                                                                                                                            |            | 0.15  |
| Number of Physical Channel Codes                                                                                                                       | Codes      | 1     |
| Modulation                                                                                                                                             |            | QPSK  |
| Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.               |            |       |
| Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used. |            |       |

**Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)**

The following 4 Sub-tests for HSDPA were completed according to Release 8 procedures in section 5.2 of 3GPP TS34.121. A summary of subtest settings are illustrated below:

|                         | Mode                                  | HSDPA        | HSDPA | HSDPA | HSDPA |
|-------------------------|---------------------------------------|--------------|-------|-------|-------|
|                         | Subtest                               | 1            | 2     | 3     | 4     |
| WCDMA General Settings  | Loopback Mode                         | Test Mode 1  |       |       |       |
|                         | Rel99 RMC                             | 12.2kbps RMC |       |       |       |
|                         | HSDPA FRC                             | H-Set 12     |       |       |       |
|                         | Power Control Algorithm               | Algorithm2   |       |       |       |
|                         | $\beta_c$                             | 2/15         | 11/15 | 15/15 | 15/15 |
|                         | $\beta_d$                             | 15/15        | 15/15 | 8/15  | 4/15  |
|                         | $\beta_d$ (SF)                        | 64           |       |       |       |
|                         | $\beta_c/\beta_d$                     | 2/15         | 11/15 | 15/8  | 15/4  |
|                         | $\beta_{hs}$                          | 4/15         | 24/15 | 30/15 | 30/15 |
| HSDPA Specific Settings | MPR (dB)                              | 0            | 0     | 0.5   | 0.5   |
|                         | DACK                                  | 8            |       |       |       |
|                         | DNAK                                  | 8            |       |       |       |
|                         | DCQI                                  | 8            |       |       |       |
|                         | Ack-Nack Repetition factor            | 3            |       |       |       |
|                         | CQI Feedback                          | 4ms          |       |       |       |
|                         | CQI Repetition Factor                 | 2            |       |       |       |
|                         | A $\beta_{hs}$ = $\beta_{hs}/\beta_c$ | 30/15        |       |       |       |

**HSPA+**

HSPA+ is only supported to down link. Therefore, the RF conducted power is not measured.

**W-CDMA Band II Measured Results**

| Mode       |                            | UL Ch No. | Freq.<br>(MHz) | Maximum Average Power<br>(dBm) |     |               | Reduced Average Power (dBm)<br>Hotspot back-off |     |               | Reduced Average Power (dBm)<br>Proximity sensor back-off |     |               |
|------------|----------------------------|-----------|----------------|--------------------------------|-----|---------------|-------------------------------------------------|-----|---------------|----------------------------------------------------------|-----|---------------|
|            |                            |           |                | Measured Pwr                   | MPR | Tune-up Limit | Measured Pwr                                    | MPR | Tune-up Limit | Measured Pwr                                             | MPR | Tune-up Limit |
| Release 99 | Rel 99<br>(RMC, 12.2 kbps) | 9262      | 1852.4         | 22.1                           | N/A | 23.0          | 18.3                                            | N/A | 19.5          | 18.3                                                     | N/A | 19.5          |
|            |                            | 9400      | 1880.0         | 21.6                           |     |               | 17.8                                            |     |               | 17.8                                                     |     |               |
|            |                            | 9538      | 1907.6         | 22.0                           |     |               | 18.2                                            |     |               | 18.3                                                     |     |               |
| HSDPA      | Subtest 1                  | 9262      | 1852.4         | 22.1                           | 0   | 22.5          | 18.3                                            | 0   | 19.0          | 18.4                                                     | 0   | 19.0          |
|            |                            | 9400      | 1880.0         | 21.7                           |     |               | 17.8                                            |     |               | 17.8                                                     |     |               |
|            |                            | 9538      | 1907.6         | 21.9                           |     |               | 18.2                                            |     |               | 18.2                                                     |     |               |
|            | Subtest 2                  | 9262      | 1852.4         | 21.5                           | 0   | 22.5          | 18.2                                            | 0   | 19.0          | 18.4                                                     | 0   | 19.0          |
|            |                            | 9400      | 1880.0         | 21.1                           |     |               | 17.8                                            |     |               | 17.8                                                     |     |               |
|            |                            | 9538      | 1907.6         | 21.4                           |     |               | 18.1                                            |     |               | 18.3                                                     |     |               |
|            | Subtest 3                  | 9262      | 1852.4         | 21.0                           | 0.5 | 22.0          | 18.2                                            | 0   | 19.0          | 18.4                                                     | 0   | 19.0          |
|            |                            | 9400      | 1880.0         | 20.6                           |     |               | 17.7                                            |     |               | 17.8                                                     |     |               |
|            |                            | 9538      | 1907.6         | 20.9                           |     |               | 18.1                                            |     |               | 18.2                                                     |     |               |
|            | Subtest 4                  | 9262      | 1852.4         | 20.5                           | 0.5 | 22.0          | 18.2                                            | 0   | 19.0          | 18.3                                                     | 0   | 19.0          |
|            |                            | 9400      | 1880.0         | 20.0                           |     |               | 17.7                                            |     |               | 17.8                                                     |     |               |
|            |                            | 9538      | 1907.6         | 20.4                           |     |               | 18.2                                            |     |               | 18.2                                                     |     |               |
| HSUPA      | Subtest 1                  | 9262      | 1852.4         | 19.1                           | 1   | 20.0          | 17.2                                            | 0   | 19.0          | 17.3                                                     | 0   | 19.0          |
|            |                            | 9400      | 1880.0         | 18.7                           |     |               | 16.8                                            |     |               | 16.8                                                     |     |               |
|            |                            | 9538      | 1907.6         | 19.0                           |     |               | 17.1                                            |     |               | 17.2                                                     |     |               |
|            | Subtest 2                  | 9262      | 1852.4         | 17.6                           | 2   | 19.0          | 17.2                                            | 0   | 19.0          | 17.2                                                     | 0   | 19.0          |
|            |                            | 9400      | 1880.0         | 17.1                           |     |               | 16.8                                            |     |               | 16.8                                                     |     |               |
|            |                            | 9538      | 1907.6         | 17.4                           |     |               | 17.1                                            |     |               | 17.2                                                     |     |               |
|            | Subtest 3                  | 9262      | 1852.4         | 20.9                           | 0   | 21.0          | 17.2                                            | 0   | 19.0          | 17.3                                                     | 0   | 19.0          |
|            |                            | 9400      | 1880.0         | 20.6                           |     |               | 16.8                                            |     |               | 16.8                                                     |     |               |
|            |                            | 9538      | 1907.6         | 20.9                           |     |               | 17.1                                            |     |               | 17.2                                                     |     |               |
|            | Subtest 4                  | 9262      | 1852.4         | 17.5                           | 2   | 19.0          | 17.2                                            | 0   | 19.0          | 17.3                                                     | 0   | 19.0          |
|            |                            | 9400      | 1880.0         | 17.1                           |     |               | 16.8                                            |     |               | 16.8                                                     |     |               |
|            |                            | 9538      | 1907.6         | 17.4                           |     |               | 17.1                                            |     |               | 17.2                                                     |     |               |
|            | Subtest 5                  | 9262      | 1852.4         | 20.1                           | 0   | 21.0          | 18.3                                            | 0   | 19.0          | 18.3                                                     | 0   | 19.0          |
|            |                            | 9400      | 1880.0         | 19.7                           |     |               | 17.8                                            |     |               | 17.9                                                     |     |               |
|            |                            | 9538      | 1907.6         | 20.0                           |     |               | 18.2                                            |     |               | 18.3                                                     |     |               |
| DC-HSDPA   | Subtest 1                  | 9262      | 1852.4         | 22.1                           | 0   | 22.5          | 18.3                                            | 0   | 19.0          | 18.3                                                     | 0   | 19.0          |
|            |                            | 9400      | 1880.0         | 21.7                           |     |               | 17.9                                            |     |               | 17.8                                                     |     |               |
|            |                            | 9538      | 1907.6         | 21.9                           |     |               | 18.1                                            |     |               | 18.1                                                     |     |               |
|            | Subtest 2                  | 9262      | 1852.4         | 21.4                           | 0   | 22.5          | 18.3                                            | 0   | 19.0          | 18.3                                                     | 0   | 19.0          |
|            |                            | 9400      | 1880.0         | 21.1                           |     |               | 17.9                                            |     |               | 17.9                                                     |     |               |
|            |                            | 9538      | 1907.6         | 21.4                           |     |               | 18.1                                            |     |               | 18.1                                                     |     |               |
|            | Subtest 3                  | 9262      | 1852.4         | 19.9                           | 0.5 | 22.0          | 18.3                                            | 0   | 19.0          | 18.3                                                     | 0   | 19.0          |
|            |                            | 9400      | 1880.0         | 19.7                           |     |               | 17.9                                            |     |               | 17.9                                                     |     |               |
|            |                            | 9538      | 1907.6         | 19.9                           |     |               | 18.1                                            |     |               | 18.1                                                     |     |               |
|            | Subtest 4                  | 9262      | 1852.4         | 20.9                           | 0.5 | 22.0          | 18.3                                            | 0   | 19.0          | 18.3                                                     | 0   | 19.0          |
|            |                            | 9400      | 1880.0         | 20.6                           |     |               | 17.9                                            |     |               | 17.9                                                     |     |               |
|            |                            | 9538      | 1907.6         | 20.8                           |     |               | 18.1                                            |     |               | 18.1                                                     |     |               |

**W-CDMA Band IV Measured Results**

| Mode       |                            | UL Ch No. | Freq.<br>(MHz) | Maximum Average Power<br>(dBm) |     |               | Reduced Average Power (dBm)<br>Hotspot back-off |     |               | Reduced Average Power (dBm)<br>Proximity sensor back-off |     |               |
|------------|----------------------------|-----------|----------------|--------------------------------|-----|---------------|-------------------------------------------------|-----|---------------|----------------------------------------------------------|-----|---------------|
|            |                            |           |                | Measured Pwr                   | MPR | Tune-up Limit | Measured Pwr                                    | MPR | Tune-up Limit | Measured Pwr                                             | MPR | Tune-up Limit |
| Release 99 | Rel 99<br>(RMC, 12.2 kbps) | 1312      | 1712.4         | 22.3                           | N/A | 23.5          | 18.6                                            | N/A | 19.5          | 18.5                                                     | N/A | 19.5          |
|            |                            | 1413      | 1732.6         | 22.4                           |     |               | 18.7                                            |     |               | 18.6                                                     |     |               |
|            |                            | 1513      | 1752.6         | 22.1                           |     |               | 18.4                                            |     |               | 18.2                                                     |     |               |
| HSDPA      | Subtest 1                  | 1312      | 1712.4         | 21.2                           | 0   | 22.5          | 18.7                                            | 0   | 19.0          | 18.5                                                     | 0   | 19.0          |
|            |                            | 1413      | 1732.6         | 21.3                           |     |               | 18.6                                            |     |               | 18.6                                                     |     |               |
|            |                            | 1513      | 1752.6         | 21.0                           |     |               | 18.4                                            |     |               | 18.3                                                     |     |               |
|            | Subtest 2                  | 1312      | 1712.4         | 20.8                           | 0   | 22.5          | 18.6                                            | 0   | 19.0          | 18.5                                                     | 0   | 19.0          |
|            |                            | 1413      | 1732.6         | 20.8                           |     |               | 18.6                                            |     |               | 18.5                                                     |     |               |
|            |                            | 1513      | 1752.6         | 20.5                           |     |               | 18.4                                            |     |               | 18.2                                                     |     |               |
|            | Subtest 3                  | 1312      | 1712.4         | 21.2                           | 0.5 | 22.0          | 18.6                                            | 0   | 19.0          | 18.5                                                     | 0   | 19.0          |
|            |                            | 1413      | 1732.6         | 21.3                           |     |               | 18.6                                            |     |               | 18.5                                                     |     |               |
|            |                            | 1513      | 1752.6         | 21.0                           |     |               | 18.3                                            |     |               | 18.2                                                     |     |               |
|            | Subtest 4                  | 1312      | 1712.4         | 20.8                           | 0.5 | 22.0          | 18.6                                            | 0   | 19.0          | 18.5                                                     | 0   | 19.0          |
|            |                            | 1413      | 1732.6         | 20.8                           |     |               | 18.6                                            |     |               | 18.6                                                     |     |               |
|            |                            | 1513      | 1752.6         | 20.5                           |     |               | 18.4                                            |     |               | 18.3                                                     |     |               |
| HSUPA      | Subtest 1                  | 1312      | 1712.4         | 19.8                           | 0   | 21.5          | 17.6                                            | 0   | 19.0          | 17.5                                                     | 0   | 19.0          |
|            |                            | 1413      | 1732.6         | 19.8                           |     |               | 17.7                                            |     |               | 17.5                                                     |     |               |
|            |                            | 1513      | 1752.6         | 19.5                           |     |               | 17.4                                            |     |               | 17.2                                                     |     |               |
|            | Subtest 2                  | 1312      | 1712.4         | 18.8                           | 2   | 19.5          | 17.5                                            | 0   | 19.0          | 17.5                                                     | 0   | 19.0          |
|            |                            | 1413      | 1732.6         | 18.9                           |     |               | 17.6                                            |     |               | 17.5                                                     |     |               |
|            |                            | 1513      | 1752.6         | 18.5                           |     |               | 17.2                                            |     |               | 17.2                                                     |     |               |
|            | Subtest 3                  | 1312      | 1712.4         | 21.0                           | 0   | 21.5          | 17.5                                            | 0   | 19.0          | 17.5                                                     | 0   | 19.0          |
|            |                            | 1413      | 1732.6         | 21.1                           |     |               | 17.6                                            |     |               | 17.5                                                     |     |               |
|            |                            | 1513      | 1752.6         | 20.8                           |     |               | 17.4                                            |     |               | 17.2                                                     |     |               |
|            | Subtest 4                  | 1312      | 1712.4         | 18.8                           | 2   | 19.5          | 17.5                                            | 0   | 19.0          | 17.5                                                     | 0   | 19.0          |
|            |                            | 1413      | 1732.6         | 18.9                           |     |               | 17.7                                            |     |               | 17.5                                                     |     |               |
|            |                            | 1513      | 1752.6         | 18.5                           |     |               | 17.4                                            |     |               | 17.2                                                     |     |               |
|            | Subtest 5                  | 1312      | 1712.4         | 20.9                           | 0   | 21.5          | 18.8                                            | 0   | 19.0          | 18.6                                                     | 0   | 19.0          |
|            |                            | 1413      | 1732.6         | 20.9                           |     |               | 18.8                                            |     |               | 18.7                                                     |     |               |
|            |                            | 1513      | 1752.6         | 20.6                           |     |               | 18.4                                            |     |               | 18.3                                                     |     |               |
| DC-HSDPA   | Subtest 1                  | 1312      | 1712.4         | 21.3                           | 0   | 21.5          | 18.6                                            | 0   | 19.0          | 18.5                                                     | 0   | 19.0          |
|            |                            | 1413      | 1732.6         | 21.2                           |     |               | 18.6                                            |     |               | 18.5                                                     |     |               |
|            |                            | 1513      | 1752.6         | 21.3                           |     |               | 18.6                                            |     |               | 18.5                                                     |     |               |
|            | Subtest 2                  | 1312      | 1712.4         | 20.8                           | 0   | 21.5          | 18.7                                            | 0   | 19.0          | 18.5                                                     | 0   | 19.0          |
|            |                            | 1413      | 1732.6         | 20.8                           |     |               | 18.5                                            |     |               | 18.5                                                     |     |               |
|            |                            | 1513      | 1752.6         | 20.8                           |     |               | 18.6                                            |     |               | 18.5                                                     |     |               |
|            | Subtest 3                  | 1312      | 1712.4         | 19.8                           | 0.5 | 21.0          | 18.7                                            | 0   | 19.0          | 18.5                                                     | 0   | 19.0          |
|            |                            | 1413      | 1732.6         | 19.8                           |     |               | 18.6                                            |     |               | 18.5                                                     |     |               |
|            |                            | 1513      | 1752.6         | 19.8                           |     |               | 18.6                                            |     |               | 18.5                                                     |     |               |
|            | Subtest 4                  | 1312      | 1712.4         | 20.8                           | 0.5 | 21.0          | 18.7                                            | 0   | 19.0          | 18.5                                                     | 0   | 19.0          |
|            |                            | 1413      | 1732.6         | 20.8                           |     |               | 18.5                                            |     |               | 18.5                                                     |     |               |
|            |                            | 1513      | 1752.6         | 20.8                           |     |               | 18.6                                            |     |               | 18.5                                                     |     |               |

**W-CDMA Band V Measured Results**

| Mode       |                            | UL Ch No. | Freq.<br>(MHz) | Maximum Average Power<br>(dBm) |     |               |
|------------|----------------------------|-----------|----------------|--------------------------------|-----|---------------|
|            |                            |           |                | Measured Pwr                   | MPR | Tune-up Limit |
| Release 99 | Rel 99<br>(RMC, 12.2 kbps) | 4132      | 826.4          | 24.2                           | N/A | 25.0          |
|            |                            | 4183      | 836.6          | 24.2                           |     |               |
|            |                            | 4233      | 846.6          | 23.9                           |     |               |
| HSDPA      | Subtest 1                  | 4132      | 826.4          | 22.5                           | 0   | 23.0          |
|            |                            | 4183      | 836.6          | 22.6                           |     |               |
|            |                            | 4233      | 846.6          | 22.2                           |     |               |
|            | Subtest 2                  | 4132      | 826.4          | 21.9                           | 0   | 23.0          |
|            |                            | 4183      | 836.6          | 22.0                           |     |               |
|            |                            | 4233      | 846.6          | 21.7                           |     |               |
|            | Subtest 3                  | 4132      | 826.4          | 21.5                           | 0.5 | 22.5          |
|            |                            | 4183      | 836.6          | 21.5                           |     |               |
|            |                            | 4233      | 846.6          | 21.2                           |     |               |
|            | Subtest 4                  | 4132      | 826.4          | 20.9                           | 0.5 | 22.5          |
|            |                            | 4183      | 836.6          | 21.0                           |     |               |
|            |                            | 4233      | 846.6          | 20.7                           |     |               |
| HSUPA      | Subtest 1                  | 4132      | 826.4          | 21.5                           | 0   | 23.0          |
|            |                            | 4183      | 836.6          | 21.5                           |     |               |
|            |                            | 4233      | 846.6          | 21.2                           |     |               |
|            | Subtest 2                  | 4132      | 826.4          | 19.5                           | 2   | 21.0          |
|            |                            | 4183      | 836.6          | 19.5                           |     |               |
|            |                            | 4233      | 846.6          | 19.2                           |     |               |
|            | Subtest 3                  | 4132      | 826.4          | 20.5                           | 1   | 22.0          |
|            |                            | 4183      | 836.6          | 20.5                           |     |               |
|            |                            | 4233      | 846.6          | 20.2                           |     |               |
|            | Subtest 4                  | 4132      | 826.4          | 19.5                           | 2   | 21.0          |
|            |                            | 4183      | 836.6          | 19.5                           |     |               |
|            |                            | 4233      | 846.6          | 19.2                           |     |               |
|            | Subtest 5                  | 4132      | 826.4          | 22.6                           | 0   | 23.0          |
|            |                            | 4183      | 836.6          | 22.6                           |     |               |
|            |                            | 4233      | 846.6          | 22.3                           |     |               |
| DC-HSDPA   | Subtest 1                  | 4132      | 826.4          | 22.5                           | 0   | 23.0          |
|            |                            | 4183      | 836.6          | 22.6                           |     |               |
|            |                            | 4233      | 846.6          | 22.5                           |     |               |
|            | Subtest 2                  | 4132      | 826.4          | 22.0                           | 0   | 23.0          |
|            |                            | 4183      | 836.6          | 22.0                           |     |               |
|            |                            | 4233      | 846.6          | 21.9                           |     |               |
|            | Subtest 3                  | 4132      | 826.4          | 20.5                           | 0.5 | 22.5          |
|            |                            | 4183      | 836.6          | 20.5                           |     |               |
|            |                            | 4233      | 846.6          | 20.5                           |     |               |
|            | Subtest 4                  | 4132      | 826.4          | 21.0                           | 0.5 | 22.5          |
|            |                            | 4183      | 836.6          | 21.0                           |     |               |
|            |                            | 4233      | 846.6          | 21.0                           |     |               |

### 9.3. LTE

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3**

| Modulation | Channel bandwidth / Transmission bandwidth ( $N_{RB}$ ) |          |          |           |           |           | MPR (dB) |
|------------|---------------------------------------------------------|----------|----------|-----------|-----------|-----------|----------|
|            | 1.4 MHz                                                 | 3.0 MHz  | 5 MHz    | 10 MHz    | 15 MHz    | 20 MHz    |          |
| QPSK       | > 5                                                     | > 4      | > 8      | > 12      | > 16      | > 18      | $\leq 1$ |
| 16 QAM     | $\leq 5$                                                | $\leq 4$ | $\leq 8$ | $\leq 12$ | $\leq 16$ | $\leq 18$ | $\leq 1$ |
| 64 QAM     | > 5                                                     | > 4      | > 8      | > 12      | > 16      | > 18      | $\leq 2$ |
| 256 QAM    | $\leq 5$                                                | $\leq 4$ | $\leq 8$ | $\leq 12$ | $\leq 16$ | $\leq 18$ | $\leq 2$ |
| 64 QAM     | > 5                                                     | > 4      | > 8      | > 12      | > 16      | > 18      | $\leq 3$ |
| 256 QAM    | $\geq 1$                                                |          |          |           |           |           | $\leq 5$ |

The allowed A-MPR values specified below in Table 6.2.4-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS\_01".

**Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)**

| Network Signalling value | Requirements (subclause) | E-UTRA Band | Channel bandwidth (MHz) | Resources Blocks ( $N_{RB}$ ) | A-MPR (dB) |
|--------------------------|--------------------------|-------------|-------------------------|-------------------------------|------------|
| NS_01                    | 6.6.2.1.1                | Table 5.5-1 | 1.4, 3, 5, 10, 15, 20   | Table 5.6-1                   | N/A        |

#### **Maximum Output Power (Tune-up Limit) for LTE**

According to April 2015 TCB workshop, SAR test exclusion can be applied for testing overlapping LTE bands as follows:

- The maximum output power, including tolerance, for the smaller band must be  $\leq$  the larger band to qualify for the SAR test exclusion.
- The channel bandwidth and other operating parameters for the smaller band must be fully supported by the larger band.
  - LTE Band 2 (1850 – 1910 MHz) is covered by LTE Band 25 (1850 – 1915 MHz)
  - LTE Band 4 (1710 – 1755 MHz) is covered by LTE Band 66 (1710 – 1780 MHz)
  - LTE Band 5 (824 – 849 MHz) is covered by LTE Band 26 (814 – 849 MHz)
  - LTE Band 17 (704 – 716 MHz) is covered by LTE Band 12 (699 – 716 MHz)

Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths.

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 per KDB 941225 D05 SAR for LTE Devices.

LTE QPSK configuration has the highest maximum average output power per 3GPP standard.

SAR measurement is not required for Higher order modulations. When the highest maximum output power for Higher order modulations are  $\leq 0.5$  dB higher than the QPSK or when the reported SAR for QPSK configuration is  $\leq 1.45$  W/kg.

#### **Note(s):**

For Proximity Sensor back-off mode, LTE Band 2/4 have higher target power than LTE Band 25/66, therefore power measurement and required SAR test in Product Specific 10-g SAR with 0mm for LTE Band 2/4 were performed.

# 1. Max power Results

## LTE Band 12 Measured Results

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Maximum Average Power (dBm) |           |           |     |                  |
|-------------|--------|------------------|--------------|-----------------------------|-----------|-----------|-----|------------------|
|             |        |                  |              | Measured Pwr (dBm)          |           |           | MPR | Tune-up<br>Limit |
|             |        |                  |              | 23060                       | 23095     | 23130     |     |                  |
|             |        |                  |              | 704 MHz                     | 707.5 MHz | 711 MHz   |     |                  |
| 10 MHz      | QPSK   | 1                | 0            |                             | 24.1      |           | 0.0 | 25.0             |
|             |        | 1                | 25           |                             | 24.0      |           | 0.0 | 25.0             |
|             |        | 1                | 49           |                             | 24.1      |           | 0.0 | 25.0             |
|             |        | 25               | 0            |                             | 23.0      |           | 1.0 | 24.0             |
|             |        | 25               | 12           |                             | 23.0      |           | 1.0 | 24.0             |
|             |        | 25               | 25           |                             | 23.0      |           | 1.0 | 24.0             |
|             |        | 50               | 0            |                             | 23.0      |           | 1.0 | 24.0             |
|             | 16QAM  | 1                | 0            |                             | 23.3      |           | 1.0 | 24.0             |
|             |        | 1                | 25           |                             | 23.2      |           | 1.0 | 24.0             |
|             |        | 1                | 49           |                             | 23.3      |           | 1.0 | 24.0             |
|             |        | 25               | 0            |                             | 22.1      |           | 2.0 | 23.0             |
|             |        | 25               | 12           |                             | 22.0      |           | 2.0 | 23.0             |
|             |        | 25               | 25           |                             | 22.0      |           | 2.0 | 23.0             |
|             |        | 50               | 0            |                             | 22.0      |           | 2.0 | 23.0             |
|             | 64QAM  | 1                | 0            |                             | 22.1      |           | 2.0 | 23.0             |
|             |        | 1                | 25           |                             | 22.1      |           | 2.0 | 23.0             |
|             |        | 1                | 49           |                             | 22.1      |           | 2.0 | 23.0             |
|             |        | 25               | 0            |                             | 21.0      |           | 3.0 | 22.0             |
|             |        | 25               | 12           |                             | 21.0      |           | 3.0 | 22.0             |
|             |        | 25               | 25           |                             | 21.0      |           | 3.0 | 22.0             |
|             |        | 50               | 0            |                             | 21.0      |           | 3.0 | 22.0             |
|             | 256QAM | 1                | 0            |                             | 19.3      |           | 5.0 | 20.0             |
|             |        | 1                | 25           |                             | 19.2      |           | 5.0 | 20.0             |
|             |        | 1                | 49           |                             | 19.3      |           | 5.0 | 20.0             |
|             |        | 25               | 0            |                             | 19.1      |           | 5.0 | 20.0             |
|             |        | 25               | 12           |                             | 19.1      |           | 5.0 | 20.0             |
|             |        | 25               | 25           |                             | 19.1      |           | 5.0 | 20.0             |
|             |        | 50               | 0            |                             | 19.1      |           | 5.0 | 20.0             |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm)          |           |           | MPR | Tune-up<br>Limit |
|             |        |                  |              | 23035                       | 23095     | 23155     |     |                  |
|             |        |                  |              | 701.5 MHz                   | 707.5 MHz | 713.5 MHz |     |                  |
|             |        |                  |              |                             |           |           |     |                  |
| 5 MHz       | QPSK   | 1                | 0            | 24.1                        | 24.1      | 24.0      | 0.0 | 25.0             |
|             |        | 1                | 12           | 24.2                        | 24.1      | 24.2      | 0.0 | 25.0             |
|             |        | 1                | 24           | 24.2                        | 24.1      | 24.1      | 0.0 | 25.0             |
|             |        | 12               | 0            | 23.2                        | 23.1      | 23.0      | 1.0 | 24.0             |
|             |        | 12               | 7            | 23.2                        | 23.1      | 23.0      | 1.0 | 24.0             |
|             |        | 12               | 13           | 23.2                        | 23.0      | 23.0      | 1.0 | 24.0             |
|             |        | 25               | 0            | 23.2                        | 23.0      | 23.0      | 1.0 | 24.0             |
|             | 16QAM  | 1                | 0            | 23.7                        | 23.4      | 23.4      | 1.0 | 24.0             |
|             |        | 1                | 12           | 23.7                        | 23.5      | 23.5      | 1.0 | 24.0             |
|             |        | 1                | 24           | 23.6                        | 23.5      | 23.5      | 1.0 | 24.0             |
|             |        | 12               | 0            | 22.1                        | 22.1      | 22.1      | 2.0 | 23.0             |
|             |        | 12               | 7            | 22.1                        | 22.1      | 22.1      | 2.0 | 23.0             |
|             |        | 12               | 13           | 22.1                        | 22.2      | 22.1      | 2.0 | 23.0             |
|             |        | 25               | 0            | 22.1                        | 22.1      | 22.0      | 2.0 | 23.0             |
|             | 64QAM  | 1                | 0            | 22.7                        | 22.2      | 22.1      | 2.0 | 23.0             |
|             |        | 1                | 12           | 22.7                        | 22.3      | 22.1      | 2.0 | 23.0             |
|             |        | 1                | 24           | 22.5                        | 22.2      | 22.1      | 2.0 | 23.0             |
|             |        | 12               | 0            | 21.2                        | 21.0      | 21.0      | 3.0 | 22.0             |
|             |        | 12               | 7            | 21.2                        | 21.1      | 21.0      | 3.0 | 22.0             |
|             |        | 12               | 13           | 21.2                        | 21.0      | 21.0      | 3.0 | 22.0             |
|             |        | 25               | 0            | 21.1                        | 21.1      | 21.0      | 3.0 | 22.0             |
|             | 256QAM | 1                | 0            | 19.5                        | 19.3      | 19.1      | 5.0 | 20.0             |
|             |        | 1                | 12           | 19.8                        | 19.1      | 19.1      | 5.0 | 20.0             |
|             |        | 1                | 24           | 19.5                        | 19.2      | 19.1      | 5.0 | 20.0             |
|             |        | 12               | 0            | 19.2                        | 19.1      | 19.0      | 5.0 | 20.0             |
|             |        | 12               | 7            | 19.2                        | 19.1      | 19.0      | 5.0 | 20.0             |
|             |        | 12               | 13           | 19.2                        | 19.1      | 19.0      | 5.0 | 20.0             |
|             |        | 25               | 0            | 19.1                        | 19.1      | 19.0      | 5.0 | 20.0             |

**LTE Band 12 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |           |           | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|-----------|-----------|-----|------------------|
|             |        |                  |              | 23025              | 23095     | 23165     |     |                  |
|             |        |                  |              | 700.5 MHz          | 707.5 MHz | 714.5 MHz |     |                  |
| 3 MHz       | QPSK   | 1                | 0            | 24.3               | 24.2      | 24.1      | 0.0 | 25.0             |
|             |        | 1                | 8            | 24.5               | 24.0      | 24.4      | 0.0 | 25.0             |
|             |        | 1                | 14           | 24.2               | 24.1      | 24.2      | 0.0 | 25.0             |
|             |        | 8                | 0            | 23.1               | 23.1      | 23.0      | 1.0 | 24.0             |
|             |        | 8                | 4            | 23.1               | 23.0      | 23.0      | 1.0 | 24.0             |
|             |        | 8                | 7            | 23.1               | 23.1      | 23.0      | 1.0 | 24.0             |
|             | 16QAM  | 15               | 0            | 23.1               | 23.1      | 23.0      | 1.0 | 24.0             |
|             |        | 1                | 0            | 23.3               | 23.5      | 23.2      | 1.0 | 24.0             |
|             |        | 1                | 8            | 23.5               | 23.5      | 23.4      | 1.0 | 24.0             |
|             |        | 1                | 14           | 23.4               | 23.4      | 23.6      | 1.0 | 24.0             |
|             |        | 8                | 0            | 22.1               | 22.2      | 22.0      | 2.0 | 23.0             |
|             |        | 8                | 4            | 22.1               | 22.1      | 22.0      | 2.0 | 23.0             |
|             | 64QAM  | 8                | 7            | 22.1               | 22.2      | 22.0      | 2.0 | 23.0             |
|             |        | 15               | 0            | 22.1               | 22.1      | 22.0      | 2.0 | 23.0             |
|             |        | 1                | 0            | 22.4               | 22.2      | 21.9      | 2.0 | 23.0             |
|             |        | 1                | 8            | 22.3               | 22.2      | 21.9      | 2.0 | 23.0             |
|             |        | 1                | 14           | 22.3               | 22.2      | 22.1      | 2.0 | 23.0             |
|             |        | 8                | 0            | 21.1               | 21.1      | 21.2      | 3.0 | 22.0             |
|             | 256QAM | 8                | 4            | 21.1               | 21.1      | 21.2      | 3.0 | 22.0             |
|             |        | 8                | 7            | 21.1               | 21.2      | 21.0      | 3.0 | 22.0             |
|             |        | 15               | 0            | 21.1               | 21.0      | 21.0      | 3.0 | 22.0             |
|             |        | 1                | 0            | 19.2               | 19.4      | 19.1      | 5.0 | 20.0             |
|             |        | 1                | 8            | 19.4               | 19.6      | 19.2      | 5.0 | 20.0             |
|             |        | 1                | 14           | 19.2               | 19.4      | 19.3      | 5.0 | 20.0             |
| 1.4 MHz     | QPSK   | 8                | 0            | 19.2               | 19.1      | 19.0      | 5.0 | 20.0             |
|             |        | 8                | 4            | 19.0               | 19.1      | 19.0      | 5.0 | 20.0             |
|             |        | 8                | 7            | 19.1               | 19.1      | 19.1      | 5.0 | 20.0             |
|             |        | 15               | 0            | 19.1               | 19.1      | 19.1      | 5.0 | 20.0             |
|             | 16QAM  | 1                | 0            | 24.0               | 24.0      | 23.9      | 0.0 | 25.0             |
|             |        | 1                | 3            | 23.9               | 23.8      | 23.8      | 0.0 | 25.0             |
|             |        | 1                | 5            | 24.0               | 24.0      | 24.0      | 0.0 | 25.0             |
|             |        | 3                | 0            | 23.9               | 24.0      | 23.9      | 0.0 | 25.0             |
|             |        | 3                | 1            | 23.9               | 24.0      | 23.8      | 0.0 | 25.0             |
|             |        | 3                | 3            | 23.9               | 23.9      | 23.9      | 0.0 | 25.0             |
|             | 64QAM  | 6                | 0            | 23.0               | 22.9      | 22.9      | 1.0 | 24.0             |
|             |        | 1                | 0            | 23.2               | 23.0      | 23.2      | 1.0 | 24.0             |
|             |        | 1                | 3            | 23.2               | 22.8      | 23.1      | 1.0 | 24.0             |
|             |        | 1                | 5            | 23.4               | 23.0      | 23.2      | 1.0 | 24.0             |
|             |        | 3                | 0            | 23.0               | 23.1      | 23.0      | 1.0 | 24.0             |
|             |        | 3                | 1            | 23.0               | 23.1      | 22.9      | 1.0 | 24.0             |
|             | 256QAM | 3                | 3            | 23.0               | 23.1      | 23.0      | 1.0 | 24.0             |
|             |        | 6                | 0            | 22.0               | 22.1      | 22.0      | 2.0 | 23.0             |
|             |        | 1                | 0            | 22.1               | 22.0      | 22.3      | 2.0 | 23.0             |
|             |        | 1                | 3            | 22.2               | 22.2      | 22.1      | 2.0 | 23.0             |
|             |        | 1                | 5            | 22.1               | 22.2      | 22.1      | 2.0 | 23.0             |
|             |        | 3                | 0            | 22.1               | 22.2      | 22.1      | 2.0 | 23.0             |
| 1.4 MHz     | 64QAM  | 3                | 1            | 22.1               | 22.2      | 22.2      | 2.0 | 23.0             |
|             |        | 3                | 3            | 22.1               | 22.0      | 22.1      | 2.0 | 23.0             |
|             |        | 6                | 0            | 21.2               | 21.0      | 21.0      | 3.0 | 22.0             |
|             | 256QAM | 1                | 0            | 19.2               | 19.2      | 18.9      | 5.0 | 20.0             |
|             |        | 1                | 3            | 19.2               | 19.1      | 19.0      | 5.0 | 20.0             |
|             |        | 1                | 5            | 19.2               | 19.1      | 19.0      | 5.0 | 20.0             |
|             | 256QAM | 3                | 0            | 18.9               | 19.1      | 18.9      | 5.0 | 20.0             |
|             |        | 3                | 1            | 18.9               | 19.1      | 18.8      | 5.0 | 20.0             |
|             |        | 3                | 3            | 18.9               | 19.1      | 18.9      | 5.0 | 20.0             |
|             |        | 6                | 0            | 19.0               | 19.0      | 18.9      | 5.0 | 20.0             |

**LTE Band 13 Measured Results**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Maximum Average Power (dBm) |                  |                    |     |                  |
|-------------|--------|------------------|--------------|-----------------------------|------------------|--------------------|-----|------------------|
|             |        |                  |              | Measured Pwr (dBm)          |                  |                    | MPR | Tune-up<br>Limit |
|             |        |                  |              |                             | 23230<br>782 MHz |                    |     |                  |
| 10 MHz      | QPSK   | 1                | 0            |                             | 23.9             |                    | 0.0 | 25.0             |
|             |        | 1                | 25           |                             | 24.0             |                    | 0.0 | 25.0             |
|             |        | 1                | 49           |                             | 24.1             |                    | 0.0 | 25.0             |
|             |        | 25               | 0            |                             | 23.1             |                    | 1.0 | 24.0             |
|             |        | 25               | 12           |                             | 23.1             |                    | 1.0 | 24.0             |
|             |        | 25               | 25           |                             | 23.1             |                    | 1.0 | 24.0             |
|             |        | 50               | 0            |                             | 23.1             |                    | 1.0 | 24.0             |
|             | 16QAM  | 1                | 0            |                             | 23.0             |                    | 1.0 | 24.0             |
|             |        | 1                | 25           |                             | 23.1             |                    | 1.0 | 24.0             |
|             |        | 1                | 49           |                             | 23.2             |                    | 1.0 | 24.0             |
|             |        | 25               | 0            |                             | 22.1             |                    | 2.0 | 23.0             |
|             |        | 25               | 12           |                             | 22.2             |                    | 2.0 | 23.0             |
|             |        | 25               | 25           |                             | 22.2             |                    | 2.0 | 23.0             |
|             |        | 50               | 0            |                             | 22.1             |                    | 2.0 | 23.0             |
|             | 64QAM  | 1                | 0            |                             | 22.2             |                    | 2.0 | 23.0             |
|             |        | 1                | 25           |                             | 22.2             |                    | 2.0 | 23.0             |
|             |        | 1                | 49           |                             | 22.4             |                    | 2.0 | 23.0             |
|             |        | 25               | 0            |                             | 21.1             |                    | 3.0 | 22.0             |
|             |        | 25               | 12           |                             | 21.2             |                    | 3.0 | 22.0             |
|             |        | 25               | 25           |                             | 21.2             |                    | 3.0 | 22.0             |
|             |        | 50               | 0            |                             | 21.1             |                    | 3.0 | 22.0             |
|             | 256QAM | 1                | 0            |                             | 19.4             |                    | 5.0 | 20.0             |
|             |        | 1                | 25           |                             | 19.4             |                    | 5.0 | 20.0             |
|             |        | 1                | 49           |                             | 19.4             |                    | 5.0 | 20.0             |
|             |        | 25               | 0            |                             | 19.1             |                    | 5.0 | 20.0             |
|             |        | 25               | 12           |                             | 19.2             |                    | 5.0 | 20.0             |
|             |        | 25               | 25           |                             | 19.2             |                    | 5.0 | 20.0             |
|             |        | 50               | 0            |                             | 19.1             |                    | 5.0 | 20.0             |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm)          |                  |                    | MPR | Tune-up<br>Limit |
|             |        |                  |              | 23205<br>779.5 MHz          | 23230<br>782 MHz | 23255<br>784.5 MHz |     |                  |
|             |        |                  |              |                             |                  |                    |     |                  |
| 5 MHz       | QPSK   | 1                | 0            |                             | 24.1             |                    | 0.0 | 25.0             |
|             |        | 1                | 12           |                             | 24.3             |                    | 0.0 | 25.0             |
|             |        | 1                | 24           |                             | 24.2             |                    | 0.0 | 25.0             |
|             |        | 12               | 0            |                             | 23.1             |                    | 1.0 | 24.0             |
|             |        | 12               | 7            |                             | 23.1             |                    | 1.0 | 24.0             |
|             |        | 12               | 13           |                             | 23.1             |                    | 1.0 | 24.0             |
|             |        | 25               | 0            |                             | 23.1             |                    | 1.0 | 24.0             |
|             | 16QAM  | 1                | 0            |                             | 23.3             |                    | 1.0 | 24.0             |
|             |        | 1                | 12           |                             | 23.3             |                    | 1.0 | 24.0             |
|             |        | 1                | 24           |                             | 23.5             |                    | 1.0 | 24.0             |
|             |        | 12               | 0            |                             | 22.1             |                    | 2.0 | 23.0             |
|             |        | 12               | 7            |                             | 22.1             |                    | 2.0 | 23.0             |
|             |        | 12               | 13           |                             | 22.2             |                    | 2.0 | 23.0             |
|             |        | 25               | 0            |                             | 22.1             |                    | 2.0 | 23.0             |
|             | 64QAM  | 1                | 0            |                             | 22.4             |                    | 2.0 | 23.0             |
|             |        | 1                | 12           |                             | 22.4             |                    | 2.0 | 23.0             |
|             |        | 1                | 24           |                             | 22.4             |                    | 2.0 | 23.0             |
|             |        | 12               | 0            |                             | 21.1             |                    | 3.0 | 22.0             |
|             |        | 12               | 7            |                             | 21.0             |                    | 3.0 | 22.0             |
|             |        | 12               | 13           |                             | 21.1             |                    | 3.0 | 22.0             |
|             |        | 25               | 0            |                             | 21.1             |                    | 3.0 | 22.0             |
|             | 256QAM | 1                | 0            |                             | 19.4             |                    | 5.0 | 20.0             |
|             |        | 1                | 12           |                             | 19.7             |                    | 5.0 | 20.0             |
|             |        | 1                | 24           |                             | 19.5             |                    | 5.0 | 20.0             |
|             |        | 12               | 0            |                             | 19.2             |                    | 5.0 | 20.0             |
|             |        | 12               | 7            |                             | 19.2             |                    | 5.0 | 20.0             |
|             |        | 12               | 13           |                             | 19.2             |                    | 5.0 | 20.0             |
|             |        | 25               | 0            |                             | 19.0             |                    | 5.0 | 20.0             |

**LTE Band 25 Measured Results**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Maximum Average Power (dBm) |            |            |     |                  |
|-------------|--------|------------------|--------------|-----------------------------|------------|------------|-----|------------------|
|             |        |                  |              | Measured Pwr (dBm)          |            |            | MPR | Tune-up<br>Limit |
|             |        |                  |              | 26140                       | 26365      | 26590      |     |                  |
|             |        |                  |              | 1860 MHz                    | 1882.5 MHz | 1905 MHz   |     |                  |
| 20 MHz      | QPSK   | 1                | 0            | 21.9                        | 21.6       | 22.0       | 0.0 | 23.0             |
|             |        | 1                | 49           | 21.8                        | 21.4       | 21.8       | 0.0 | 23.0             |
|             |        | 1                | 99           | 21.8                        | 21.5       | 21.9       | 0.0 | 23.0             |
|             |        | 50               | 0            | 20.9                        | 20.6       | 21.0       | 1.0 | 22.0             |
|             |        | 50               | 24           | 20.9                        | 20.5       | 21.0       | 1.0 | 22.0             |
|             |        | 50               | 50           | 20.9                        | 20.5       | 20.9       | 1.0 | 22.0             |
|             |        | 100              | 0            | 20.9                        | 20.5       | 21.0       | 1.0 | 22.0             |
|             | 16QAM  | 1                | 0            | 21.3                        | 21.0       | 21.3       | 1.0 | 22.0             |
|             |        | 1                | 49           | 21.2                        | 20.9       | 21.2       | 1.0 | 22.0             |
|             |        | 1                | 99           | 21.3                        | 20.9       | 21.1       | 1.0 | 22.0             |
|             |        | 50               | 0            | 20.0                        | 19.6       | 20.0       | 2.0 | 21.0             |
|             |        | 50               | 24           | 20.0                        | 19.6       | 20.0       | 2.0 | 21.0             |
|             |        | 50               | 50           | 20.0                        | 19.5       | 19.9       | 2.0 | 21.0             |
|             |        | 100              | 0            | 20.0                        | 19.5       | 20.0       | 2.0 | 21.0             |
|             | 64QAM  | 1                | 0            | 20.1                        | 19.8       | 20.2       | 2.0 | 21.0             |
|             |        | 1                | 49           | 20.1                        | 19.8       | 20.1       | 2.0 | 21.0             |
|             |        | 1                | 99           | 20.0                        | 19.9       | 20.1       | 2.0 | 21.0             |
|             |        | 50               | 0            | 20.1                        | 19.8       | 20.1       | 2.0 | 21.0             |
|             |        | 50               | 24           | 20.1                        | 19.8       | 20.1       | 2.0 | 21.0             |
|             |        | 50               | 50           | 20.1                        | 19.8       | 20.1       | 2.0 | 21.0             |
|             |        | 100              | 0            | 20.0                        | 19.8       | 20.1       | 2.0 | 21.0             |
|             | 256QAM | 1                | 0            | 17.0                        | 16.9       | 17.1       | 5.0 | 18.0             |
|             |        | 1                | 49           | 17.0                        | 16.7       | 17.0       | 5.0 | 18.0             |
|             |        | 1                | 99           | 17.0                        | 16.8       | 17.0       | 5.0 | 18.0             |
|             |        | 50               | 0            | 16.9                        | 16.5       | 16.9       | 5.0 | 18.0             |
|             |        | 50               | 24           | 16.9                        | 16.4       | 16.9       | 5.0 | 18.0             |
|             |        | 50               | 50           | 16.8                        | 16.4       | 16.9       | 5.0 | 18.0             |
|             |        | 100              | 0            | 16.9                        | 16.4       | 16.9       | 5.0 | 18.0             |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm)          |            |            | MPR | Tune-up<br>Limit |
|             |        |                  |              | 26115                       | 26365      | 26615      |     |                  |
|             |        |                  |              | 1857.5 MHz                  | 1882.5 MHz | 1907.5 MHz |     |                  |
|             |        |                  |              |                             |            |            |     |                  |
| 15 MHz      | QPSK   | 1                | 0            | 22.0                        | 21.6       | 22.2       | 0.0 | 23.0             |
|             |        | 1                | 37           | 21.9                        | 21.5       | 22.2       | 0.0 | 23.0             |
|             |        | 1                | 74           | 21.9                        | 21.5       | 22.0       | 0.0 | 23.0             |
|             |        | 36               | 0            | 20.9                        | 20.5       | 21.0       | 1.0 | 22.0             |
|             |        | 36               | 20           | 20.9                        | 20.5       | 20.9       | 1.0 | 22.0             |
|             |        | 36               | 39           | 20.9                        | 20.4       | 20.9       | 1.0 | 22.0             |
|             |        | 75               | 0            | 21.0                        | 20.5       | 21.0       | 1.0 | 22.0             |
|             | 16QAM  | 1                | 0            | 21.4                        | 20.9       | 21.6       | 1.0 | 22.0             |
|             |        | 1                | 37           | 21.2                        | 20.9       | 21.4       | 1.0 | 22.0             |
|             |        | 1                | 74           | 21.4                        | 20.8       | 21.4       | 1.0 | 22.0             |
|             |        | 36               | 0            | 20.0                        | 19.5       | 20.0       | 2.0 | 21.0             |
|             |        | 36               | 20           | 19.9                        | 19.5       | 20.0       | 2.0 | 21.0             |
|             |        | 36               | 39           | 19.9                        | 19.5       | 20.0       | 2.0 | 21.0             |
|             |        | 75               | 0            | 20.0                        | 19.5       | 20.0       | 2.0 | 21.0             |
|             | 64QAM  | 1                | 0            | 20.4                        | 19.9       | 20.2       | 2.0 | 21.0             |
|             |        | 1                | 37           | 20.5                        | 20.0       | 20.2       | 2.0 | 21.0             |
|             |        | 1                | 74           | 20.4                        | 20.0       | 20.2       | 2.0 | 21.0             |
|             |        | 36               | 0            | 19.0                        | 20.0       | 20.1       | 2.0 | 21.0             |
|             |        | 36               | 20           | 18.9                        | 20.0       | 20.2       | 2.0 | 21.0             |
|             |        | 36               | 39           | 18.9                        | 20.0       | 20.1       | 2.0 | 21.0             |
|             |        | 75               | 0            | 19.0                        | 20.0       | 20.1       | 2.0 | 21.0             |
|             | 256QAM | 1                | 0            | 17.1                        | 16.9       | 17.2       | 5.0 | 18.0             |
|             |        | 1                | 37           | 17.0                        | 17.0       | 17.3       | 5.0 | 18.0             |
|             |        | 1                | 74           | 17.0                        | 16.8       | 17.1       | 5.0 | 18.0             |
|             |        | 36               | 0            | 16.9                        | 16.5       | 17.0       | 5.0 | 18.0             |
|             |        | 36               | 20           | 16.9                        | 16.5       | 17.0       | 5.0 | 18.0             |
|             |        | 36               | 39           | 16.9                        | 16.5       | 17.0       | 5.0 | 18.0             |
|             |        | 75               | 0            | 16.9                        | 16.5       | 17.0       | 5.0 | 18.0             |

**LTE Band 25 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |            |          | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|------------|----------|-----|------------------|
|             |        |                  |              | 26090              | 26365      | 26640    |     |                  |
|             |        |                  |              | 1855 MHz           | 1882.5 MHz | 1910 MHz |     |                  |
| 10 MHz      | QPSK   | 1                | 0            | 21.9               | 21.5       | 22.1     | 0.0 | 23.0             |
|             |        | 1                | 25           | 21.9               | 21.3       | 21.9     | 0.0 | 23.0             |
|             |        | 1                | 49           | 22.0               | 21.4       | 22.1     | 0.0 | 23.0             |
|             |        | 25               | 0            | 20.9               | 20.5       | 21.0     | 1.0 | 22.0             |
|             |        | 25               | 12           | 20.9               | 20.5       | 21.0     | 1.0 | 22.0             |
|             |        | 25               | 25           | 20.9               | 20.4       | 21.0     | 1.0 | 22.0             |
|             | 16QAM  | 50               | 0            | 20.9               | 20.5       | 21.0     | 1.0 | 22.0             |
|             |        | 1                | 0            | 21.2               | 20.9       | 21.3     | 1.0 | 22.0             |
|             |        | 1                | 25           | 21.1               | 20.7       | 21.2     | 1.0 | 22.0             |
|             |        | 1                | 49           | 21.3               | 20.7       | 21.3     | 1.0 | 22.0             |
|             |        | 25               | 0            | 20.0               | 19.6       | 20.1     | 2.0 | 21.0             |
|             |        | 25               | 12           | 20.0               | 19.5       | 20.0     | 2.0 | 21.0             |
|             | 64QAM  | 25               | 25           | 20.0               | 19.5       | 20.0     | 2.0 | 21.0             |
|             |        | 50               | 0            | 20.0               | 19.5       | 20.1     | 2.0 | 21.0             |
|             |        | 1                | 0            | 20.4               | 19.9       | 20.2     | 2.0 | 21.0             |
|             |        | 1                | 25           | 20.2               | 19.9       | 20.2     | 2.0 | 21.0             |
|             |        | 1                | 49           | 20.2               | 19.9       | 20.2     | 2.0 | 21.0             |
|             |        | 25               | 0            | 19.1               | 19.9       | 20.2     | 2.0 | 21.0             |
|             | 256QAM | 25               | 12           | 19.1               | 19.9       | 20.2     | 2.0 | 21.0             |
|             |        | 25               | 25           | 19.1               | 19.9       | 20.2     | 2.0 | 21.0             |
|             |        | 50               | 0            | 19.0               | 19.9       | 20.2     | 2.0 | 21.0             |
|             |        | 1                | 0            | 17.1               | 16.8       | 17.2     | 5.0 | 18.0             |
|             |        | 1                | 25           | 17.0               | 16.7       | 17.1     | 5.0 | 18.0             |
|             |        | 1                | 49           | 17.1               | 16.8       | 17.1     | 5.0 | 18.0             |
| 5 MHz       | QPSK   | 25               | 0            | 17.0               | 16.5       | 17.0     | 5.0 | 18.0             |
|             |        | 25               | 12           | 16.9               | 16.5       | 17.0     | 5.0 | 18.0             |
|             |        | 25               | 25           | 17.0               | 16.5       | 17.0     | 5.0 | 18.0             |
|             |        | 50               | 0            | 16.9               | 16.4       | 16.9     | 5.0 | 18.0             |
|             |        | 1                | 0            | 22.0               | 21.5       | 21.9     | 0.0 | 23.0             |
|             |        | 1                | 12           | 22.1               | 21.6       | 22.0     | 0.0 | 23.0             |
|             | 16QAM  | 1                | 24           | 22.2               | 21.6       | 22.0     | 0.0 | 23.0             |
|             |        | 12               | 0            | 21.0               | 20.4       | 20.9     | 1.0 | 22.0             |
|             |        | 12               | 7            | 21.1               | 20.4       | 20.9     | 1.0 | 22.0             |
|             |        | 12               | 13           | 21.0               | 20.4       | 20.9     | 1.0 | 22.0             |
|             |        | 25               | 0            | 21.0               | 20.4       | 20.8     | 1.0 | 22.0             |
|             |        | 1                | 0            | 21.6               | 20.9       | 21.4     | 1.0 | 22.0             |
|             | 64QAM  | 1                | 12           | 21.7               | 21.0       | 21.4     | 1.0 | 22.0             |
|             |        | 1                | 24           | 21.6               | 21.0       | 21.4     | 1.0 | 22.0             |
|             |        | 12               | 0            | 20.1               | 19.6       | 20.0     | 2.0 | 21.0             |
|             |        | 12               | 7            | 20.1               | 19.6       | 20.0     | 2.0 | 21.0             |
|             |        | 12               | 13           | 20.1               | 19.6       | 19.9     | 2.0 | 21.0             |
|             |        | 25               | 0            | 20.0               | 19.4       | 19.9     | 2.0 | 21.0             |
|             | 256QAM | 1                | 0            | 20.7               | 19.7       | 20.2     | 2.0 | 21.0             |
|             |        | 1                | 12           | 20.5               | 19.7       | 20.1     | 2.0 | 21.0             |
|             |        | 1                | 24           | 20.6               | 19.7       | 20.2     | 2.0 | 21.0             |
|             |        | 12               | 0            | 19.1               | 19.7       | 20.1     | 2.0 | 21.0             |
|             |        | 12               | 7            | 19.1               | 19.8       | 20.2     | 2.0 | 21.0             |
|             |        | 12               | 13           | 19.2               | 19.7       | 20.2     | 2.0 | 21.0             |
| 5 MHz       | 256QAM | 25               | 0            | 19.1               | 19.8       | 20.2     | 2.0 | 21.0             |
|             |        | 1                | 0            | 17.5               | 16.5       | 16.9     | 5.0 | 18.0             |
|             |        | 1                | 12           | 17.5               | 16.4       | 17.1     | 5.0 | 18.0             |
|             |        | 1                | 24           | 17.5               | 16.5       | 16.9     | 5.0 | 18.0             |
|             |        | 12               | 0            | 17.0               | 16.5       | 16.9     | 5.0 | 18.0             |
|             |        | 12               | 7            | 17.0               | 16.5       | 16.9     | 5.0 | 18.0             |
|             | 256QAM | 12               | 13           | 17.0               | 16.5       | 16.9     | 5.0 | 18.0             |
|             |        | 25               | 0            | 17.0               | 16.5       | 16.8     | 5.0 | 18.0             |

**LTE Band 25 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |            |            | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|------------|------------|-----|------------------|
|             |        |                  |              | 26055              | 26365      | 26675      |     |                  |
|             |        |                  |              | 1851.5 MHz         | 1882.5 MHz | 1913.5 MHz |     |                  |
| 3 MHz       | QPSK   | 1                | 0            | 22.1               | 21.5       | 22.0       | 0.0 | 23.0             |
|             |        | 1                | 8            | 22.1               | 21.3       | 22.0       | 0.0 | 23.0             |
|             |        | 1                | 14           | 22.2               | 21.4       | 22.0       | 0.0 | 23.0             |
|             |        | 8                | 0            | 21.0               | 20.4       | 20.8       | 1.0 | 22.0             |
|             |        | 8                | 4            | 20.9               | 20.3       | 20.8       | 1.0 | 22.0             |
|             |        | 8                | 7            | 21.0               | 20.4       | 20.9       | 1.0 | 22.0             |
|             | 16QAM  | 15               | 0            | 21.0               | 20.4       | 20.8       | 1.0 | 22.0             |
|             |        | 1                | 0            | 21.4               | 20.9       | 21.4       | 1.0 | 22.0             |
|             |        | 1                | 8            | 21.3               | 20.8       | 21.4       | 1.0 | 22.0             |
|             |        | 1                | 14           | 21.2               | 20.8       | 21.3       | 1.0 | 22.0             |
|             |        | 8                | 0            | 20.1               | 19.5       | 19.9       | 2.0 | 21.0             |
|             |        | 8                | 4            | 20.1               | 19.5       | 19.9       | 2.0 | 21.0             |
|             | 64QAM  | 8                | 7            | 20.1               | 19.5       | 19.9       | 2.0 | 21.0             |
|             |        | 15               | 0            | 20.1               | 19.5       | 19.9       | 2.0 | 21.0             |
|             |        | 1                | 0            | 20.3               | 19.8       | 20.0       | 2.0 | 21.0             |
|             |        | 1                | 8            | 20.1               | 19.7       | 20.1       | 2.0 | 21.0             |
|             |        | 1                | 14           | 20.1               | 19.8       | 20.0       | 2.0 | 21.0             |
|             |        | 8                | 0            | 19.1               | 19.5       | 20.0       | 2.0 | 21.0             |
|             | 256QAM | 8                | 4            | 19.1               | 19.6       | 20.0       | 2.0 | 21.0             |
|             |        | 8                | 7            | 19.1               | 19.7       | 20.0       | 2.0 | 21.0             |
|             |        | 15               | 0            | 19.1               | 19.7       | 20.0       | 2.0 | 21.0             |
|             |        | 1                | 0            | 17.1               | 16.8       | 17.0       | 5.0 | 18.0             |
|             |        | 1                | 8            | 17.1               | 16.9       | 17.2       | 5.0 | 18.0             |
|             |        | 1                | 14           | 17.2               | 16.8       | 16.9       | 5.0 | 18.0             |
| 1.4 MHz     | QPSK   | 8                | 0            | 17.1               | 16.5       | 16.8       | 5.0 | 18.0             |
|             |        | 8                | 4            | 17.0               | 16.5       | 16.9       | 5.0 | 18.0             |
|             |        | 8                | 7            | 17.1               | 16.5       | 16.9       | 5.0 | 18.0             |
|             |        | 15               | 0            | 17.0               | 16.4       | 16.9       | 5.0 | 18.0             |
|             | 16QAM  | 1                | 0            | 21.9               | 21.3       | 21.8       | 0.0 | 23.0             |
|             |        | 1                | 3            | 21.8               | 21.3       | 21.7       | 0.0 | 23.0             |
|             |        | 1                | 5            | 21.9               | 21.4       | 21.8       | 0.0 | 23.0             |
|             |        | 3                | 0            | 21.8               | 21.3       | 21.7       | 0.0 | 23.0             |
|             |        | 3                | 1            | 21.8               | 21.2       | 21.8       | 0.0 | 23.0             |
|             |        | 3                | 3            | 21.9               | 21.3       | 21.7       | 0.0 | 23.0             |
|             | 64QAM  | 6                | 0            | 20.9               | 20.3       | 20.8       | 1.0 | 22.0             |
|             |        | 1                | 0            | 21.1               | 20.5       | 21.1       | 1.0 | 22.0             |
|             |        | 1                | 3            | 20.9               | 20.6       | 20.8       | 1.0 | 22.0             |
|             |        | 1                | 5            | 21.1               | 20.5       | 21.0       | 1.0 | 22.0             |
|             |        | 3                | 0            | 21.0               | 20.4       | 20.8       | 1.0 | 22.0             |
|             |        | 3                | 1            | 20.8               | 20.6       | 20.6       | 1.0 | 22.0             |
|             | 256QAM | 3                | 3            | 20.9               | 20.4       | 20.8       | 1.0 | 22.0             |
|             |        | 6                | 0            | 20.0               | 19.4       | 19.8       | 2.0 | 21.0             |
|             |        | 1                | 0            | 20.5               | 19.5       | 20.4       | 2.0 | 21.0             |
|             |        | 1                | 3            | 20.1               | 19.5       | 20.3       | 2.0 | 21.0             |
|             |        | 1                | 5            | 20.1               | 19.6       | 20.3       | 2.0 | 21.0             |
|             |        | 3                | 0            | 19.8               | 19.5       | 20.3       | 2.0 | 21.0             |
|             | 16QAM  | 3                | 1            | 19.8               | 19.6       | 20.3       | 2.0 | 21.0             |
|             |        | 3                | 3            | 19.8               | 19.5       | 20.4       | 2.0 | 21.0             |
|             |        | 6                | 0            | 19.6               | 19.6       | 20.3       | 2.0 | 21.0             |
|             | 256QAM | 1                | 0            | 16.7               | 16.7       | 17.2       | 5.0 | 18.0             |
|             |        | 1                | 3            | 16.7               | 16.7       | 17.1       | 5.0 | 18.0             |
|             |        | 1                | 5            | 16.8               | 16.7       | 17.1       | 5.0 | 18.0             |
|             | 64QAM  | 3                | 0            | 16.6               | 16.6       | 17.0       | 5.0 | 18.0             |
|             |        | 3                | 1            | 16.6               | 16.6       | 17.0       | 5.0 | 18.0             |
|             |        | 3                | 3            | 16.6               | 16.6       | 17.0       | 5.0 | 18.0             |
|             |        | 6                | 0            | 16.6               | 16.6       | 17.1       | 5.0 | 18.0             |

**LTE Band 26 Measured Results**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Maximum Average Power (dBm) |           |           |     |                  |
|-------------|--------|------------------|--------------|-----------------------------|-----------|-----------|-----|------------------|
|             |        |                  |              | Measured Pwr (dBm)          |           |           | MPR | Tune-up<br>Limit |
|             |        |                  |              | 26765                       | 26865     | 26965     |     |                  |
|             |        |                  |              | 821.5 MHz                   | 831.5 MHz | 841.5 MHz |     |                  |
| 15 MHz      | QPSK   | 1                | 0            |                             | 24.3      |           | 0.0 | 25.0             |
|             |        | 1                | 37           |                             | 24.1      |           | 0.0 | 25.0             |
|             |        | 1                | 74           |                             | 24.1      |           | 0.0 | 25.0             |
|             |        | 36               | 0            |                             | 23.2      |           | 1.0 | 24.0             |
|             |        | 36               | 20           |                             | 23.2      |           | 1.0 | 24.0             |
|             |        | 36               | 39           |                             | 23.1      |           | 1.0 | 24.0             |
|             |        | 75               | 0            |                             | 23.2      |           | 1.0 | 24.0             |
|             | 16QAM  | 1                | 0            |                             | 23.5      |           | 1.0 | 24.0             |
|             |        | 1                | 37           |                             | 23.3      |           | 1.0 | 24.0             |
|             |        | 1                | 74           |                             | 23.3      |           | 1.0 | 24.0             |
|             |        | 36               | 0            |                             | 22.2      |           | 2.0 | 23.0             |
|             |        | 36               | 20           |                             | 22.2      |           | 2.0 | 23.0             |
|             |        | 36               | 39           |                             | 22.1      |           | 2.0 | 23.0             |
|             |        | 75               | 0            |                             | 22.2      |           | 2.0 | 23.0             |
|             | 64QAM  | 1                | 0            |                             | 22.4      |           | 2.0 | 23.0             |
|             |        | 1                | 37           |                             | 22.5      |           | 2.0 | 23.0             |
|             |        | 1                | 74           |                             | 22.5      |           | 2.0 | 23.0             |
|             |        | 36               | 0            |                             | 21.2      |           | 3.0 | 22.0             |
|             |        | 36               | 20           |                             | 21.2      |           | 3.0 | 22.0             |
|             |        | 36               | 39           |                             | 21.1      |           | 3.0 | 22.0             |
|             |        | 75               | 0            |                             | 21.1      |           | 3.0 | 22.0             |
|             | 256QAM | 1                | 0            |                             | 19.4      |           | 5.0 | 20.0             |
|             |        | 1                | 37           |                             | 19.4      |           | 5.0 | 20.0             |
|             |        | 1                | 74           |                             | 19.3      |           | 5.0 | 20.0             |
|             |        | 36               | 0            |                             | 19.2      |           | 5.0 | 20.0             |
|             |        | 36               | 20           |                             | 19.1      |           | 5.0 | 20.0             |
|             |        | 36               | 39           |                             | 19.1      |           | 5.0 | 20.0             |
|             |        | 75               | 0            |                             | 19.1      |           | 5.0 | 20.0             |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm)          |           |           | MPR | Tune-up<br>Limit |
|             |        |                  |              | 26740                       | 26865     | 26990     |     |                  |
|             |        |                  |              | 819 MHz                     | 831.5 MHz | 844 MHz   |     |                  |
|             |        |                  |              |                             |           |           |     |                  |
| 10 MHz      | QPSK   | 1                | 0            | 24.1                        | 24.2      | 24.2      | 0.0 | 25.0             |
|             |        | 1                | 25           | 24.0                        | 24.0      | 24.1      | 0.0 | 25.0             |
|             |        | 1                | 49           | 24.1                        | 24.1      | 24.3      | 0.0 | 25.0             |
|             |        | 25               | 0            | 23.0                        | 23.2      | 23.2      | 1.0 | 24.0             |
|             |        | 25               | 12           | 23.0                        | 23.1      | 23.2      | 1.0 | 24.0             |
|             |        | 25               | 25           | 23.0                        | 23.1      | 23.2      | 1.0 | 24.0             |
|             |        | 50               | 0            | 23.0                        | 23.1      | 23.2      | 1.0 | 24.0             |
|             | 16QAM  | 1                | 0            | 23.1                        | 23.6      | 23.4      | 1.0 | 24.0             |
|             |        | 1                | 25           | 23.0                        | 23.2      | 23.4      | 1.0 | 24.0             |
|             |        | 1                | 49           | 23.2                        | 23.3      | 23.5      | 1.0 | 24.0             |
|             |        | 25               | 0            | 22.0                        | 22.2      | 22.2      | 2.0 | 23.0             |
|             |        | 25               | 12           | 22.0                        | 22.1      | 22.2      | 2.0 | 23.0             |
|             |        | 25               | 25           | 22.0                        | 22.1      | 22.2      | 2.0 | 23.0             |
|             |        | 50               | 0            | 22.0                        | 22.1      | 22.1      | 2.0 | 23.0             |
|             | 64QAM  | 1                | 0            | 22.4                        | 22.4      | 22.2      | 2.0 | 23.0             |
|             |        | 1                | 25           | 22.2                        | 22.4      | 22.2      | 2.0 | 23.0             |
|             |        | 1                | 49           | 22.3                        | 22.4      | 22.2      | 2.0 | 23.0             |
|             |        | 25               | 0            | 21.0                        | 21.1      | 21.1      | 3.0 | 22.0             |
|             |        | 25               | 12           | 21.1                        | 21.1      | 21.1      | 3.0 | 22.0             |
|             |        | 25               | 25           | 21.0                        | 21.1      | 21.1      | 3.0 | 22.0             |
|             |        | 50               | 0            | 21.0                        | 21.1      | 21.2      | 3.0 | 22.0             |
|             | 256QAM | 1                | 0            | 19.1                        | 19.5      | 19.3      | 5.0 | 20.0             |
|             |        | 1                | 25           | 19.1                        | 19.3      | 19.2      | 5.0 | 20.0             |
|             |        | 1                | 49           | 19.1                        | 19.3      | 19.3      | 5.0 | 20.0             |
|             |        | 25               | 0            | 19.1                        | 19.2      | 19.2      | 5.0 | 20.0             |
|             |        | 25               | 12           | 19.1                        | 19.2      | 19.2      | 5.0 | 20.0             |
|             |        | 25               | 25           | 19.1                        | 19.2      | 19.2      | 5.0 | 20.0             |
|             |        | 50               | 0            | 19.0                        | 19.2      | 19.2      | 5.0 | 20.0             |

**LTE Band 26 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |           |           | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|-----------|-----------|-----|------------------|
|             |        |                  |              | 26715              | 26865     | 27015     |     |                  |
|             |        |                  |              | 816.5 MHz          | 831.5 MHz | 846.5 MHz |     |                  |
| 5 MHz       | QPSK   | 1                | 0            | 23.9               | 24.2      | 24.1      | 0.0 | 25.0             |
|             |        | 1                | 12           | 23.9               | 24.3      | 24.3      | 0.0 | 25.0             |
|             |        | 1                | 24           | 24.1               | 24.3      | 24.2      | 0.0 | 25.0             |
|             |        | 12               | 0            | 22.9               | 23.1      | 23.2      | 1.0 | 24.0             |
|             |        | 12               | 7            | 22.9               | 23.1      | 23.2      | 1.0 | 24.0             |
|             |        | 12               | 13           | 23.0               | 23.1      | 23.2      | 1.0 | 24.0             |
|             | 16QAM  | 25               | 0            | 22.9               | 23.1      | 23.2      | 1.0 | 24.0             |
|             |        | 1                | 0            | 23.4               | 23.4      | 23.6      | 1.0 | 24.0             |
|             |        | 1                | 12           | 23.6               | 23.5      | 23.5      | 1.0 | 24.0             |
|             |        | 1                | 24           | 23.4               | 23.5      | 23.7      | 1.0 | 24.0             |
|             |        | 12               | 0            | 21.9               | 22.1      | 22.2      | 2.0 | 23.0             |
|             |        | 12               | 7            | 21.9               | 22.1      | 22.2      | 2.0 | 23.0             |
|             | 64QAM  | 12               | 13           | 21.9               | 22.1      | 22.2      | 2.0 | 23.0             |
|             |        | 25               | 0            | 21.9               | 22.1      | 22.2      | 2.0 | 23.0             |
|             |        | 1                | 0            | 21.9               | 22.1      | 22.4      | 2.0 | 23.0             |
|             |        | 1                | 12           | 21.8               | 22.0      | 22.4      | 2.0 | 23.0             |
|             |        | 1                | 24           | 22.1               | 22.0      | 22.4      | 2.0 | 23.0             |
|             |        | 12               | 0            | 21.0               | 21.0      | 21.1      | 3.0 | 22.0             |
| 3 MHz       | QPSK   | 12               | 7            | 21.0               | 21.0      | 21.1      | 3.0 | 22.0             |
|             |        | 12               | 13           | 21.0               | 21.0      | 21.1      | 3.0 | 22.0             |
|             |        | 25               | 0            | 20.9               | 21.0      | 21.1      | 3.0 | 22.0             |
|             | 256QAM | 1                | 0            | 18.9               | 19.4      | 19.6      | 5.0 | 20.0             |
|             |        | 1                | 12           | 18.8               | 19.3      | 19.7      | 5.0 | 20.0             |
|             |        | 1                | 24           | 19.0               | 19.3      | 19.7      | 5.0 | 20.0             |
|             | 16QAM  | 12               | 0            | 18.9               | 19.2      | 19.2      | 5.0 | 20.0             |
|             |        | 12               | 7            | 18.9               | 19.2      | 19.2      | 5.0 | 20.0             |
|             |        | 12               | 13           | 19.0               | 19.2      | 19.2      | 5.0 | 20.0             |
|             |        | 25               | 0            | 19.0               | 19.1      | 19.1      | 5.0 | 20.0             |
|             | 64QAM  | 1                | 0            | 24.0               | 24.3      | 24.2      | 0.0 | 25.0             |
|             |        | 1                | 8            | 24.2               | 24.1      | 24.5      | 0.0 | 25.0             |
|             |        | 1                | 14           | 24.1               | 24.1      | 24.2      | 0.0 | 25.0             |
|             |        | 8                | 0            | 22.9               | 23.1      | 23.1      | 1.0 | 24.0             |
|             |        | 8                | 4            | 22.9               | 23.1      | 23.1      | 1.0 | 24.0             |
|             |        | 8                | 7            | 22.9               | 23.1      | 23.1      | 1.0 | 24.0             |
|             | 256QAM | 15               | 0            | 22.9               | 23.1      | 23.1      | 1.0 | 24.0             |
|             |        | 1                | 0            | 23.2               | 23.5      | 23.5      | 1.0 | 24.0             |
|             |        | 1                | 8            | 23.3               | 23.4      | 23.8      | 1.0 | 24.0             |
|             |        | 1                | 14           | 23.3               | 23.3      | 23.7      | 1.0 | 24.0             |
|             |        | 8                | 0            | 21.9               | 22.1      | 22.2      | 2.0 | 23.0             |
|             |        | 8                | 4            | 21.9               | 22.2      | 22.2      | 2.0 | 23.0             |
|             | 16QAM  | 8                | 7            | 21.9               | 22.1      | 22.2      | 2.0 | 23.0             |
|             |        | 15               | 0            | 21.9               | 22.1      | 22.2      | 2.0 | 23.0             |
|             | 64QAM  | 1                | 0            | 22.2               | 22.2      | 22.3      | 2.0 | 23.0             |
|             |        | 1                | 8            | 22.3               | 22.2      | 22.3      | 2.0 | 23.0             |
|             |        | 1                | 14           | 22.3               | 22.3      | 22.3      | 2.0 | 23.0             |
|             |        | 8                | 0            | 21.0               | 21.1      | 21.1      | 3.0 | 22.0             |
|             | 256QAM | 8                | 4            | 21.0               | 21.1      | 21.1      | 3.0 | 22.0             |
|             |        | 8                | 7            | 21.0               | 21.1      | 21.1      | 3.0 | 22.0             |
|             |        | 15               | 0            | 21.0               | 21.1      | 21.1      | 3.0 | 22.0             |
|             | 16QAM  | 1                | 0            | 19.2               | 19.3      | 19.2      | 5.0 | 20.0             |
|             |        | 1                | 8            | 19.3               | 19.2      | 19.3      | 5.0 | 20.0             |
|             |        | 1                | 14           | 19.4               | 19.3      | 19.0      | 5.0 | 20.0             |
|             |        | 8                | 0            | 19.0               | 19.2      | 19.1      | 5.0 | 20.0             |
|             |        | 8                | 4            | 18.9               | 19.1      | 19.1      | 5.0 | 20.0             |
|             |        | 8                | 7            | 19.0               | 19.1      | 19.2      | 5.0 | 20.0             |
|             | 256QAM | 15               | 0            | 19.0               | 19.2      | 19.1      | 5.0 | 20.0             |

**LTE Band 26 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |           |           | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|-----------|-----------|-----|------------------|
|             |        |                  |              | 26697              | 26865     | 27033     |     |                  |
|             |        |                  |              | 814.7 MHz          | 831.5 MHz | 848.3 MHz |     |                  |
| 1.4 MHz     | QPSK   | 1                | 0            | 23.8               | 24.0      | 24.0      | 0.0 | 25.0             |
|             |        | 1                | 3            | 23.7               | 24.0      | 24.0      | 0.0 | 25.0             |
|             |        | 1                | 5            | 23.8               | 24.0      | 24.0      | 0.0 | 25.0             |
|             |        | 3                | 0            | 23.7               | 24.0      | 24.0      | 0.0 | 25.0             |
|             |        | 3                | 1            | 23.7               | 24.0      | 24.0      | 0.0 | 25.0             |
|             |        | 3                | 3            | 23.7               | 24.0      | 24.0      | 0.0 | 25.0             |
|             | 16QAM  | 6                | 0            | 22.8               | 23.1      | 23.0      | 1.0 | 24.0             |
|             |        | 1                | 0            | 22.8               | 23.4      | 23.0      | 1.0 | 24.0             |
|             |        | 1                | 3            | 22.9               | 23.2      | 22.8      | 1.0 | 24.0             |
|             |        | 1                | 5            | 22.8               | 23.3      | 23.1      | 1.0 | 24.0             |
|             |        | 3                | 0            | 22.9               | 23.0      | 23.0      | 1.0 | 24.0             |
|             |        | 3                | 1            | 22.8               | 23.1      | 23.0      | 1.0 | 24.0             |
|             | 64QAM  | 3                | 3            | 22.9               | 23.0      | 23.0      | 1.0 | 24.0             |
|             |        | 6                | 0            | 21.9               | 22.0      | 22.1      | 2.0 | 23.0             |
|             |        | 1                | 0            | 21.9               | 22.2      | 22.2      | 2.0 | 23.0             |
|             |        | 1                | 3            | 21.9               | 22.1      | 22.2      | 2.0 | 23.0             |
|             |        | 1                | 5            | 22.2               | 22.2      | 21.9      | 2.0 | 23.0             |
|             |        | 3                | 0            | 22.0               | 22.2      | 21.9      | 2.0 | 23.0             |
|             | 256QAM | 3                | 1            | 22.0               | 22.2      | 22.2      | 2.0 | 23.0             |
|             |        | 3                | 3            | 22.0               | 22.2      | 22.2      | 2.0 | 23.0             |
|             |        | 6                | 0            | 20.8               | 21.1      | 21.0      | 3.0 | 22.0             |
|             |        | 1                | 0            | 18.8               | 19.0      | 19.1      | 5.0 | 20.0             |
|             |        | 1                | 3            | 18.2               | 19.1      | 18.9      | 5.0 | 20.0             |
|             |        | 1                | 5            | 18.8               | 19.1      | 19.0      | 5.0 | 20.0             |
|             |        | 3                | 0            | 18.7               | 19.0      | 19.2      | 5.0 | 20.0             |
|             |        | 3                | 1            | 18.8               | 19.0      | 19.2      | 5.0 | 20.0             |
|             |        | 3                | 3            | 18.7               | 19.0      | 19.2      | 5.0 | 20.0             |
|             |        | 6                | 0            | 18.8               | 19.0      | 19.0      | 5.0 | 20.0             |

**LTE Band 66 Measured Results**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Maximum Average Power (dBm) |          |            |     |                  |
|-------------|--------|------------------|--------------|-----------------------------|----------|------------|-----|------------------|
|             |        |                  |              | Measured Pwr (dBm)          |          |            | MPR | Tune-up<br>Limit |
|             |        |                  |              | 132072                      | 132322   | 132572     |     |                  |
|             |        |                  |              | 1720 MHz                    | 1745 MHz | 1770 MHz   |     |                  |
| 20 MHz      | QPSK   | 1                | 0            | 22.1                        | 21.9     | 21.8       | 0.0 | 23               |
|             |        | 1                | 49           | 22.0                        | 21.8     | 21.6       | 0.0 | 23               |
|             |        | 1                | 99           | 22.1                        | 21.8     | 21.6       | 0.0 | 23               |
|             |        | 50               | 0            | 21.1                        | 20.9     | 20.7       | 1.0 | 22               |
|             |        | 50               | 24           | 21.1                        | 20.9     | 20.7       | 1.0 | 22               |
|             |        | 50               | 50           | 21.1                        | 20.9     | 20.7       | 1.0 | 22               |
|             |        | 100              | 0            | 21.1                        | 20.9     | 20.7       | 1.0 | 22               |
|             | 16QAM  | 1                | 0            | 21.2                        | 21.3     | 21.1       | 1.0 | 22               |
|             |        | 1                | 49           | 21.2                        | 21.1     | 21.0       | 1.0 | 22               |
|             |        | 1                | 99           | 21.3                        | 21.2     | 21.1       | 1.0 | 22               |
|             |        | 50               | 0            | 20.1                        | 19.9     | 19.8       | 2.0 | 21               |
|             |        | 50               | 24           | 20.1                        | 19.9     | 19.8       | 2.0 | 21               |
|             |        | 50               | 50           | 20.1                        | 19.9     | 19.7       | 2.0 | 21               |
|             |        | 100              | 0            | 20.1                        | 19.9     | 19.7       | 2.0 | 21               |
|             | 64QAM  | 1                | 0            | 20.5                        | 20.0     | 19.9       | 2.0 | 21               |
|             |        | 1                | 49           | 20.3                        | 20.0     | 19.9       | 2.0 | 21               |
|             |        | 1                | 99           | 20.5                        | 20.1     | 19.9       | 2.0 | 21               |
|             |        | 50               | 0            | 19.1                        | 20.0     | 20.0       | 2.0 | 21               |
|             |        | 50               | 24           | 19.1                        | 20.0     | 19.9       | 2.0 | 21               |
|             |        | 50               | 50           | 19.1                        | 20.1     | 19.9       | 2.0 | 21               |
|             |        | 100              | 0            | 19.1                        | 20.1     | 20.0       | 2.0 | 21               |
|             | 256QAM | 1                | 0            | 17.3                        | 16.9     | 16.8       | 5.0 | 18               |
|             |        | 1                | 49           | 17.1                        | 16.8     | 16.7       | 5.0 | 18               |
|             |        | 1                | 99           | 17.2                        | 17.0     | 16.8       | 5.0 | 18               |
|             |        | 50               | 0            | 17.0                        | 16.8     | 16.6       | 5.0 | 18               |
|             |        | 50               | 24           | 17.0                        | 16.7     | 16.6       | 5.0 | 18               |
|             |        | 50               | 50           | 17.0                        | 16.7     | 16.6       | 5.0 | 18               |
|             |        | 100              | 0            | 17.0                        | 16.8     | 16.6       | 5.0 | 18               |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm)          |          |            | MPR | Tune-up<br>Limit |
|             |        |                  |              | 132047                      | 132322   | 132597     |     |                  |
|             |        |                  |              | 1717.5 MHz                  | 1745 MHz | 1772.5 MHz |     |                  |
|             |        |                  |              |                             |          |            |     |                  |
| 15 MHz      | QPSK   | 1                | 0            | 22.1                        | 21.9     | 21.9       | 0.0 | 23               |
|             |        | 1                | 37           | 22.0                        | 21.8     | 21.9       | 0.0 | 23               |
|             |        | 1                | 74           | 22.1                        | 21.9     | 21.8       | 0.0 | 23               |
|             |        | 36               | 0            | 21.1                        | 20.9     | 20.8       | 1.0 | 22               |
|             |        | 36               | 20           | 21.0                        | 20.9     | 20.8       | 1.0 | 22               |
|             |        | 36               | 39           | 21.0                        | 20.8     | 20.7       | 1.0 | 22               |
|             |        | 75               | 0            | 21.0                        | 20.9     | 20.8       | 1.0 | 22               |
|             | 16QAM  | 1                | 0            | 21.3                        | 21.1     | 21.3       | 1.0 | 22               |
|             |        | 1                | 37           | 21.3                        | 21.1     | 21.2       | 1.0 | 22               |
|             |        | 1                | 74           | 21.4                        | 21.2     | 21.1       | 1.0 | 22               |
|             |        | 36               | 0            | 20.1                        | 19.9     | 19.8       | 2.0 | 21               |
|             |        | 36               | 20           | 20.0                        | 19.9     | 19.8       | 2.0 | 21               |
|             |        | 36               | 39           | 20.0                        | 19.8     | 19.8       | 2.0 | 21               |
|             |        | 75               | 0            | 20.1                        | 19.9     | 19.8       | 2.0 | 21               |
|             | 64QAM  | 1                | 0            | 20.4                        | 20.2     | 20.1       | 2.0 | 21               |
|             |        | 1                | 37           | 20.4                        | 20.2     | 20.1       | 2.0 | 21               |
|             |        | 1                | 74           | 20.5                        | 20.2     | 20.2       | 2.0 | 21               |
|             |        | 36               | 0            | 19.0                        | 20.2     | 20.1       | 2.0 | 21               |
|             |        | 36               | 20           | 19.0                        | 20.2     | 20.1       | 2.0 | 21               |
|             |        | 36               | 39           | 19.0                        | 20.2     | 20.1       | 2.0 | 21               |
|             |        | 75               | 0            | 19.1                        | 20.2     | 20.1       | 2.0 | 21               |
|             | 256QAM | 1                | 0            | 17.3                        | 17.1     | 17.0       | 5.0 | 18               |
|             |        | 1                | 37           | 17.2                        | 17.2     | 17.0       | 5.0 | 18               |
|             |        | 1                | 74           | 17.2                        | 17.0     | 16.9       | 5.0 | 18               |
|             |        | 36               | 0            | 17.0                        | 16.8     | 16.8       | 5.0 | 18               |
|             |        | 36               | 20           | 17.0                        | 16.8     | 16.7       | 5.0 | 18               |
|             |        | 36               | 39           | 17.0                        | 16.8     | 16.7       | 5.0 | 18               |
|             |        | 75               | 0            | 17.0                        | 16.8     | 16.7       | 5.0 | 18               |

**LTE Band 66 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |          |          | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|----------|----------|-----|------------------|
|             |        |                  |              | 132022             | 132322   | 132622   |     |                  |
|             |        |                  |              | 1715 MHz           | 1745 MHz | 1775 MHz |     |                  |
| 10 MHz      | QPSK   | 1                | 0            | 22.1               | 21.9     | 21.9     | 0.0 | 23               |
|             |        | 1                | 25           | 22.1               | 21.7     | 21.7     | 0.0 | 23               |
|             |        | 1                | 49           | 22.2               | 21.8     | 21.8     | 0.0 | 23               |
|             |        | 25               | 0            | 21.0               | 20.8     | 20.8     | 1.0 | 22               |
|             |        | 25               | 12           | 21.0               | 20.8     | 20.8     | 1.0 | 22               |
|             |        | 25               | 25           | 21.0               | 20.8     | 20.8     | 1.0 | 22               |
|             | 16QAM  | 50               | 0            | 21.0               | 20.8     | 20.8     | 1.0 | 22               |
|             |        | 1                | 0            | 21.2               | 21.3     | 21.2     | 1.0 | 22               |
|             |        | 1                | 25           | 21.1               | 21.1     | 21.1     | 1.0 | 22               |
|             |        | 1                | 49           | 21.3               | 21.2     | 21.3     | 1.0 | 22               |
|             |        | 25               | 0            | 20.1               | 19.9     | 19.8     | 2.0 | 21               |
|             |        | 25               | 12           | 20.1               | 19.9     | 19.8     | 2.0 | 21               |
|             | 64QAM  | 25               | 25           | 20.1               | 19.9     | 19.8     | 2.0 | 21               |
|             |        | 50               | 0            | 20.1               | 19.9     | 19.9     | 2.0 | 21               |
|             |        | 1                | 0            | 20.3               | 19.9     | 20.0     | 2.0 | 21               |
|             |        | 1                | 25           | 20.0               | 19.9     | 20.0     | 2.0 | 21               |
|             |        | 1                | 49           | 20.1               | 19.9     | 20.0     | 2.0 | 21               |
|             |        | 25               | 0            | 19.1               | 19.9     | 20.0     | 2.0 | 21               |
|             | 256QAM | 25               | 12           | 19.1               | 19.9     | 20.0     | 2.0 | 21               |
|             |        | 25               | 25           | 19.1               | 19.9     | 20.0     | 2.0 | 21               |
|             |        | 50               | 0            | 19.1               | 19.9     | 20.0     | 2.0 | 21               |
|             |        | 1                | 0            | 17.1               | 16.9     | 16.8     | 5.0 | 18               |
|             |        | 1                | 25           | 17.0               | 16.8     | 16.7     | 5.0 | 18               |
|             |        | 1                | 49           | 17.1               | 16.9     | 16.8     | 5.0 | 18               |
| 5 MHz       | QPSK   | 25               | 0            | 17.1               | 16.8     | 16.8     | 5.0 | 18               |
|             |        | 25               | 12           | 17.1               | 16.8     | 16.7     | 5.0 | 18               |
|             |        | 25               | 25           | 17.1               | 16.8     | 16.7     | 5.0 | 18               |
|             |        | 50               | 0            | 17.0               | 16.8     | 16.7     | 5.0 | 18               |
|             |        | 1                | 0            | 22.1               | 21.8     | 21.8     | 0.0 | 23               |
|             |        | 1                | 12           | 22.1               | 22.0     | 21.8     | 0.0 | 23               |
|             | 16QAM  | 1                | 24           | 22.2               | 21.9     | 21.9     | 0.0 | 23               |
|             |        | 12               | 0            | 21.1               | 20.8     | 20.8     | 1.0 | 22               |
|             |        | 12               | 7            | 21.1               | 20.8     | 20.8     | 1.0 | 22               |
|             |        | 12               | 13           | 21.2               | 20.9     | 20.8     | 1.0 | 22               |
|             |        | 25               | 0            | 21.1               | 20.8     | 20.8     | 1.0 | 22               |
|             |        | 1                | 0            | 21.6               | 21.2     | 21.2     | 1.0 | 22               |
|             | 64QAM  | 1                | 12           | 21.7               | 21.3     | 21.2     | 1.0 | 22               |
|             |        | 1                | 24           | 21.5               | 21.4     | 21.3     | 1.0 | 22               |
|             |        | 12               | 0            | 20.1               | 19.9     | 19.9     | 2.0 | 21               |
|             |        | 12               | 7            | 20.1               | 19.9     | 19.9     | 2.0 | 21               |
|             |        | 12               | 13           | 20.1               | 19.9     | 19.9     | 2.0 | 21               |
|             |        | 25               | 0            | 20.1               | 19.8     | 19.9     | 2.0 | 21               |
|             | 256QAM | 1                | 0            | 20.7               | 20.1     | 19.9     | 2.0 | 21               |
|             |        | 1                | 12           | 20.7               | 20.1     | 19.9     | 2.0 | 21               |
|             |        | 1                | 24           | 20.5               | 20.1     | 19.9     | 2.0 | 21               |
|             |        | 12               | 0            | 19.2               | 20.1     | 19.9     | 2.0 | 21               |
|             |        | 12               | 7            | 19.1               | 20.1     | 19.9     | 2.0 | 21               |
|             |        | 12               | 13           | 19.1               | 20.1     | 19.9     | 2.0 | 21               |
|             | 256QAM | 25               | 0            | 19.1               | 20.1     | 19.9     | 2.0 | 21               |
|             |        | 1                | 0            | 17.3               | 16.9     | 17.0     | 5.0 | 18               |
|             |        | 1                | 12           | 17.4               | 16.9     | 17.2     | 5.0 | 18               |
|             |        | 1                | 24           | 17.2               | 16.9     | 16.9     | 5.0 | 18               |
|             |        | 12               | 0            | 17.1               | 16.8     | 16.8     | 5.0 | 18               |
|             |        | 12               | 7            | 17.1               | 16.8     | 16.8     | 5.0 | 18               |
|             |        | 12               | 13           | 17.1               | 16.8     | 16.8     | 5.0 | 18               |
|             |        | 25               | 0            | 17.0               | 16.8     | 16.8     | 5.0 | 18               |

**LTE Band 66 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |          |            | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|----------|------------|-----|------------------|
|             |        |                  |              | 131987             | 132322   | 132657     |     |                  |
|             |        |                  |              | 1711.5 MHz         | 1745 MHz | 1778.5 MHz |     |                  |
| 3 MHz       | QPSK   | 1                | 0            | 22.2               | 22.0     | 21.9       | 0.0 | 23               |
|             |        | 1                | 8            | 22.2               | 21.7     | 21.9       | 0.0 | 23               |
|             |        | 1                | 14           | 22.3               | 21.9     | 22.0       | 0.0 | 23               |
|             |        | 8                | 0            | 21.1               | 20.8     | 20.8       | 1.0 | 22               |
|             |        | 8                | 4            | 21.1               | 20.8     | 20.8       | 1.0 | 22               |
|             |        | 8                | 7            | 21.1               | 20.7     | 20.8       | 1.0 | 22               |
|             | 16QAM  | 15               | 0            | 21.1               | 20.8     | 20.8       | 1.0 | 22               |
|             |        | 1                | 0            | 21.3               | 21.3     | 21.3       | 1.0 | 22               |
|             |        | 1                | 8            | 21.5               | 21.3     | 21.3       | 1.0 | 22               |
|             |        | 1                | 14           | 21.4               | 21.0     | 21.3       | 1.0 | 22               |
|             |        | 8                | 0            | 20.2               | 19.9     | 19.9       | 2.0 | 21               |
|             |        | 8                | 4            | 20.1               | 19.9     | 19.9       | 2.0 | 21               |
|             | 64QAM  | 8                | 7            | 20.2               | 19.9     | 19.9       | 2.0 | 21               |
|             |        | 15               | 0            | 20.1               | 19.8     | 19.9       | 2.0 | 21               |
|             |        | 1                | 0            | 20.5               | 20.1     | 20.0       | 2.0 | 21               |
|             |        | 1                | 8            | 20.4               | 20.0     | 20.0       | 2.0 | 21               |
|             |        | 1                | 14           | 20.3               | 20.1     | 19.9       | 2.0 | 21               |
|             |        | 8                | 0            | 19.2               | 20.1     | 20.0       | 2.0 | 21               |
| 1.4 MHz     | QPSK   | 8                | 4            | 19.2               | 20.0     | 19.9       | 2.0 | 21               |
|             |        | 8                | 7            | 19.2               | 20.1     | 19.8       | 2.0 | 21               |
|             |        | 15               | 0            | 19.1               | 20.0     | 20.1       | 2.0 | 21               |
|             | 16QAM  | 1                | 0            | 17.4               | 17.0     | 17.0       | 5.0 | 18               |
|             |        | 1                | 8            | 17.2               | 17.2     | 16.8       | 5.0 | 18               |
|             |        | 1                | 14           | 17.4               | 17.2     | 16.9       | 5.0 | 18               |
|             | 64QAM  | 8                | 0            | 17.1               | 16.9     | 16.8       | 5.0 | 18               |
|             |        | 8                | 4            | 17.1               | 16.9     | 16.8       | 5.0 | 18               |
|             |        | 8                | 7            | 17.1               | 16.9     | 16.8       | 5.0 | 18               |
|             |        | 15               | 0            | 17.1               | 16.7     | 16.8       | 5.0 | 18               |
|             | 256QAM | 1                | 0            | 22.0               | 21.7     | 21.7       | 0.0 | 23               |
|             |        | 1                | 3            | 21.9               | 21.6     | 21.5       | 0.0 | 23               |
|             |        | 1                | 5            | 22.0               | 21.7     | 21.7       | 0.0 | 23               |
|             |        | 3                | 0            | 22.0               | 21.7     | 21.7       | 0.0 | 23               |
|             |        | 3                | 1            | 22.0               | 21.8     | 21.7       | 0.0 | 23               |
|             |        | 3                | 3            | 22.0               | 21.7     | 21.7       | 0.0 | 23               |
| 1.4 MHz     | 16QAM  | 6                | 0            | 21.0               | 20.7     | 20.7       | 1.0 | 22               |
|             |        | 1                | 0            | 21.3               | 20.8     | 20.9       | 1.0 | 22               |
|             |        | 1                | 3            | 21.4               | 20.7     | 20.9       | 1.0 | 22               |
|             |        | 1                | 5            | 21.4               | 20.9     | 20.8       | 1.0 | 22               |
|             |        | 3                | 0            | 21.1               | 20.8     | 20.8       | 1.0 | 22               |
|             |        | 3                | 1            | 21.2               | 20.8     | 20.7       | 1.0 | 22               |
|             | 64QAM  | 3                | 3            | 21.1               | 20.8     | 20.8       | 1.0 | 22               |
|             |        | 6                | 0            | 19.9               | 19.8     | 19.9       | 2.0 | 21               |
|             |        | 1                | 0            | 20.5               | 19.8     | 19.8       | 2.0 | 21               |
|             |        | 1                | 3            | 20.6               | 19.9     | 20.0       | 2.0 | 21               |
|             |        | 1                | 5            | 20.2               | 19.9     | 19.9       | 2.0 | 21               |
|             |        | 3                | 0            | 20.1               | 19.9     | 20.0       | 2.0 | 21               |
| 1.4 MHz     | 256QAM | 3                | 1            | 20.1               | 19.9     | 20.0       | 2.0 | 21               |
|             |        | 3                | 3            | 20.0               | 19.9     | 19.9       | 2.0 | 21               |
|             |        | 6                | 0            | 19.0               | 19.8     | 20.0       | 2.0 | 21               |
|             |        | 1                | 0            | 17.0               | 16.7     | 16.6       | 5.0 | 18               |
|             |        | 1                | 3            | 17.3               | 16.7     | 16.8       | 5.0 | 18               |
|             |        | 1                | 5            | 17.2               | 16.8     | 16.8       | 5.0 | 18               |
|             | 16QAM  | 3                | 0            | 17.0               | 16.7     | 16.7       | 5.0 | 18               |
|             |        | 3                | 1            | 17.0               | 16.7     | 16.7       | 5.0 | 18               |
|             |        | 3                | 3            | 17.0               | 16.7     | 16.7       | 5.0 | 18               |
|             |        | 6                | 0            | 17.0               | 16.7     | 16.8       | 5.0 | 18               |

## 2. Reduced power Results

### LTE Band 2 Measured Results

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Reduced Average Power (dBm)<br>Proximity sensor back-off |          |            |     |                  |
|-------------|--------|------------------|--------------|----------------------------------------------------------|----------|------------|-----|------------------|
|             |        |                  |              | Measured Pwr (dBm)                                       |          |            | MPR | Tune-up<br>Limit |
|             |        |                  |              | 18700                                                    | 18900    | 19100      |     |                  |
|             |        |                  |              | 1860 MHz                                                 | 1880 MHz | 1900 MHz   |     |                  |
| 20 MHz      | QPSK   | 1                | 0            | 18.4                                                     | 18.1     | 18.4       | 0.0 | 19.5             |
|             |        | 1                | 49           | 18.3                                                     | 17.9     | 18.2       | 0.0 | 19.5             |
|             |        | 1                | 99           | 18.4                                                     | 18.0     | 18.3       | 0.0 | 19.5             |
|             |        | 50               | 0            | 18.4                                                     | 18.0     | 18.3       | 0.0 | 19.5             |
|             |        | 50               | 24           | 18.4                                                     | 18.0     | 18.3       | 0.0 | 19.5             |
|             |        | 50               | 50           | 18.4                                                     | 18.0     | 18.3       | 0.0 | 19.5             |
|             |        | 100              | 0            | 18.4                                                     | 18.0     | 18.3       | 0.0 | 19.5             |
|             | 16QAM  | 1                | 0            | 18.9                                                     | 18.5     | 18.7       | 0.0 | 19.5             |
|             |        | 1                | 49           | 18.7                                                     | 18.4     | 18.4       | 0.0 | 19.5             |
|             |        | 1                | 99           | 18.8                                                     | 18.5     | 18.7       | 0.0 | 19.5             |
|             |        | 50               | 0            | 18.5                                                     | 18.1     | 18.4       | 0.0 | 19.5             |
|             |        | 50               | 24           | 18.4                                                     | 18.0     | 18.3       | 0.0 | 19.5             |
|             |        | 50               | 50           | 18.4                                                     | 18.0     | 18.3       | 0.0 | 19.5             |
|             |        | 100              | 0            | 18.4                                                     | 18.0     | 18.4       | 0.0 | 19.5             |
|             | 64QAM  | 1                | 0            | 18.5                                                     | 18.2     | 18.3       | 0.0 | 19.5             |
|             |        | 1                | 49           | 18.8                                                     | 18.2     | 18.4       | 0.0 | 19.5             |
|             |        | 1                | 99           | 18.9                                                     | 18.2     | 18.4       | 0.0 | 19.5             |
|             |        | 50               | 0            | 18.6                                                     | 18.2     | 18.3       | 0.0 | 19.5             |
|             |        | 50               | 24           | 18.5                                                     | 18.2     | 18.4       | 0.0 | 19.5             |
|             |        | 50               | 50           | 18.5                                                     | 18.2     | 18.3       | 0.0 | 19.5             |
|             |        | 100              | 0            | 18.5                                                     | 18.2     | 18.4       | 0.0 | 19.5             |
|             | 256QAM | 1                | 0            | 16.8                                                     | 16.3     | 16.4       | 2.0 | 17.5             |
|             |        | 1                | 49           | 16.6                                                     | 16.1     | 16.3       | 2.0 | 17.5             |
|             |        | 1                | 99           | 16.7                                                     | 16.2     | 16.5       | 2.0 | 17.5             |
|             |        | 50               | 0            | 16.4                                                     | 16.0     | 16.3       | 2.0 | 17.5             |
|             |        | 50               | 24           | 16.4                                                     | 16.0     | 16.3       | 2.0 | 17.5             |
|             |        | 50               | 50           | 16.3                                                     | 16.0     | 16.3       | 2.0 | 17.5             |
|             |        | 100              | 0            | 16.4                                                     | 16.0     | 16.3       | 2.0 | 17.5             |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm)                                       |          |            | MPR | Tune-up<br>Limit |
|             |        |                  |              | 18675                                                    | 18900    | 19125      |     |                  |
|             |        |                  |              | 1857.5 MHz                                               | 1880 MHz | 1902.5 MHz |     |                  |
|             |        |                  |              |                                                          |          |            |     |                  |
| 15 MHz      | QPSK   | 1                | 0            | 18.5                                                     | 18.0     | 18.5       | 0.0 | 19.5             |
|             |        | 1                | 37           | 18.2                                                     | 17.9     | 18.5       | 0.0 | 19.5             |
|             |        | 1                | 74           | 18.3                                                     | 18.0     | 18.4       | 0.0 | 19.5             |
|             |        | 36               | 0            | 18.3                                                     | 18.0     | 18.4       | 0.0 | 19.5             |
|             |        | 36               | 20           | 18.3                                                     | 17.9     | 18.3       | 0.0 | 19.5             |
|             |        | 36               | 39           | 18.3                                                     | 17.9     | 18.3       | 0.0 | 19.5             |
|             |        | 75               | 0            | 18.3                                                     | 17.9     | 18.3       | 0.0 | 19.5             |
|             | 16QAM  | 1                | 0            | 18.7                                                     | 18.3     | 18.8       | 0.0 | 19.5             |
|             |        | 1                | 37           | 18.7                                                     | 18.3     | 18.6       | 0.0 | 19.5             |
|             |        | 1                | 74           | 18.7                                                     | 18.3     | 18.7       | 0.0 | 19.5             |
|             |        | 36               | 0            | 18.3                                                     | 18.0     | 18.4       | 0.0 | 19.5             |
|             |        | 36               | 20           | 18.3                                                     | 17.9     | 18.4       | 0.0 | 19.5             |
|             |        | 36               | 39           | 18.3                                                     | 17.9     | 18.4       | 0.0 | 19.5             |
|             |        | 75               | 0            | 18.3                                                     | 17.9     | 18.4       | 0.0 | 19.5             |
|             | 64QAM  | 1                | 0            | 18.8                                                     | 18.2     | 18.7       | 0.0 | 19.5             |
|             |        | 1                | 37           | 18.6                                                     | 18.2     | 18.7       | 0.0 | 19.5             |
|             |        | 1                | 74           | 18.7                                                     | 18.3     | 18.7       | 0.0 | 19.5             |
|             |        | 36               | 0            | 18.4                                                     | 18.3     | 18.7       | 0.0 | 19.5             |
|             |        | 36               | 20           | 18.4                                                     | 18.3     | 18.7       | 0.0 | 19.5             |
|             |        | 36               | 39           | 18.4                                                     | 18.2     | 18.7       | 0.0 | 19.5             |
|             |        | 75               | 0            | 18.4                                                     | 18.3     | 18.7       | 0.0 | 19.5             |
|             | 256QAM | 1                | 0            | 16.6                                                     | 16.3     | 16.5       | 2.0 | 17.5             |
|             |        | 1                | 37           | 16.7                                                     | 16.3     | 16.3       | 2.0 | 17.5             |
|             |        | 1                | 74           | 16.6                                                     | 16.1     | 16.4       | 2.0 | 17.5             |
|             |        | 36               | 0            | 16.4                                                     | 16.0     | 16.4       | 2.0 | 17.5             |
|             |        | 36               | 20           | 16.4                                                     | 16.0     | 16.3       | 2.0 | 17.5             |
|             |        | 36               | 39           | 16.4                                                     | 16.0     | 16.4       | 2.0 | 17.5             |
|             |        | 75               | 0            | 16.4                                                     | 16.0     | 16.3       | 2.0 | 17.5             |

**LTE Band 2 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |          |          | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|----------|----------|-----|------------------|
|             |        |                  |              | 18650              | 18900    | 19150    |     |                  |
|             |        |                  |              | 1855 MHz           | 1880 MHz | 1905 MHz |     |                  |
| 10 MHz      | QPSK   | 1                | 0            | 18.4               | 18.0     | 18.4     | 0.0 | 19.5             |
|             |        | 1                | 25           | 18.3               | 17.9     | 18.2     | 0.0 | 19.5             |
|             |        | 1                | 49           | 18.4               | 17.9     | 18.4     | 0.0 | 19.5             |
|             |        | 25               | 0            | 18.4               | 18.0     | 18.3     | 0.0 | 19.5             |
|             |        | 25               | 12           | 18.4               | 17.9     | 18.3     | 0.0 | 19.5             |
|             |        | 25               | 25           | 18.4               | 17.9     | 18.3     | 0.0 | 19.5             |
|             | 16QAM  | 50               | 0            | 18.4               | 17.9     | 18.3     | 0.0 | 19.5             |
|             |        | 1                | 0            | 18.6               | 18.5     | 18.7     | 0.0 | 19.5             |
|             |        | 1                | 25           | 18.5               | 18.2     | 18.6     | 0.0 | 19.5             |
|             |        | 1                | 49           | 18.7               | 18.3     | 18.8     | 0.0 | 19.5             |
|             |        | 25               | 0            | 18.4               | 18.0     | 18.4     | 0.0 | 19.5             |
|             |        | 25               | 12           | 18.4               | 18.0     | 18.4     | 0.0 | 19.5             |
|             | 64QAM  | 25               | 25           | 18.4               | 18.0     | 18.4     | 0.0 | 19.5             |
|             |        | 50               | 0            | 18.4               | 18.0     | 18.4     | 0.0 | 19.5             |
|             |        | 1                | 0            | 18.7               | 18.1     | 18.6     | 0.0 | 19.5             |
|             |        | 1                | 25           | 18.6               | 18.1     | 18.6     | 0.0 | 19.5             |
|             |        | 1                | 49           | 18.8               | 18.1     | 18.6     | 0.0 | 19.5             |
|             |        | 25               | 0            | 18.5               | 18.1     | 18.6     | 0.0 | 19.5             |
|             | 256QAM | 25               | 12           | 18.5               | 18.1     | 18.6     | 0.0 | 19.5             |
|             |        | 25               | 25           | 18.5               | 18.1     | 18.6     | 0.0 | 19.5             |
|             |        | 50               | 0            | 18.5               | 18.1     | 18.6     | 0.0 | 19.5             |
|             |        | 1                | 0            | 16.7               | 16.1     | 16.5     | 2.0 | 17.5             |
|             |        | 1                | 25           | 16.6               | 15.9     | 16.4     | 2.0 | 17.5             |
|             |        | 1                | 49           | 16.6               | 16.0     | 16.4     | 2.0 | 17.5             |
| 5 MHz       | QPSK   | 25               | 0            | 16.4               | 16.0     | 16.4     | 2.0 | 17.5             |
|             |        | 25               | 12           | 16.4               | 15.9     | 16.4     | 2.0 | 17.5             |
|             |        | 25               | 25           | 16.4               | 15.9     | 16.4     | 2.0 | 17.5             |
|             |        | 50               | 0            | 16.4               | 15.9     | 16.3     | 2.0 | 17.5             |
|             | 16QAM  | 1                | 0            | 18.4               | 18.0     | 18.4     | 0.0 | 19.5             |
|             |        | 1                | 12           | 18.4               | 18.1     | 18.4     | 0.0 | 19.5             |
|             |        | 1                | 24           | 18.5               | 18.1     | 18.4     | 0.0 | 19.5             |
|             |        | 12               | 0            | 18.5               | 17.9     | 18.4     | 0.0 | 19.5             |
|             |        | 12               | 7            | 18.4               | 17.9     | 18.4     | 0.0 | 19.5             |
|             |        | 12               | 13           | 18.5               | 18.0     | 18.4     | 0.0 | 19.5             |
|             | 64QAM  | 25               | 0            | 18.5               | 17.9     | 18.4     | 0.0 | 19.5             |
|             |        | 1                | 0            | 18.6               | 18.2     | 18.7     | 0.0 | 19.5             |
|             |        | 1                | 12           | 18.6               | 18.2     | 18.7     | 0.0 | 19.5             |
|             |        | 1                | 24           | 18.9               | 18.3     | 18.8     | 0.0 | 19.5             |
|             |        | 12               | 0            | 18.5               | 18.0     | 18.6     | 0.0 | 19.5             |
|             |        | 12               | 7            | 18.5               | 18.0     | 18.6     | 0.0 | 19.5             |
|             | 256QAM | 12               | 13           | 18.5               | 18.0     | 18.8     | 0.0 | 19.5             |
|             |        | 25               | 0            | 18.5               | 18.0     | 18.7     | 0.0 | 19.5             |
|             |        | 1                | 0            | 16.5               | 16.1     | 16.8     | 2.0 | 17.5             |
|             |        | 1                | 12           | 16.4               | 16.1     | 16.8     | 2.0 | 17.5             |
|             |        | 1                | 24           | 16.5               | 16.1     | 16.7     | 2.0 | 17.5             |
|             |        | 12               | 0            | 16.5               | 16.1     | 16.5     | 2.0 | 17.5             |
|             | 256QAM | 12               | 7            | 16.5               | 16.0     | 16.5     | 2.0 | 17.5             |
|             |        | 12               | 13           | 16.5               | 16.0     | 16.5     | 2.0 | 17.5             |
|             |        | 25               | 0            | 16.5               | 15.9     | 16.4     | 2.0 | 17.5             |

**LTE Band 2 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |          |            | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|----------|------------|-----|------------------|
|             |        |                  |              | 18615              | 18900    | 19185      |     |                  |
|             |        |                  |              | 1851.5 MHz         | 1880 MHz | 1908.5 MHz |     |                  |
| 3 MHz       | QPSK   | 1                | 0            | 18.5               | 18.0     | 18.5       | 0.0 | 19.5             |
|             |        | 1                | 8            | 18.4               | 17.8     | 18.6       | 0.0 | 19.5             |
|             |        | 1                | 14           | 18.5               | 17.9     | 18.5       | 0.0 | 19.5             |
|             |        | 8                | 0            | 18.4               | 17.9     | 18.4       | 0.0 | 19.5             |
|             |        | 8                | 4            | 18.3               | 17.9     | 18.3       | 0.0 | 19.5             |
|             |        | 8                | 7            | 18.3               | 17.9     | 18.4       | 0.0 | 19.5             |
|             | 16QAM  | 15               | 0            | 18.4               | 17.9     | 18.4       | 0.0 | 19.5             |
|             |        | 1                | 0            | 18.5               | 18.4     | 18.9       | 0.0 | 19.5             |
|             |        | 1                | 8            | 18.8               | 18.3     | 18.9       | 0.0 | 19.5             |
|             |        | 1                | 14           | 18.6               | 18.2     | 18.9       | 0.0 | 19.5             |
|             |        | 8                | 0            | 18.4               | 18.1     | 18.4       | 0.0 | 19.5             |
|             |        | 8                | 4            | 18.5               | 18.0     | 18.5       | 0.0 | 19.5             |
|             | 64QAM  | 8                | 7            | 18.4               | 18.1     | 18.4       | 0.0 | 19.5             |
|             |        | 15               | 0            | 18.4               | 17.9     | 18.5       | 0.0 | 19.5             |
|             |        | 1                | 0            | 18.7               | 18.0     | 18.7       | 0.0 | 19.5             |
|             |        | 1                | 8            | 18.8               | 18.0     | 18.7       | 0.0 | 19.5             |
|             |        | 1                | 14           | 18.7               | 17.9     | 18.8       | 0.0 | 19.5             |
|             |        | 8                | 0            | 18.5               | 17.9     | 18.8       | 0.0 | 19.5             |
|             | 256QAM | 8                | 4            | 18.4               | 18.0     | 18.7       | 0.0 | 19.5             |
|             |        | 8                | 7            | 18.5               | 17.9     | 18.7       | 0.0 | 19.5             |
|             |        | 15               | 0            | 18.4               | 18.0     | 18.8       | 0.0 | 19.5             |
|             |        | 1                | 0            | 16.5               | 16.1     | 16.5       | 2.0 | 17.5             |
|             |        | 1                | 8            | 16.7               | 16.0     | 16.6       | 2.0 | 17.5             |
|             |        | 1                | 14           | 16.4               | 16.0     | 16.5       | 2.0 | 17.5             |
| 1.4 MHz     | QPSK   | 8                | 0            | 16.4               | 15.9     | 16.5       | 2.0 | 17.5             |
|             |        | 8                | 4            | 16.4               | 16.0     | 16.3       | 2.0 | 17.5             |
|             |        | 8                | 7            | 16.4               | 16.0     | 16.5       | 2.0 | 17.5             |
|             |        | 15               | 0            | 16.4               | 16.0     | 16.5       | 2.0 | 17.5             |
|             | 16QAM  | 1                | 0            | 18.3               | 18.0     | 18.4       | 0.0 | 19.5             |
|             |        | 1                | 3            | 18.4               | 18.0     | 18.5       | 0.0 | 19.5             |
|             |        | 1                | 5            | 18.4               | 18.0     | 18.5       | 0.0 | 19.5             |
|             |        | 3                | 0            | 18.4               | 18.0     | 18.5       | 0.0 | 19.5             |
|             |        | 3                | 1            | 18.4               | 18.0     | 18.5       | 0.0 | 19.5             |
|             |        | 3                | 3            | 18.3               | 18.0     | 18.5       | 0.0 | 19.5             |
|             | 64QAM  | 6                | 0            | 18.3               | 18.0     | 18.5       | 0.0 | 19.5             |
|             |        | 1                | 0            | 18.9               | 18.5     | 18.8       | 0.0 | 19.5             |
|             |        | 1                | 3            | 18.9               | 18.5     | 18.9       | 0.0 | 19.5             |
|             |        | 1                | 5            | 18.9               | 18.5     | 18.8       | 0.0 | 19.5             |
|             |        | 3                | 0            | 18.5               | 18.0     | 18.7       | 0.0 | 19.5             |
|             |        | 3                | 1            | 18.5               | 18.1     | 18.8       | 0.0 | 19.5             |
|             | 256QAM | 3                | 3            | 18.5               | 18.1     | 18.8       | 0.0 | 19.5             |
|             |        | 6                | 0            | 18.5               | 18.1     | 18.6       | 0.0 | 19.5             |
|             |        | 1                | 0            | 18.4               | 17.9     | 18.6       | 0.0 | 19.5             |
|             |        | 1                | 3            | 18.1               | 18.0     | 18.6       | 0.0 | 19.5             |
|             |        | 1                | 5            | 18.5               | 17.9     | 18.7       | 0.0 | 19.5             |
|             |        | 3                | 0            | 18.3               | 18.1     | 18.7       | 0.0 | 19.5             |
| 1.4 MHz     | 64QAM  | 3                | 1            | 18.4               | 17.9     | 18.7       | 0.0 | 19.5             |
|             |        | 3                | 3            | 18.4               | 18.1     | 18.5       | 0.0 | 19.5             |
|             |        | 6                | 0            | 18.3               | 17.9     | 18.6       | 0.0 | 19.5             |
|             | 256QAM | 1                | 0            | 16.5               | 15.9     | 16.4       | 2.0 | 17.5             |
|             |        | 1                | 3            | 16.5               | 15.9     | 16.2       | 2.0 | 17.5             |
|             |        | 1                | 5            | 16.4               | 16.0     | 16.2       | 2.0 | 17.5             |
|             | 256QAM | 3                | 0            | 16.3               | 15.9     | 16.2       | 2.0 | 17.5             |
|             |        | 3                | 1            | 16.3               | 15.9     | 16.3       | 2.0 | 17.5             |
|             |        | 3                | 3            | 16.3               | 15.8     | 16.2       | 2.0 | 17.5             |
|             |        | 6                | 0            | 16.3               | 15.9     | 16.4       | 2.0 | 17.5             |

**LTE Band 4 Measured Results**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Reduced Average Power (dBm)<br>Proximity sensor back-off |            |            |     |                  |
|-------------|--------|------------------|--------------|----------------------------------------------------------|------------|------------|-----|------------------|
|             |        |                  |              | Measured Pwr (dBm)                                       |            |            | MPR | Tune-up<br>Limit |
|             |        |                  |              | 20050                                                    | 20175      | 20300      |     |                  |
|             |        |                  |              | 1720 MHz                                                 | 1732.5 MHz | 1745 MHz   |     |                  |
| 20 MHz      | QPSK   | 1                | 0            |                                                          | 18.9       |            | 0.0 | 20.0             |
|             |        | 1                | 49           |                                                          | 18.7       |            | 0.0 | 20.0             |
|             |        | 1                | 99           |                                                          | 18.8       |            | 0.0 | 20.0             |
|             |        | 50               | 0            |                                                          | 19.0       |            | 0.0 | 20.0             |
|             |        | 50               | 24           |                                                          | 18.8       |            | 0.0 | 20.0             |
|             |        | 50               | 50           |                                                          | 18.8       |            | 0.0 | 20.0             |
|             |        | 100              | 0            |                                                          | 18.8       |            | 0.0 | 20.0             |
|             | 16QAM  | 1                | 0            |                                                          | 19.1       |            | 0.0 | 20.0             |
|             |        | 1                | 49           |                                                          | 18.9       |            | 0.0 | 20.0             |
|             |        | 1                | 99           |                                                          | 19.1       |            | 0.0 | 20.0             |
|             |        | 50               | 0            |                                                          | 18.9       |            | 0.0 | 20.0             |
|             |        | 50               | 24           |                                                          | 18.9       |            | 0.0 | 20.0             |
|             |        | 50               | 50           |                                                          | 18.8       |            | 0.0 | 20.0             |
|             |        | 100              | 0            |                                                          | 18.9       |            | 0.0 | 20.0             |
|             | 64QAM  | 1                | 0            |                                                          | 19.1       |            | 0.0 | 20.0             |
|             |        | 1                | 49           |                                                          | 19.1       |            | 0.0 | 20.0             |
|             |        | 1                | 99           |                                                          | 19.0       |            | 0.0 | 20.0             |
|             |        | 50               | 0            |                                                          | 19.1       |            | 0.0 | 20.0             |
|             |        | 50               | 24           |                                                          | 19.1       |            | 0.0 | 20.0             |
|             |        | 50               | 50           |                                                          | 19.1       |            | 0.0 | 20.0             |
|             |        | 100              | 0            |                                                          | 19.1       |            | 0.0 | 20.0             |
|             | 256QAM | 1                | 0            |                                                          | 17.1       |            | 1.0 | 19.0             |
|             |        | 1                | 49           |                                                          | 16.8       |            | 1.0 | 19.0             |
|             |        | 1                | 99           |                                                          | 16.9       |            | 1.0 | 19.0             |
|             |        | 50               | 0            |                                                          | 16.8       |            | 1.0 | 19.0             |
|             |        | 50               | 24           |                                                          | 16.8       |            | 1.0 | 19.0             |
|             |        | 50               | 50           |                                                          | 16.7       |            | 1.0 | 19.0             |
|             |        | 100              | 0            |                                                          | 16.7       |            | 1.0 | 19.0             |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm)                                       |            |            | MPR | Tune-up<br>Limit |
|             |        |                  |              | 20025                                                    | 20175      | 20325      |     |                  |
|             |        |                  |              | 1717.5 MHz                                               | 1732.5 MHz | 1747.5 MHz |     |                  |
|             |        |                  |              |                                                          |            |            |     |                  |
| 15 MHz      | QPSK   | 1                | 0            | 19.0                                                     | 18.9       | 18.8       | 0.0 | 20.0             |
|             |        | 1                | 37           | 18.8                                                     | 18.8       | 18.8       | 0.0 | 20.0             |
|             |        | 1                | 74           | 18.9                                                     | 18.9       | 18.7       | 0.0 | 20.0             |
|             |        | 36               | 0            | 18.9                                                     | 18.9       | 18.6       | 0.0 | 20.0             |
|             |        | 36               | 20           | 18.8                                                     | 18.8       | 18.5       | 0.0 | 20.0             |
|             |        | 36               | 39           | 18.8                                                     | 18.8       | 18.5       | 0.0 | 20.0             |
|             |        | 75               | 0            | 18.8                                                     | 18.8       | 18.6       | 0.0 | 20.0             |
|             | 16QAM  | 1                | 0            | 19.0                                                     | 19.3       | 19.1       | 0.0 | 20.0             |
|             |        | 1                | 37           | 19.0                                                     | 19.3       | 19.0       | 0.0 | 20.0             |
|             |        | 1                | 74           | 19.0                                                     | 19.3       | 19.0       | 0.0 | 20.0             |
|             |        | 36               | 0            | 18.9                                                     | 18.9       | 18.6       | 0.0 | 20.0             |
|             |        | 36               | 20           | 18.8                                                     | 18.8       | 18.6       | 0.0 | 20.0             |
|             |        | 36               | 39           | 18.8                                                     | 18.8       | 18.6       | 0.0 | 20.0             |
|             |        | 75               | 0            | 18.8                                                     | 18.8       | 18.6       | 0.0 | 20.0             |
|             | 64QAM  | 1                | 0            | 19.0                                                     | 19.2       | 18.9       | 0.0 | 20.0             |
|             |        | 1                | 37           | 19.0                                                     | 19.1       | 18.9       | 0.0 | 20.0             |
|             |        | 1                | 74           | 19.0                                                     | 19.2       | 19.0       | 0.0 | 20.0             |
|             |        | 36               | 0            | 19.0                                                     | 19.2       | 18.6       | 0.0 | 20.0             |
|             |        | 36               | 20           | 19.0                                                     | 19.2       | 18.5       | 0.0 | 20.0             |
|             |        | 36               | 39           | 19.0                                                     | 19.1       | 18.5       | 0.0 | 20.0             |
|             |        | 75               | 0            | 19.0                                                     | 19.1       | 18.6       | 0.0 | 20.0             |
|             | 256QAM | 1                | 0            | 17.1                                                     | 16.8       | 16.7       | 1.0 | 19.0             |
|             |        | 1                | 37           | 17.2                                                     | 16.9       | 16.5       | 1.0 | 19.0             |
|             |        | 1                | 74           | 17.0                                                     | 17.0       | 16.6       | 1.0 | 19.0             |
|             |        | 36               | 0            | 16.9                                                     | 16.9       | 16.5       | 1.0 | 19.0             |
|             |        | 36               | 20           | 16.8                                                     | 16.9       | 16.5       | 1.0 | 19.0             |
|             |        | 36               | 39           | 16.8                                                     | 16.9       | 16.5       | 1.0 | 19.0             |
|             |        | 75               | 0            | 16.8                                                     | 16.9       | 16.5       | 1.0 | 19.0             |

**LTE Band 4 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |            |          | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|------------|----------|-----|------------------|
|             |        |                  |              | 20000              | 20175      | 20350    |     |                  |
|             |        |                  |              | 1715 MHz           | 1732.5 MHz | 1750 MHz |     |                  |
| 10 MHz      | QPSK   | 1                | 0            | 18.9               | 18.9       | 18.6     | 0.0 | 20.0             |
|             |        | 1                | 25           | 18.8               | 18.7       | 18.4     | 0.0 | 20.0             |
|             |        | 1                | 49           | 18.9               | 18.8       | 18.6     | 0.0 | 20.0             |
|             |        | 25               | 0            | 18.9               | 18.9       | 18.5     | 0.0 | 20.0             |
|             |        | 25               | 12           | 18.8               | 18.8       | 18.5     | 0.0 | 20.0             |
|             |        | 25               | 25           | 18.8               | 18.8       | 18.5     | 0.0 | 20.0             |
|             | 16QAM  | 50               | 0            | 18.9               | 18.9       | 18.5     | 0.0 | 20.0             |
|             |        | 1                | 0            | 19.0               | 19.3       | 19.0     | 0.0 | 20.0             |
|             |        | 1                | 25           | 18.8               | 19.0       | 18.9     | 0.0 | 20.0             |
|             |        | 1                | 49           | 19.0               | 19.2       | 19.0     | 0.0 | 20.0             |
|             |        | 25               | 0            | 18.9               | 18.9       | 18.6     | 0.0 | 20.0             |
|             |        | 25               | 12           | 18.9               | 18.9       | 18.5     | 0.0 | 20.0             |
|             | 64QAM  | 25               | 25           | 18.9               | 18.9       | 18.6     | 0.0 | 20.0             |
|             |        | 50               | 0            | 18.9               | 18.9       | 18.6     | 0.0 | 20.0             |
|             |        | 1                | 0            | 19.0               | 18.9       | 18.9     | 0.0 | 20.0             |
|             |        | 1                | 25           | 19.0               | 18.9       | 18.7     | 0.0 | 20.0             |
|             |        | 1                | 49           | 19.0               | 18.9       | 18.7     | 0.0 | 20.0             |
|             |        | 25               | 0            | 19.0               | 18.9       | 18.6     | 0.0 | 20.0             |
|             | 256QAM | 25               | 12           | 19.0               | 18.9       | 18.6     | 0.0 | 20.0             |
|             |        | 25               | 25           | 19.0               | 18.9       | 18.6     | 0.0 | 20.0             |
|             |        | 50               | 0            | 19.0               | 18.9       | 18.6     | 0.0 | 20.0             |
|             |        | 1                | 0            | 16.9               | 16.9       | 16.7     | 1.0 | 19.0             |
|             |        | 1                | 25           | 16.8               | 16.8       | 16.6     | 1.0 | 19.0             |
|             |        | 1                | 49           | 16.9               | 17.0       | 16.6     | 1.0 | 19.0             |
| 5 MHz       | QPSK   | 25               | 0            | 16.9               | 16.8       | 16.5     | 1.0 | 19.0             |
|             |        | 25               | 12           | 16.9               | 16.8       | 16.5     | 1.0 | 19.0             |
|             |        | 25               | 25           | 16.8               | 16.8       | 16.6     | 1.0 | 19.0             |
|             |        | 50               | 0            | 16.8               | 16.8       | 16.5     | 1.0 | 19.0             |
|             | 16QAM  | 1                | 0            | 18.9               | 18.9       | 18.5     | 0.0 | 20.0             |
|             |        | 1                | 12           | 18.9               | 18.9       | 18.5     | 0.0 | 20.0             |
|             |        | 1                | 24           | 19.0               | 18.9       | 18.5     | 0.0 | 20.0             |
|             |        | 12               | 0            | 18.9               | 18.8       | 18.4     | 0.0 | 20.0             |
|             |        | 12               | 7            | 18.9               | 18.8       | 18.4     | 0.0 | 20.0             |
|             |        | 12               | 13           | 18.9               | 18.8       | 18.5     | 0.0 | 20.0             |
|             | 64QAM  | 25               | 0            | 18.9               | 18.8       | 18.4     | 0.0 | 20.0             |
|             |        | 1                | 0            | 19.5               | 19.2       | 18.8     | 0.0 | 20.0             |
|             |        | 1                | 12           | 19.2               | 19.3       | 18.8     | 0.0 | 20.0             |
|             |        | 1                | 24           | 19.4               | 19.3       | 18.9     | 0.0 | 20.0             |
|             |        | 12               | 0            | 18.9               | 18.9       | 18.5     | 0.0 | 20.0             |
|             |        | 12               | 7            | 18.9               | 18.9       | 18.6     | 0.0 | 20.0             |
|             | 256QAM | 12               | 13           | 18.9               | 18.9       | 18.6     | 0.0 | 20.0             |
|             |        | 25               | 0            | 18.9               | 18.9       | 18.4     | 0.0 | 20.0             |
|             |        | 1                | 0            | 18.8               | 19.0       | 19.0     | 0.0 | 20.0             |
|             |        | 1                | 12           | 18.8               | 19.0       | 19.0     | 0.0 | 20.0             |
|             |        | 1                | 24           | 18.8               | 19.0       | 18.9     | 0.0 | 20.0             |
|             |        | 12               | 0            | 18.8               | 19.0       | 18.6     | 0.0 | 20.0             |
| 5 MHz       | 16QAM  | 12               | 7            | 18.9               | 19.0       | 18.5     | 0.0 | 20.0             |
|             |        | 12               | 13           | 18.8               | 19.0       | 18.6     | 0.0 | 20.0             |
|             |        | 25               | 0            | 18.8               | 19.0       | 18.5     | 0.0 | 20.0             |
|             | 256QAM | 1                | 0            | 17.0               | 17.0       | 16.8     | 1.0 | 19.0             |
|             |        | 1                | 12           | 17.1               | 17.0       | 17.0     | 1.0 | 19.0             |
|             |        | 1                | 24           | 17.0               | 17.4       | 16.9     | 1.0 | 19.0             |
|             | 64QAM  | 12               | 0            | 16.8               | 16.8       | 16.5     | 1.0 | 19.0             |
|             |        | 12               | 7            | 16.8               | 16.8       | 16.5     | 1.0 | 19.0             |
|             |        | 12               | 13           | 16.8               | 16.8       | 16.5     | 1.0 | 19.0             |
|             |        | 25               | 0            | 16.8               | 16.8       | 16.5     | 1.0 | 19.0             |

**LTE Band 4 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |            |            | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|------------|------------|-----|------------------|
|             |        |                  |              | 19965              | 20175      | 20385      |     |                  |
|             |        |                  |              | 1711.5 MHz         | 1732.5 MHz | 1753.5 MHz |     |                  |
| 3 MHz       | QPSK   | 1                | 0            | 19.0               | 19.0       | 18.6       | 0.0 | 20.0             |
|             |        | 1                | 8            | 19.0               | 18.8       | 18.7       | 0.0 | 20.0             |
|             |        | 1                | 14           | 19.0               | 18.9       | 18.6       | 0.0 | 20.0             |
|             |        | 8                | 0            | 18.9               | 18.8       | 18.4       | 0.0 | 20.0             |
|             |        | 8                | 4            | 18.9               | 18.8       | 18.4       | 0.0 | 20.0             |
|             |        | 8                | 7            | 18.8               | 18.8       | 18.4       | 0.0 | 20.0             |
|             | 16QAM  | 15               | 0            | 18.9               | 18.8       | 18.4       | 0.0 | 20.0             |
|             |        | 1                | 0            | 19.1               | 19.3       | 19.0       | 0.0 | 20.0             |
|             |        | 1                | 8            | 19.2               | 19.3       | 18.9       | 0.0 | 20.0             |
|             |        | 1                | 14           | 19.1               | 19.2       | 19.0       | 0.0 | 20.0             |
|             |        | 8                | 0            | 18.9               | 18.9       | 18.5       | 0.0 | 20.0             |
|             |        | 8                | 4            | 19.0               | 18.9       | 18.5       | 0.0 | 20.0             |
|             | 64QAM  | 8                | 7            | 19.0               | 18.9       | 18.5       | 0.0 | 20.0             |
|             |        | 15               | 0            | 19.0               | 18.9       | 18.5       | 0.0 | 20.0             |
|             |        | 1                | 0            | 19.4               | 19.2       | 18.7       | 0.0 | 20.0             |
|             |        | 1                | 8            | 19.3               | 19.1       | 18.7       | 0.0 | 20.0             |
|             |        | 1                | 14           | 19.2               | 19.0       | 18.6       | 0.0 | 20.0             |
|             |        | 8                | 0            | 18.9               | 19.2       | 18.4       | 0.0 | 20.0             |
|             | 256QAM | 8                | 4            | 18.9               | 19.2       | 18.4       | 0.0 | 20.0             |
|             |        | 8                | 7            | 18.9               | 19.1       | 18.4       | 0.0 | 20.0             |
|             |        | 15               | 0            | 18.9               | 19.2       | 18.5       | 0.0 | 20.0             |
|             |        | 1                | 0            | 16.9               | 16.9       | 16.7       | 1.0 | 19.0             |
|             |        | 1                | 8            | 17.1               | 17.2       | 16.6       | 1.0 | 19.0             |
|             |        | 1                | 14           | 16.9               | 16.9       | 16.6       | 1.0 | 19.0             |
|             |        | 8                | 0            | 17.0               | 16.8       | 16.5       | 1.0 | 19.0             |
|             |        | 8                | 4            | 16.8               | 16.8       | 16.6       | 1.0 | 19.0             |
|             |        | 8                | 7            | 17.0               | 16.9       | 16.5       | 1.0 | 19.0             |
|             |        | 15               | 0            | 17.0               | 16.8       | 16.5       | 1.0 | 19.0             |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |            |            | MPR | Tune-up<br>Limit |
|             |        |                  |              | 19957              | 20175      | 20393      |     |                  |
|             |        |                  |              | 1710.7 MHz         | 1732.5 MHz | 1754.3 MHz |     |                  |
| 1.4 MHz     | QPSK   | 1                | 0            | 18.8               | 18.8       | 18.4       | 0.0 | 20.0             |
|             |        | 1                | 3            | 18.7               | 18.7       | 18.3       | 0.0 | 20.0             |
|             |        | 1                | 5            | 18.8               | 18.8       | 18.4       | 0.0 | 20.0             |
|             |        | 3                | 0            | 18.8               | 18.7       | 18.3       | 0.0 | 20.0             |
|             |        | 3                | 1            | 18.8               | 18.6       | 18.3       | 0.0 | 20.0             |
|             |        | 3                | 3            | 18.7               | 18.7       | 18.3       | 0.0 | 20.0             |
|             | 16QAM  | 6                | 0            | 18.8               | 18.7       | 18.4       | 0.0 | 20.0             |
|             |        | 1                | 0            | 19.2               | 18.9       | 18.7       | 0.0 | 20.0             |
|             |        | 1                | 3            | 18.9               | 18.9       | 18.6       | 0.0 | 20.0             |
|             |        | 1                | 5            | 19.2               | 19.0       | 18.7       | 0.0 | 20.0             |
|             |        | 3                | 0            | 18.9               | 18.8       | 18.4       | 0.0 | 20.0             |
|             |        | 3                | 1            | 18.8               | 18.7       | 18.5       | 0.0 | 20.0             |
|             | 64QAM  | 3                | 3            | 18.9               | 18.8       | 18.5       | 0.0 | 20.0             |
|             |        | 6                | 0            | 19.0               | 18.8       | 18.3       | 0.0 | 20.0             |
|             |        | 1                | 0            | 19.0               | 18.8       | 18.8       | 0.0 | 20.0             |
|             |        | 1                | 3            | 19.0               | 18.8       | 18.7       | 0.0 | 20.0             |
|             |        | 1                | 5            | 19.1               | 18.8       | 18.8       | 0.0 | 20.0             |
|             |        | 3                | 0            | 19.0               | 18.6       | 18.5       | 0.0 | 20.0             |
|             | 256QAM | 3                | 1            | 19.2               | 18.8       | 18.6       | 0.0 | 20.0             |
|             |        | 3                | 3            | 18.9               | 18.9       | 18.5       | 0.0 | 20.0             |
|             |        | 6                | 0            | 19.1               | 18.9       | 18.4       | 0.0 | 20.0             |
|             |        | 1                | 0            | 16.9               | 16.7       | 16.6       | 1.0 | 19.0             |
|             |        | 1                | 3            | 16.8               | 17.0       | 16.7       | 1.0 | 19.0             |
|             |        | 1                | 5            | 16.9               | 16.8       | 16.5       | 1.0 | 19.0             |
|             |        | 3                | 0            | 16.8               | 16.6       | 16.3       | 2.0 | 18.0             |
|             |        | 3                | 1            | 16.7               | 16.7       | 16.4       | 2.0 | 18.0             |
|             |        | 3                | 3            | 16.8               | 16.6       | 16.4       | 2.0 | 18.0             |
|             |        | 6                | 0            | 16.9               | 16.7       | 16.4       | 2.0 | 18.0             |

**LTE Band 25 Measured Results**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Reduced Average Power (dBm)<br>Hotspot back-off |            |          |     |                  | Reduced Average Power (dBm)<br>Proximity sensor back-off |            |          |     |                  |
|-------------|--------|------------------|--------------|-------------------------------------------------|------------|----------|-----|------------------|----------------------------------------------------------|------------|----------|-----|------------------|
|             |        |                  |              | Measured Pw r (dBm)                             |            |          | MPR | Tune-up<br>Limit | Measured Pw r (dBm)                                      |            |          | MPR | Tune-up<br>Limit |
|             |        |                  |              | 26140                                           | 26365      | 26590    |     |                  | 26140                                                    | 26365      | 26590    |     |                  |
|             |        |                  |              | 1860 MHz                                        | 1882.5 MHz | 1905 MHz |     |                  | 1860 MHz                                                 | 1882.5 MHz | 1905 MHz |     |                  |
| 20 MHz      | QPSK   | 1                | 0            | 18.3                                            | 18.0       | 18.5     | 0.0 | 19.0             | 18.3                                                     | 18.0       | 18.5     | 0.0 | 19.0             |
|             |        | 1                | 49           | 18.2                                            | 17.9       | 18.3     | 0.0 | 19.0             | 18.2                                                     | 17.9       | 18.3     | 0.0 | 19.0             |
|             |        | 1                | 99           | 18.4                                            | 17.9       | 18.4     | 0.0 | 19.0             | 18.4                                                     | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 50               | 0            | 18.4                                            | 18.0       | 18.5     | 0.0 | 19.0             | 18.3                                                     | 18.0       | 18.4     | 0.0 | 19.0             |
|             |        | 50               | 24           | 18.3                                            | 17.9       | 18.3     | 0.0 | 19.0             | 18.4                                                     | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 50               | 50           | 18.3                                            | 17.9       | 18.4     | 0.0 | 19.0             | 18.4                                                     | 17.9       | 18.4     | 0.0 | 19.0             |
|             | 16QAM  | 100              | 0            | 18.3                                            | 17.9       | 18.3     | 0.0 | 19.0             | 18.4                                                     | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 1                | 0            | 18.6                                            | 18.4       | 18.7     | 0.0 | 19.0             | 18.7                                                     | 18.5       | 18.7     | 0.0 | 19.0             |
|             |        | 1                | 49           | 18.4                                            | 18.2       | 18.5     | 0.0 | 19.0             | 18.6                                                     | 18.4       | 18.6     | 0.0 | 19.0             |
|             |        | 1                | 99           | 18.7                                            | 18.3       | 18.7     | 0.0 | 19.0             | 18.7                                                     | 18.4       | 18.7     | 0.0 | 19.0             |
|             |        | 50               | 0            | 18.3                                            | 18.0       | 18.4     | 0.0 | 19.0             | 18.4                                                     | 18.0       | 18.4     | 0.0 | 19.0             |
|             |        | 50               | 24           | 18.3                                            | 17.9       | 18.4     | 0.0 | 19.0             | 18.4                                                     | 18.0       | 18.4     | 0.0 | 19.0             |
|             | 64QAM  | 50               | 50           | 18.3                                            | 17.9       | 18.4     | 0.0 | 19.0             | 18.4                                                     | 18.0       | 18.4     | 0.0 | 19.0             |
|             |        | 100              | 0            | 18.4                                            | 17.9       | 18.4     | 0.0 | 19.0             | 18.4                                                     | 18.0       | 18.4     | 0.0 | 19.0             |
|             |        | 1                | 0            | 18.8                                            | 18.2       | 18.6     | 0.0 | 19.0             | 18.8                                                     | 18.2       | 18.6     | 0.0 | 19.0             |
|             |        | 1                | 49           | 18.6                                            | 18.2       | 18.6     | 0.0 | 19.0             | 18.6                                                     | 18.2       | 18.6     | 0.0 | 19.0             |
|             |        | 1                | 99           | 18.7                                            | 18.2       | 18.6     | 0.0 | 19.0             | 18.7                                                     | 18.3       | 18.6     | 0.0 | 19.0             |
|             |        | 50               | 0            | 18.4                                            | 18.2       | 18.6     | 0.0 | 19.0             | 18.4                                                     | 18.2       | 18.6     | 0.0 | 19.0             |
| 15 MHz      | QPSK   | 50               | 24           | 18.4                                            | 18.2       | 18.6     | 0.0 | 19.0             | 18.4                                                     | 18.2       | 18.6     | 0.0 | 19.0             |
|             |        | 50               | 50           | 18.4                                            | 18.2       | 18.6     | 0.0 | 19.0             | 18.4                                                     | 18.2       | 18.6     | 0.0 | 19.0             |
|             |        | 100              | 0            | 18.4                                            | 18.2       | 18.6     | 0.0 | 19.0             | 18.4                                                     | 18.3       | 18.6     | 0.0 | 19.0             |
|             | 16QAM  | 1                | 0            | 17.5                                            | 17.1       | 17.6     | 1.0 | 18.0             | 17.7                                                     | 17.3       | 17.6     | 1.0 | 18.0             |
|             |        | 1                | 49           | 17.4                                            | 17.0       | 17.4     | 1.0 | 18.0             | 17.5                                                     | 17.2       | 17.5     | 1.0 | 18.0             |
|             |        | 1                | 99           | 17.5                                            | 17.1       | 17.5     | 1.0 | 18.0             | 17.6                                                     | 17.2       | 17.5     | 1.0 | 18.0             |
|             |        | 50               | 0            | 17.2                                            | 16.8       | 17.3     | 1.0 | 18.0             | 17.3                                                     | 16.8       | 17.3     | 1.0 | 18.0             |
|             |        | 50               | 24           | 17.2                                            | 16.8       | 17.3     | 1.0 | 18.0             | 17.3                                                     | 16.8       | 17.3     | 1.0 | 18.0             |
|             |        | 50               | 50           | 17.2                                            | 16.8       | 17.2     | 1.0 | 18.0             | 17.3                                                     | 16.8       | 17.3     | 1.0 | 18.0             |
|             | 64QAM  | 100              | 0            | 17.2                                            | 16.8       | 17.3     | 1.0 | 18.0             | 17.3                                                     | 16.8       | 17.3     | 1.0 | 18.0             |
|             |        | 1                | 0            | 18.5                                            | 17.9       | 18.5     | 0.0 | 19.0             | 18.4                                                     | 18.0       | 18.6     | 0.0 | 19.0             |
|             |        | 1                | 37           | 18.3                                            | 18.0       | 18.7     | 0.0 | 19.0             | 18.3                                                     | 17.8       | 18.7     | 0.0 | 19.0             |
|             |        | 1                | 74           | 18.4                                            | 18.0       | 18.5     | 0.0 | 19.0             | 18.4                                                     | 18.0       | 18.5     | 0.0 | 19.0             |
|             |        | 36               | 0            | 18.3                                            | 17.8       | 18.4     | 0.0 | 19.0             | 18.3                                                     | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 36               | 20           | 18.3                                            | 17.8       | 18.3     | 0.0 | 19.0             | 18.3                                                     | 17.9       | 18.4     | 0.0 | 19.0             |
| 15 MHz      | 16QAM  | 36               | 39           | 18.3                                            | 17.8       | 18.3     | 0.0 | 19.0             | 18.3                                                     | 17.9       | 18.3     | 0.0 | 19.0             |
|             |        | 75               | 0            | 18.3                                            | 17.8       | 18.3     | 0.0 | 19.0             | 18.3                                                     | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 1                | 0            | 18.6                                            | 18.3       | 18.9     | 0.0 | 19.0             | 18.6                                                     | 18.3       | 18.9     | 0.0 | 19.0             |
|             |        | 1                | 37           | 18.4                                            | 18.2       | 18.9     | 0.0 | 19.0             | 18.5                                                     | 18.2       | 18.9     | 0.0 | 19.0             |
|             |        | 1                | 74           | 18.6                                            | 18.3       | 18.8     | 0.0 | 19.0             | 18.6                                                     | 18.3       | 18.8     | 0.0 | 19.0             |
|             |        | 36               | 0            | 18.3                                            | 17.9       | 18.4     | 0.0 | 19.0             | 18.3                                                     | 17.9       | 18.5     | 0.0 | 19.0             |
|             | 64QAM  | 36               | 20           | 18.3                                            | 17.9       | 18.4     | 0.0 | 19.0             | 18.3                                                     | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 36               | 39           | 18.3                                            | 17.9       | 18.4     | 0.0 | 19.0             | 18.3                                                     | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 75               | 0            | 18.3                                            | 17.9       | 18.4     | 0.0 | 19.0             | 18.3                                                     | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 1                | 0            | 18.4                                            | 18.1       | 18.5     | 0.0 | 19.0             | 18.7                                                     | 18.2       | 18.6     | 0.0 | 19.0             |
|             |        | 1                | 37           | 18.4                                            | 18.1       | 18.5     | 0.0 | 19.0             | 18.7                                                     | 18.2       | 18.6     | 0.0 | 19.0             |
|             |        | 1                | 74           | 18.5                                            | 18.1       | 18.5     | 0.0 | 19.0             | 18.8                                                     | 18.2       | 18.5     | 0.0 | 19.0             |
| 15 MHz      | 256QAM | 36               | 0            | 18.3                                            | 18.1       | 18.5     | 0.0 | 19.0             | 18.4                                                     | 18.2       | 18.5     | 0.0 | 19.0             |
|             |        | 36               | 20           | 18.2                                            | 18.1       | 18.5     | 0.0 | 19.0             | 18.3                                                     | 18.2       | 18.5     | 0.0 | 19.0             |
|             |        | 36               | 39           | 18.2                                            | 18.1       | 18.5     | 0.0 | 19.0             | 18.3                                                     | 18.2       | 18.6     | 0.0 | 19.0             |
|             |        | 75               | 0            | 18.3                                            | 18.1       | 18.5     | 0.0 | 19.0             | 18.4                                                     | 18.2       | 18.6     | 0.0 | 19.0             |
|             |        | 1                | 0            | 17.4                                            | 17.1       | 17.4     | 1.0 | 18.0             | 17.5                                                     | 17.2       | 17.6     | 1.0 | 18.0             |
|             |        | 1                | 37           | 17.3                                            | 17.2       | 17.5     | 1.0 | 18.0             | 17.4                                                     | 17.3       | 17.4     | 1.0 | 18.0             |
|             | 256QAM | 1                | 74           | 17.4                                            | 17.1       | 17.4     | 1.0 | 18.0             | 17.5                                                     | 17.1       | 17.5     | 1.0 | 18.0             |
|             |        | 36               | 0            | 17.3                                            | 16.9       | 17.3     | 1.0 | 18.0             | 17.3                                                     | 16.9       | 17.4     | 1.0 | 18.0             |
|             |        | 36               | 20           | 17.2                                            | 16.9       | 17.3     | 1.0 | 18.0             | 17.3                                                     | 16.9       | 17.4     | 1.0 | 18.0             |
|             |        | 36               | 39           | 17.3                                            | 16.9       | 17.3     | 1.0 | 18.0             | 17.3                                                     | 16.9       | 17.4     | 1.0 | 18.0             |
|             |        | 75               | 0            | 17.3                                            | 16.9       | 17.3     | 1.0 | 18.0             | 17.3                                                     | 16.9       | 17.4     | 1.0 | 18.0             |

**LTE Band 25 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |            |          | MPR | Tune-up<br>Limit | Measured Pwr (dBm) |            |          | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|------------|----------|-----|------------------|--------------------|------------|----------|-----|------------------|
|             |        |                  |              | 26090              | 26365      | 26640    |     |                  | 26090              | 26365      | 26640    |     |                  |
|             |        |                  |              | 1855 MHz           | 1882.5 MHz | 1910 MHz |     |                  | 1855 MHz           | 1882.5 MHz | 1910 MHz |     |                  |
| 10 MHz      | QPSK   | 1                | 0            | 18.5               | 18.0       | 18.4     | 0.0 | 19.0             | 18.5               | 18.0       | 18.5     | 0.0 | 19.0             |
|             |        | 1                | 25           | 18.4               | 17.8       | 18.3     | 0.0 | 19.0             | 18.4               | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 1                | 49           | 18.5               | 17.9       | 18.5     | 0.0 | 19.0             | 18.6               | 17.9       | 18.5     | 0.0 | 19.0             |
|             |        | 25               | 0            | 18.4               | 17.9       | 18.4     | 0.0 | 19.0             | 18.4               | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 25               | 12           | 18.4               | 17.9       | 18.4     | 0.0 | 19.0             | 18.4               | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 25               | 25           | 18.4               | 17.9       | 18.4     | 0.0 | 19.0             | 18.4               | 17.9       | 18.4     | 0.0 | 19.0             |
|             | 16QAM  | 50               | 0            | 18.4               | 17.9       | 18.4     | 0.0 | 19.0             | 18.4               | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 1                | 0            | 18.7               | 18.5       | 18.9     | 0.0 | 19.0             | 18.5               | 18.5       | 18.8     | 0.0 | 19.0             |
|             |        | 1                | 25           | 18.6               | 18.2       | 18.9     | 0.0 | 19.0             | 18.4               | 18.2       | 18.7     | 0.0 | 19.0             |
|             |        | 1                | 49           | 18.7               | 18.3       | 19.0     | 0.0 | 19.0             | 18.6               | 18.4       | 18.8     | 0.0 | 19.0             |
|             |        | 25               | 0            | 18.4               | 18.0       | 18.4     | 0.0 | 19.0             | 18.4               | 18.0       | 18.4     | 0.0 | 19.0             |
|             |        | 25               | 12           | 18.4               | 17.9       | 18.4     | 0.0 | 19.0             | 18.4               | 18.0       | 18.4     | 0.0 | 19.0             |
|             | 64QAM  | 25               | 25           | 18.4               | 17.9       | 18.4     | 0.0 | 19.0             | 18.5               | 18.0       | 18.4     | 0.0 | 19.0             |
|             |        | 50               | 0            | 18.4               | 17.9       | 18.4     | 0.0 | 19.0             | 18.4               | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 1                | 0            | 18.7               | 18.0       | 18.5     | 0.0 | 19.0             | 18.8               | 18.0       | 18.5     | 0.0 | 19.0             |
|             |        | 1                | 25           | 18.5               | 18.0       | 18.5     | 0.0 | 19.0             | 18.6               | 18.0       | 18.5     | 0.0 | 19.0             |
|             |        | 1                | 49           | 18.6               | 18.0       | 18.5     | 0.0 | 19.0             | 18.6               | 18.0       | 18.5     | 0.0 | 19.0             |
|             |        | 25               | 0            | 18.4               | 18.0       | 18.5     | 0.0 | 19.0             | 18.5               | 18.0       | 18.5     | 0.0 | 19.0             |
| 5 MHz       | QPSK   | 25               | 12           | 18.4               | 18.0       | 18.5     | 0.0 | 19.0             | 18.5               | 18.0       | 18.5     | 0.0 | 19.0             |
|             |        | 25               | 25           | 18.4               | 18.0       | 18.5     | 0.0 | 19.0             | 18.5               | 18.0       | 18.5     | 0.0 | 19.0             |
|             |        | 50               | 0            | 18.4               | 18.0       | 18.5     | 0.0 | 19.0             | 18.4               | 18.0       | 18.5     | 0.0 | 19.0             |
|             | 16QAM  | 1                | 0            | 17.4               | 17.1       | 17.5     | 1.0 | 18.0             | 17.5               | 17.1       | 17.5     | 1.0 | 18.0             |
|             |        | 1                | 25           | 17.4               | 17.0       | 17.3     | 1.0 | 18.0             | 17.4               | 16.9       | 17.4     | 1.0 | 18.0             |
|             |        | 1                | 49           | 17.5               | 17.0       | 17.4     | 1.0 | 18.0             | 17.5               | 17.0       | 17.5     | 1.0 | 18.0             |
|             |        | 25               | 0            | 17.4               | 16.8       | 17.4     | 1.0 | 18.0             | 17.4               | 16.9       | 17.4     | 1.0 | 18.0             |
|             |        | 25               | 12           | 17.4               | 16.8       | 17.3     | 1.0 | 18.0             | 17.4               | 16.9       | 17.4     | 1.0 | 18.0             |
|             |        | 25               | 25           | 17.4               | 16.8       | 17.3     | 1.0 | 18.0             | 17.4               | 16.9       | 17.4     | 1.0 | 18.0             |
|             | 64QAM  | 50               | 0            | 17.3               | 16.8       | 17.3     | 1.0 | 18.0             | 17.3               | 16.8       | 17.3     | 1.0 | 18.0             |
|             |        | 1                | 0            | 18.5               | 17.9       | 18.3     | 0.0 | 19.0             | 18.5               | 17.9       | 18.3     | 0.0 | 19.0             |
|             |        | 1                | 12           | 18.5               | 17.9       | 18.2     | 0.0 | 19.0             | 18.6               | 17.8       | 18.4     | 0.0 | 19.0             |
|             |        | 1                | 24           | 18.6               | 18.0       | 18.4     | 0.0 | 19.0             | 18.6               | 18.0       | 18.4     | 0.0 | 19.0             |
|             |        | 12               | 0            | 18.4               | 17.9       | 18.3     | 0.0 | 19.0             | 18.5               | 17.9       | 18.3     | 0.0 | 19.0             |
|             |        | 12               | 7            | 18.4               | 17.9       | 18.3     | 0.0 | 19.0             | 18.5               | 17.9       | 18.3     | 0.0 | 19.0             |
| 5 MHz       | 16QAM  | 12               | 13           | 18.5               | 17.9       | 18.3     | 0.0 | 19.0             | 18.5               | 17.9       | 18.3     | 0.0 | 19.0             |
|             |        | 25               | 0            | 18.4               | 17.9       | 18.2     | 0.0 | 19.0             | 18.5               | 17.9       | 18.3     | 0.0 | 19.0             |
|             |        | 1                | 0            | 18.7               | 18.2       | 18.8     | 0.0 | 19.0             | 18.8               | 18.4       | 18.5     | 0.0 | 19.0             |
|             |        | 1                | 12           | 18.8               | 18.2       | 19.0     | 0.0 | 19.0             | 18.9               | 18.5       | 18.6     | 0.0 | 19.0             |
|             |        | 1                | 24           | 18.9               | 18.3       | 18.7     | 0.0 | 19.0             | 19.0               | 18.3       | 18.6     | 0.0 | 19.0             |
|             |        | 12               | 0            | 18.5               | 18.0       | 18.3     | 0.0 | 19.0             | 18.6               | 18.0       | 18.4     | 0.0 | 19.0             |
|             | 64QAM  | 12               | 7            | 18.5               | 18.0       | 18.3     | 0.0 | 19.0             | 18.6               | 17.9       | 18.3     | 0.0 | 19.0             |
|             |        | 12               | 13           | 18.6               | 18.0       | 18.3     | 0.0 | 19.0             | 18.6               | 17.9       | 18.4     | 0.0 | 19.0             |
|             |        | 25               | 0            | 18.4               | 17.9       | 18.2     | 0.0 | 19.0             | 18.5               | 17.9       | 18.3     | 0.0 | 19.0             |
|             |        | 1                | 0            | 18.5               | 18.2       | 18.3     | 0.0 | 19.0             | 18.9               | 18.0       | 18.4     | 0.0 | 19.0             |
|             |        | 1                | 12           | 18.3               | 18.2       | 18.3     | 0.0 | 19.0             | 18.7               | 18.0       | 18.4     | 0.0 | 19.0             |
|             |        | 1                | 24           | 18.6               | 18.2       | 18.3     | 0.0 | 19.0             | 18.8               | 18.0       | 18.4     | 0.0 | 19.0             |
| 5 MHz       | 256QAM | 12               | 0            | 18.4               | 18.2       | 18.3     | 0.0 | 19.0             | 18.5               | 18.0       | 18.4     | 0.0 | 19.0             |
|             |        | 12               | 7            | 18.3               | 18.2       | 18.3     | 0.0 | 19.0             | 18.5               | 18.0       | 18.4     | 0.0 | 19.0             |
|             |        | 12               | 13           | 18.4               | 18.2       | 18.3     | 0.0 | 19.0             | 18.5               | 18.0       | 18.4     | 0.0 | 19.0             |
|             |        | 25               | 0            | 18.4               | 18.2       | 18.3     | 0.0 | 19.0             | 18.5               | 18.0       | 18.4     | 0.0 | 19.0             |
|             |        | 1                | 0            | 17.5               | 17.2       | 17.3     | 1.0 | 18.0             | 17.9               | 16.9       | 17.3     | 1.0 | 18.0             |
|             |        | 1                | 12           | 17.5               | 17.2       | 17.2     | 1.0 | 18.0             | 18.0               | 16.7       | 17.4     | 1.0 | 18.0             |
|             | 256QAM | 1                | 24           | 17.4               | 17.2       | 17.2     | 1.0 | 18.0             | 17.9               | 16.9       | 17.3     | 1.0 | 18.0             |
|             |        | 12               | 0            | 17.3               | 16.8       | 17.2     | 1.0 | 18.0             | 17.4               | 16.9       | 17.2     | 1.0 | 18.0             |
|             |        | 12               | 7            | 17.3               | 16.8       | 17.2     | 1.0 | 18.0             | 17.4               | 16.9       | 17.2     | 1.0 | 18.0             |
|             |        | 12               | 13           | 17.4               | 16.9       | 17.2     | 1.0 | 18.0             | 17.5               | 16.9       | 17.3     | 1.0 | 18.0             |
|             |        | 25               | 0            | 17.3               | 16.8       | 17.2     | 1.0 | 18.0             | 17.4               | 16.9       | 17.2     | 1.0 | 18.0             |

**LTE Band 25 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |            |            | MPR | Tune-up<br>Limit | Measured Pwr (dBm) |            |            | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|------------|------------|-----|------------------|--------------------|------------|------------|-----|------------------|
|             |        |                  |              | 26055              | 26365      | 26675      |     |                  | 26055              | 26365      | 26675      |     |                  |
|             |        |                  |              | 1851.5 MHz         | 1882.5 MHz | 1913.5 MHz |     |                  | 1851.5 MHz         | 1882.5 MHz | 1913.5 MHz |     |                  |
| 3 MHz       | QPSK   | 1                | 0            | 18.6               | 18.0       | 18.4       | 0.0 | 19.0             | 18.6               | 18.0       | 18.4       | 0.0 | 19.0             |
|             |        | 1                | 8            | 18.6               | 17.8       | 18.5       | 0.0 | 19.0             | 18.4               | 18.2       | 18.4       | 0.0 | 19.0             |
|             |        | 1                | 14           | 18.7               | 17.9       | 18.4       | 0.0 | 19.0             | 18.5               | 18.1       | 18.5       | 0.0 | 19.0             |
|             |        | 8                | 0            | 18.5               | 17.8       | 18.2       | 0.0 | 19.0             | 18.5               | 17.8       | 18.3       | 0.0 | 19.0             |
|             |        | 8                | 4            | 18.5               | 17.8       | 18.2       | 0.0 | 19.0             | 18.5               | 17.9       | 18.3       | 0.0 | 19.0             |
|             |        | 8                | 7            | 18.5               | 17.9       | 18.3       | 0.0 | 19.0             | 18.5               | 17.9       | 18.3       | 0.0 | 19.0             |
|             | 16QAM  | 15               | 0            | 18.5               | 17.9       | 18.2       | 0.0 | 19.0             | 18.5               | 17.9       | 18.3       | 0.0 | 19.0             |
|             |        | 1                | 0            | 18.7               | 18.3       | 18.8       | 0.0 | 19.0             | 18.9               | 18.2       | 18.7       | 0.0 | 19.0             |
|             |        | 1                | 8            | 18.8               | 18.3       | 18.8       | 0.0 | 19.0             | 18.8               | 18.2       | 18.8       | 0.0 | 19.0             |
|             |        | 1                | 14           | 18.8               | 18.2       | 18.9       | 0.0 | 19.0             | 18.9               | 18.3       | 18.7       | 0.0 | 19.0             |
|             |        | 8                | 0            | 18.5               | 18.0       | 18.3       | 0.0 | 19.0             | 18.6               | 17.9       | 18.3       | 0.0 | 19.0             |
|             |        | 8                | 4            | 18.6               | 18.0       | 18.3       | 0.0 | 19.0             | 18.6               | 18.0       | 18.3       | 0.0 | 19.0             |
|             | 64QAM  | 8                | 7            | 18.5               | 18.0       | 18.3       | 0.0 | 19.0             | 18.6               | 17.9       | 18.3       | 0.0 | 19.0             |
|             |        | 15               | 0            | 18.5               | 17.9       | 18.3       | 0.0 | 19.0             | 18.5               | 18.0       | 18.3       | 0.0 | 19.0             |
|             |        | 1                | 0            | 18.7               | 18.1       | 18.3       | 0.0 | 19.0             | 18.9               | 18.0       | 18.2       | 0.0 | 19.0             |
|             |        | 1                | 8            | 18.7               | 18.1       | 18.3       | 0.0 | 19.0             | 19.0               | 18.0       | 18.2       | 0.0 | 19.0             |
|             |        | 1                | 14           | 18.6               | 18.1       | 18.3       | 0.0 | 19.0             | 18.8               | 18.0       | 18.2       | 0.0 | 19.0             |
|             |        | 8                | 0            | 18.4               | 18.1       | 18.3       | 0.0 | 19.0             | 18.4               | 18.0       | 18.2       | 0.0 | 19.0             |
|             | 256QAM | 8                | 4            | 18.4               | 18.2       | 18.3       | 0.0 | 19.0             | 18.4               | 18.0       | 18.2       | 0.0 | 19.0             |
|             |        | 8                | 7            | 18.4               | 18.2       | 18.3       | 0.0 | 19.0             | 18.4               | 18.0       | 18.2       | 0.0 | 19.0             |
|             |        | 15               | 0            | 18.4               | 18.1       | 18.3       | 0.0 | 19.0             | 18.5               | 18.0       | 18.2       | 0.0 | 19.0             |
|             |        | 1                | 0            | 17.5               | 17.1       | 17.5       | 1.0 | 18.0             | 17.6               | 17.1       | 17.5       | 1.0 | 18.0             |
|             |        | 1                | 8            | 17.5               | 17.4       | 17.5       | 1.0 | 18.0             | 17.7               | 17.1       | 17.5       | 1.0 | 18.0             |
|             |        | 1                | 14           | 17.5               | 17.1       | 17.4       | 1.0 | 18.0             | 17.6               | 17.1       | 17.5       | 1.0 | 18.0             |
| 1.4 MHz     | QPSK   | 8                | 0            | 17.4               | 16.9       | 17.3       | 1.0 | 18.0             | 17.5               | 16.9       | 17.3       | 1.0 | 18.0             |
|             |        | 8                | 4            | 17.3               | 16.9       | 17.2       | 1.0 | 18.0             | 17.4               | 16.9       | 17.3       | 1.0 | 18.0             |
|             |        | 8                | 7            | 17.4               | 16.9       | 17.3       | 1.0 | 18.0             | 17.5               | 16.9       | 17.3       | 1.0 | 18.0             |
|             |        | 15               | 0            | 17.5               | 16.8       | 17.3       | 1.0 | 18.0             | 17.5               | 16.8       | 17.3       | 1.0 | 18.0             |
|             | 16QAM  | 1                | 0            | 18.4               | 17.9       | 18.2       | 0.0 | 19.0             | 18.4               | 17.9       | 18.3       | 0.0 | 19.0             |
|             |        | 1                | 3            | 18.3               | 17.8       | 18.2       | 0.0 | 19.0             | 18.3               | 17.7       | 18.1       | 0.0 | 19.0             |
|             |        | 1                | 5            | 18.4               | 17.9       | 18.2       | 0.0 | 19.0             | 18.5               | 17.9       | 18.3       | 0.0 | 19.0             |
|             |        | 3                | 0            | 18.3               | 17.8       | 18.2       | 0.0 | 19.0             | 18.3               | 17.8       | 18.2       | 0.0 | 19.0             |
|             |        | 3                | 1            | 18.4               | 17.7       | 18.2       | 0.0 | 19.0             | 18.4               | 17.8       | 18.2       | 0.0 | 19.0             |
|             |        | 3                | 3            | 18.4               | 17.8       | 18.2       | 0.0 | 19.0             | 18.4               | 17.8       | 18.2       | 0.0 | 19.0             |
|             | 64QAM  | 6                | 0            | 18.4               | 17.8       | 18.2       | 0.0 | 19.0             | 18.4               | 17.8       | 18.2       | 0.0 | 19.0             |
|             |        | 1                | 0            | 18.6               | 18.1       | 18.5       | 0.0 | 19.0             | 18.6               | 18.1       | 18.7       | 0.0 | 19.0             |
|             |        | 1                | 3            | 18.5               | 18.0       | 18.4       | 0.0 | 19.0             | 18.4               | 18.0       | 18.6       | 0.0 | 19.0             |
|             |        | 1                | 5            | 18.7               | 18.1       | 18.5       | 0.0 | 19.0             | 18.6               | 18.1       | 18.7       | 0.0 | 19.0             |
|             |        | 3                | 0            | 18.4               | 17.9       | 18.2       | 0.0 | 19.0             | 18.4               | 17.8       | 18.3       | 0.0 | 19.0             |
|             |        | 3                | 1            | 18.4               | 17.8       | 18.4       | 0.0 | 19.0             | 18.3               | 17.8       | 18.4       | 0.0 | 19.0             |
|             | 256QAM | 3                | 3            | 18.5               | 17.8       | 18.3       | 0.0 | 19.0             | 18.4               | 17.8       | 18.2       | 0.0 | 19.0             |
|             |        | 6                | 0            | 18.4               | 17.9       | 18.2       | 0.0 | 19.0             | 18.5               | 18.0       | 18.2       | 0.0 | 19.0             |
|             |        | 1                | 0            | 18.6               | 18.0       | 18.4       | 0.0 | 19.0             | 18.5               | 18.0       | 18.4       | 0.0 | 19.0             |
|             |        | 1                | 3            | 18.5               | 18.0       | 18.4       | 0.0 | 19.0             | 18.4               | 18.0       | 18.4       | 0.0 | 19.0             |
|             |        | 1                | 5            | 18.7               | 18.0       | 18.4       | 0.0 | 19.0             | 18.4               | 18.0       | 18.4       | 0.0 | 19.0             |
|             |        | 3                | 0            | 18.2               | 18.0       | 18.4       | 0.0 | 19.0             | 18.4               | 18.0       | 18.4       | 0.0 | 19.0             |
| 1.4 MHz     | 64QAM  | 3                | 1            | 18.3               | 18.0       | 18.4       | 0.0 | 19.0             | 18.5               | 18.0       | 18.4       | 0.0 | 19.0             |
|             |        | 3                | 3            | 18.3               | 18.0       | 18.4       | 0.0 | 19.0             | 18.5               | 18.0       | 18.4       | 0.0 | 19.0             |
|             |        | 6                | 0            | 18.5               | 18.0       | 18.4       | 0.0 | 19.0             | 18.4               | 18.0       | 18.4       | 0.0 | 19.0             |
|             | 256QAM | 1                | 0            | 17.5               | 16.9       | 17.3       | 1.0 | 18.0             | 17.6               | 16.9       | 17.2       | 1.0 | 18.0             |
|             |        | 1                | 3            | 17.5               | 16.9       | 17.2       | 1.0 | 18.0             | 17.5               | 16.8       | 17.2       | 1.0 | 18.0             |
|             |        | 1                | 5            | 17.5               | 16.9       | 17.3       | 1.0 | 18.0             | 17.6               | 16.9       | 17.2       | 1.0 | 18.0             |
|             | 256QAM | 3                | 0            | 17.4               | 16.6       | 17.0       | 1.0 | 18.0             | 17.2               | 16.8       | 17.1       | 1.0 | 18.0             |
|             |        | 3                | 1            | 17.4               | 16.6       | 17.1       | 1.0 | 18.0             | 17.3               | 16.8       | 17.0       | 1.0 | 18.0             |
|             |        | 3                | 3            | 17.4               | 16.7       | 17.0       | 1.0 | 18.0             | 17.2               | 16.8       | 17.1       | 1.0 | 18.0             |
|             |        | 6                | 0            | 17.4               | 16.8       | 17.3       | 1.0 | 18.0             | 17.4               | 16.8       | 17.2       | 1.0 | 18.0             |

**LTE Band 66 Measured Results**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Reduced Average Power (dBm)<br>Hotspot back-off |          |          |     |                  | Reduced Average Power (dBm)<br>Proximity sensor back-off |          |          |     |                  |
|-------------|--------|------------------|--------------|-------------------------------------------------|----------|----------|-----|------------------|----------------------------------------------------------|----------|----------|-----|------------------|
|             |        |                  |              | Measured Pwr (dBm)                              |          |          | MPR | Tune-up<br>Limit | Measured Pwr (dBm)                                       |          |          | MPR | Tune-up<br>Limit |
|             |        |                  |              | 132072                                          | 132322   | 132572   |     |                  | 132072                                                   | 132322   | 132572   |     |                  |
|             |        |                  |              | 1720 MHz                                        | 1745 MHz | 1770 MHz |     |                  | 1720 MHz                                                 | 1745 MHz | 1770 MHz |     |                  |
| 20 MHz      | QPSK   | 1                | 0            | 18.7                                            | 18.5     | 18.3     | 0.0 | 19.5             | 18.7                                                     | 18.4     | 18.3     | 0.0 | 19.5             |
|             |        | 1                | 49           | 18.5                                            | 18.3     | 18.2     | 0.0 | 19.5             | 18.5                                                     | 18.3     | 18.2     | 0.0 | 19.5             |
|             |        | 1                | 99           | 18.6                                            | 18.3     | 18.3     | 0.0 | 19.5             | 18.6                                                     | 18.3     | 18.2     | 0.0 | 19.5             |
|             |        | 50               | 0            | 18.6                                            | 18.4     | 18.2     | 0.0 | 19.5             | 18.7                                                     | 18.4     | 18.2     | 0.0 | 19.5             |
|             |        | 50               | 24           | 18.6                                            | 18.3     | 18.2     | 0.0 | 19.5             | 18.6                                                     | 18.3     | 18.2     | 0.0 | 19.5             |
|             |        | 50               | 50           | 18.6                                            | 18.3     | 18.2     | 0.0 | 19.5             | 18.6                                                     | 18.3     | 18.2     | 0.0 | 19.5             |
|             | 16QAM  | 100              | 0            | 18.6                                            | 18.4     | 18.2     | 0.0 | 19.5             | 18.6                                                     | 18.3     | 18.2     | 0.0 | 19.5             |
|             |        | 1                | 0            | 19.0                                            | 19.0     | 18.7     | 0.0 | 19.5             | 19.1                                                     | 19.0     | 18.5     | 0.0 | 19.5             |
|             |        | 1                | 49           | 18.8                                            | 18.8     | 18.5     | 0.0 | 19.5             | 18.9                                                     | 18.8     | 18.3     | 0.0 | 19.5             |
|             |        | 1                | 99           | 18.9                                            | 18.9     | 18.7     | 0.0 | 19.5             | 19.0                                                     | 18.8     | 18.5     | 0.0 | 19.5             |
|             |        | 50               | 0            | 18.7                                            | 18.4     | 18.2     | 0.0 | 19.5             | 18.6                                                     | 18.4     | 18.3     | 0.0 | 19.5             |
|             |        | 50               | 24           | 18.6                                            | 18.4     | 18.2     | 0.0 | 19.5             | 18.6                                                     | 18.4     | 18.2     | 0.0 | 19.5             |
|             | 64QAM  | 50               | 50           | 18.6                                            | 18.4     | 18.2     | 0.0 | 19.5             | 18.6                                                     | 18.4     | 18.2     | 0.0 | 19.5             |
|             |        | 100              | 0            | 18.6                                            | 18.4     | 18.2     | 0.0 | 19.5             | 18.6                                                     | 18.4     | 18.2     | 0.0 | 19.5             |
|             |        | 1                | 0            | 19.0                                            | 18.5     | 18.4     | 0.0 | 19.5             | 19.1                                                     | 18.6     | 18.5     | 0.0 | 19.5             |
|             |        | 1                | 49           | 18.8                                            | 18.5     | 18.4     | 0.0 | 19.5             | 19.1                                                     | 18.6     | 18.5     | 0.0 | 19.5             |
|             |        | 1                | 99           | 18.9                                            | 18.5     | 18.4     | 0.0 | 19.5             | 19.1                                                     | 18.7     | 18.5     | 0.0 | 19.5             |
|             |        | 50               | 0            | 18.7                                            | 18.6     | 18.4     | 0.0 | 19.5             | 18.7                                                     | 18.7     | 18.5     | 0.0 | 19.5             |
| 15 MHz      | QPSK   | 50               | 24           | 18.7                                            | 18.6     | 18.4     | 0.0 | 19.5             | 18.7                                                     | 18.7     | 18.5     | 0.0 | 19.5             |
|             |        | 50               | 50           | 18.7                                            | 18.6     | 18.4     | 0.0 | 19.5             | 18.7                                                     | 18.7     | 18.5     | 0.0 | 19.5             |
|             |        | 100              | 0            | 18.7                                            | 18.6     | 18.4     | 0.0 | 19.5             | 18.6                                                     | 18.6     | 18.5     | 0.0 | 19.5             |
|             | 16QAM  | 1                | 0            | 18.0                                            | 17.7     | 17.5     | 1.0 | 18.5             | 17.9                                                     | 17.6     | 17.5     | 1.0 | 18.5             |
|             |        | 1                | 49           | 17.7                                            | 17.5     | 17.3     | 1.0 | 18.5             | 17.7                                                     | 17.5     | 17.4     | 1.0 | 18.5             |
|             |        | 1                | 99           | 17.8                                            | 17.6     | 17.3     | 1.0 | 18.5             | 17.8                                                     | 17.6     | 17.4     | 1.0 | 18.5             |
|             | 64QAM  | 50               | 0            | 17.6                                            | 17.3     | 17.1     | 1.0 | 18.5             | 17.6                                                     | 17.3     | 17.1     | 1.0 | 18.5             |
|             |        | 50               | 24           | 17.6                                            | 17.3     | 17.1     | 1.0 | 18.5             | 17.5                                                     | 17.3     | 17.1     | 1.0 | 18.5             |
|             |        | 50               | 50           | 17.6                                            | 17.2     | 17.1     | 1.0 | 18.5             | 17.5                                                     | 17.3     | 17.1     | 1.0 | 18.5             |
|             | 256QAM | 100              | 0            | 17.6                                            | 17.3     | 17.1     | 1.0 | 18.5             | 17.6                                                     | 17.3     | 17.1     | 1.0 | 18.5             |
|             |        | 1                | 0            | 18.7                                            | 18.4     | 18.5     | 0.0 | 19.5             | 18.7                                                     | 18.4     | 18.4     | 0.0 | 19.5             |
|             | 16QAM  | 1                | 37           | 18.5                                            | 18.2     | 18.6     | 0.0 | 19.5             | 18.5                                                     | 18.3     | 18.6     | 0.0 | 19.5             |
|             |        | 1                | 74           | 18.6                                            | 18.4     | 18.4     | 0.0 | 19.5             | 18.5                                                     | 18.3     | 18.3     | 0.0 | 19.5             |
|             |        | 36               | 0            | 18.6                                            | 18.3     | 18.3     | 0.0 | 19.5             | 18.5                                                     | 18.3     | 18.3     | 0.0 | 19.5             |
|             |        | 36               | 20           | 18.5                                            | 18.3     | 18.2     | 0.0 | 19.5             | 18.5                                                     | 18.3     | 18.2     | 0.0 | 19.5             |
|             | 64QAM  | 36               | 39           | 18.5                                            | 18.3     | 18.2     | 0.0 | 19.5             | 18.5                                                     | 18.3     | 18.2     | 0.0 | 19.5             |
|             |        | 75               | 0            | 18.5                                            | 18.3     | 18.2     | 0.0 | 19.5             | 18.5                                                     | 18.3     | 18.3     | 0.0 | 19.5             |
|             | 256QAM | 1                | 0            | 18.9                                            | 18.7     | 18.8     | 0.0 | 19.5             | 19.0                                                     | 18.7     | 18.8     | 0.0 | 19.5             |
|             |        | 1                | 37           | 18.8                                            | 18.7     | 18.8     | 0.0 | 19.5             | 19.0                                                     | 18.7     | 18.7     | 0.0 | 19.5             |
|             |        | 1                | 74           | 18.8                                            | 18.7     | 18.7     | 0.0 | 19.5             | 18.9                                                     | 18.7     | 18.6     | 0.0 | 19.5             |
|             |        | 36               | 0            | 18.6                                            | 18.4     | 18.3     | 0.0 | 19.5             | 18.5                                                     | 18.4     | 18.3     | 0.0 | 19.5             |
|             |        | 36               | 20           | 18.5                                            | 18.4     | 18.3     | 0.0 | 19.5             | 18.5                                                     | 18.4     | 18.3     | 0.0 | 19.5             |
|             |        | 36               | 39           | 18.5                                            | 18.3     | 18.3     | 0.0 | 19.5             | 18.5                                                     | 18.3     | 18.3     | 0.0 | 19.5             |
|             | 16QAM  | 75               | 0            | 18.6                                            | 18.3     | 18.3     | 0.0 | 19.5             | 18.5                                                     | 18.3     | 18.3     | 0.0 | 19.5             |
|             | 64QAM  | 1                | 0            | 19.0                                            | 18.9     | 18.5     | 0.0 | 19.5             | 18.9                                                     | 18.6     | 18.5     | 0.0 | 19.5             |
|             |        | 1                | 37           | 18.9                                            | 18.9     | 18.5     | 0.0 | 19.5             | 18.8                                                     | 18.6     | 18.5     | 0.0 | 19.5             |
|             |        | 1                | 74           | 18.9                                            | 18.9     | 18.5     | 0.0 | 19.5             | 18.9                                                     | 18.6     | 18.5     | 0.0 | 19.5             |
|             |        | 36               | 0            | 18.6                                            | 18.9     | 18.5     | 0.0 | 19.5             | 18.6                                                     | 18.6     | 18.4     | 0.0 | 19.5             |
|             |        | 36               | 20           | 18.6                                            | 18.9     | 18.5     | 0.0 | 19.5             | 18.5                                                     | 18.6     | 18.5     | 0.0 | 19.5             |
|             | 256QAM | 36               | 39           | 18.5                                            | 18.8     | 18.5     | 0.0 | 19.5             | 18.5                                                     | 18.6     | 18.5     | 0.0 | 19.5             |
|             |        | 75               | 0            | 18.6                                            | 18.8     | 18.5     | 0.0 | 19.5             | 18.6                                                     | 18.6     | 18.5     | 0.0 | 19.5             |
|             | 16QAM  | 1                | 0            | 17.8                                            | 17.5     | 17.5     | 1.0 | 18.5             | 17.7                                                     | 17.6     | 17.6     | 1.0 | 18.5             |
|             |        | 1                | 37           | 17.6                                            | 17.7     | 17.6     | 1.0 | 18.5             | 17.6                                                     | 17.7     | 17.6     | 1.0 | 18.5             |
|             |        | 1                | 74           | 17.7                                            | 17.4     | 17.5     | 1.0 | 18.5             | 17.6                                                     | 17.6     | 17.5     | 1.0 | 18.5             |
|             |        | 36               | 0            | 17.6                                            | 17.3     | 17.3     | 1.0 | 18.5             | 17.6                                                     | 17.3     | 17.2     | 1.0 | 18.5             |
|             |        | 36               | 20           | 17.6                                            | 17.3     | 17.2     | 1.0 | 18.5             | 17.5                                                     | 17.3     | 17.2     | 1.0 | 18.5             |
|             |        | 36               | 39           | 17.5                                            | 17.3     | 17.2     | 1.0 | 18.5             | 17.5                                                     | 17.3     | 17.2     | 1.0 | 18.5             |
|             | 256QAM | 75               | 0            | 17.5                                            | 17.3     | 17.2     | 1.0 | 18.5             | 17.5                                                     | 17.3     | 17.2     | 1.0 | 18.5             |

**LTE Band 66 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |          |            | MPR | Tune-up<br>Limit | Measured Pwr (dBm) |          |            | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|----------|------------|-----|------------------|--------------------|----------|------------|-----|------------------|
|             |        |                  |              | 132022             | 132322   | 132622     |     |                  | 132022             | 132322   | 132622     |     |                  |
|             |        |                  |              | 1715 MHz           | 1745 MHz | 1775 MHz   |     |                  | 1715 MHz           | 1745 MHz | 1775 MHz   |     |                  |
| 10 MHz      | QPSK   | 1                | 0            | 18.6               | 18.4     | 18.4       | 0.0 | 19.5             | 18.6               | 18.4     | 18.3       | 0.0 | 19.5             |
|             |        | 1                | 25           | 18.6               | 18.2     | 18.3       | 0.0 | 19.5             | 18.5               | 18.2     | 18.2       | 0.0 | 19.5             |
|             |        | 1                | 49           | 18.7               | 18.3     | 18.4       | 0.0 | 19.5             | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 25               | 0            | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 25               | 12           | 18.5               | 18.3     | 18.3       | 0.0 | 19.5             | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 25               | 25           | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             |
|             | 16QAM  | 50               | 0            | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 1                | 0            | 18.8               | 18.8     | 18.8       | 0.0 | 19.5             | 18.9               | 18.9     | 18.7       | 0.0 | 19.5             |
|             |        | 1                | 25           | 18.6               | 18.6     | 18.8       | 0.0 | 19.5             | 18.7               | 18.6     | 18.6       | 0.0 | 19.5             |
|             |        | 1                | 49           | 18.8               | 18.7     | 18.9       | 0.0 | 19.5             | 18.8               | 18.7     | 18.8       | 0.0 | 19.5             |
|             |        | 25               | 0            | 18.6               | 18.4     | 18.4       | 0.0 | 19.5             | 18.6               | 18.4     | 18.4       | 0.0 | 19.5             |
|             |        | 25               | 12           | 18.6               | 18.4     | 18.4       | 0.0 | 19.5             | 18.6               | 18.4     | 18.4       | 0.0 | 19.5             |
|             | 64QAM  | 25               | 25           | 18.6               | 18.4     | 18.4       | 0.0 | 19.5             | 18.6               | 18.4     | 18.4       | 0.0 | 19.5             |
|             |        | 50               | 0            | 18.6               | 18.4     | 18.4       | 0.0 | 19.5             | 18.6               | 18.4     | 18.4       | 0.0 | 19.5             |
|             |        | 1                | 0            | 18.9               | 18.6     | 18.4       | 0.0 | 19.5             | 18.9               | 18.5     | 18.3       | 0.0 | 19.5             |
|             |        | 1                | 25           | 18.6               | 18.6     | 18.4       | 0.0 | 19.5             | 18.6               | 18.5     | 18.3       | 0.0 | 19.5             |
|             |        | 1                | 49           | 18.7               | 18.6     | 18.4       | 0.0 | 19.5             | 18.7               | 18.5     | 18.3       | 0.0 | 19.5             |
|             |        | 25               | 0            | 18.7               | 18.6     | 18.4       | 0.0 | 19.5             | 18.7               | 18.5     | 18.3       | 0.0 | 19.5             |
|             | 256QAM | 25               | 12           | 18.7               | 18.6     | 18.4       | 0.0 | 19.5             | 18.7               | 18.5     | 18.3       | 0.0 | 19.5             |
|             |        | 25               | 25           | 18.7               | 18.6     | 18.4       | 0.0 | 19.5             | 18.7               | 18.5     | 18.3       | 0.0 | 19.5             |
|             |        | 50               | 0            | 18.6               | 18.6     | 18.4       | 0.0 | 19.5             | 18.6               | 18.5     | 18.3       | 0.0 | 19.5             |
|             |        | 1                | 0            | 17.7               | 17.5     | 17.5       | 1.0 | 18.5             | 17.7               | 17.5     | 17.5       | 1.0 | 18.5             |
|             |        | 1                | 25           | 17.6               | 17.4     | 17.4       | 1.0 | 18.5             | 17.6               | 17.3     | 17.4       | 1.0 | 18.5             |
|             |        | 1                | 49           | 17.7               | 17.5     | 17.4       | 1.0 | 18.5             | 17.6               | 17.4     | 17.4       | 1.0 | 18.5             |
|             |        | 25               | 0            | 17.6               | 17.3     | 17.3       | 1.0 | 18.5             | 17.7               | 17.3     | 17.3       | 1.0 | 18.5             |
|             |        | 25               | 12           | 17.6               | 17.3     | 17.3       | 1.0 | 18.5             | 17.6               | 17.3     | 17.3       | 1.0 | 18.5             |
|             |        | 25               | 25           | 17.6               | 17.3     | 17.3       | 1.0 | 18.5             | 17.6               | 17.3     | 17.3       | 1.0 | 18.5             |
|             |        | 50               | 0            | 17.6               | 17.2     | 17.2       | 1.0 | 18.5             | 17.6               | 17.3     | 17.3       | 1.0 | 18.5             |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |          |            | MPR | Tune-up<br>Limit | Measured Pwr (dBm) |          |            | MPR | Tune-up<br>Limit |
|             |        |                  |              | 131997             | 132322   | 132647     |     |                  | 131997             | 132322   | 132647     |     |                  |
|             |        |                  |              | 1712.5 MHz         | 1745 MHz | 1777.5 MHz |     |                  | 1712.5 MHz         | 1745 MHz | 1777.5 MHz |     |                  |
| 5 MHz       | QPSK   | 1                | 0            | 18.6               | 18.4     | 18.3       | 0.0 | 19.5             | 18.7               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 1                | 12           | 18.6               | 18.5     | 18.4       | 0.0 | 19.5             | 18.7               | 18.4     | 18.3       | 0.0 | 19.5             |
|             |        | 1                | 24           | 18.7               | 18.4     | 18.4       | 0.0 | 19.5             | 18.8               | 18.4     | 18.4       | 0.0 | 19.5             |
|             |        | 12               | 0            | 18.7               | 18.3     | 18.3       | 0.0 | 19.5             | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 12               | 7            | 18.7               | 18.3     | 18.3       | 0.0 | 19.5             | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 12               | 13           | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             | 18.7               | 18.3     | 18.3       | 0.0 | 19.5             |
|             | 16QAM  | 25               | 0            | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 1                | 0            | 19.2               | 18.5     | 18.7       | 0.0 | 19.5             | 18.7               | 18.6     | 18.9       | 0.0 | 19.5             |
|             |        | 1                | 12           | 18.6               | 18.7     | 18.7       | 0.0 | 19.5             | 18.8               | 18.7     | 18.9       | 0.0 | 19.5             |
|             |        | 1                | 24           | 19.1               | 18.7     | 18.8       | 0.0 | 19.5             | 18.8               | 18.7     | 18.7       | 0.0 | 19.5             |
|             |        | 12               | 0            | 18.6               | 18.4     | 18.5       | 0.0 | 19.5             | 18.7               | 18.4     | 18.4       | 0.0 | 19.5             |
|             |        | 12               | 7            | 18.7               | 18.4     | 18.5       | 0.0 | 19.5             | 18.7               | 18.4     | 18.4       | 0.0 | 19.5             |
|             | 64QAM  | 12               | 13           | 18.6               | 18.4     | 18.5       | 0.0 | 19.5             | 18.8               | 18.5     | 18.4       | 0.0 | 19.5             |
|             |        | 25               | 0            | 18.6               | 18.3     | 18.4       | 0.0 | 19.5             | 18.7               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 1                | 0            | 18.8               | 18.6     | 18.7       | 0.0 | 19.5             | 18.8               | 18.6     | 18.5       | 0.0 | 19.5             |
|             |        | 1                | 12           | 18.8               | 18.6     | 18.7       | 0.0 | 19.5             | 19.0               | 18.5     | 18.5       | 0.0 | 19.5             |
|             |        | 1                | 24           | 18.9               | 18.6     | 18.7       | 0.0 | 19.5             | 18.9               | 18.6     | 18.5       | 0.0 | 19.5             |
|             |        | 12               | 0            | 18.7               | 18.6     | 18.7       | 0.0 | 19.5             | 18.7               | 18.6     | 18.5       | 0.0 | 19.5             |
|             | 256QAM | 12               | 7            | 18.6               | 18.6     | 18.6       | 0.0 | 19.5             | 18.7               | 18.6     | 18.5       | 0.0 | 19.5             |
|             |        | 12               | 13           | 18.6               | 18.6     | 18.7       | 0.0 | 19.5             | 18.7               | 18.6     | 18.5       | 0.0 | 19.5             |
|             |        | 25               | 0            | 18.6               | 18.6     | 18.6       | 0.0 | 19.5             | 18.7               | 18.6     | 18.5       | 0.0 | 19.5             |
|             |        | 1                | 0            | 17.8               | 17.6     | 17.5       | 1.0 | 18.5             | 18.1               | 17.5     | 17.4       | 1.0 | 18.5             |
|             |        | 1                | 12           | 17.9               | 17.6     | 17.4       | 1.0 | 18.5             | 18.1               | 17.5     | 17.6       | 1.0 | 18.5             |
|             |        | 1                | 24           | 17.7               | 17.6     | 17.4       | 1.0 | 18.5             | 18.0               | 17.4     | 17.5       | 1.0 | 18.5             |
|             |        | 12               | 0            | 17.6               | 17.3     | 17.3       | 1.0 | 18.5             | 17.7               | 17.3     | 17.3       | 1.0 | 18.5             |
|             |        | 12               | 7            | 17.6               | 17.3     | 17.3       | 1.0 | 18.5             | 17.7               | 17.3     | 17.3       | 1.0 | 18.5             |
|             |        | 12               | 13           | 17.7               | 17.3     | 17.3       | 1.0 | 18.5             | 17.7               | 17.3     | 17.3       | 1.0 | 18.5             |
|             |        | 25               | 0            | 17.6               | 17.2     | 17.3       | 1.0 | 18.5             | 17.6               | 17.3     | 17.3       | 1.0 | 18.5             |

**LTE Band 66 Measured Results (Continued)**

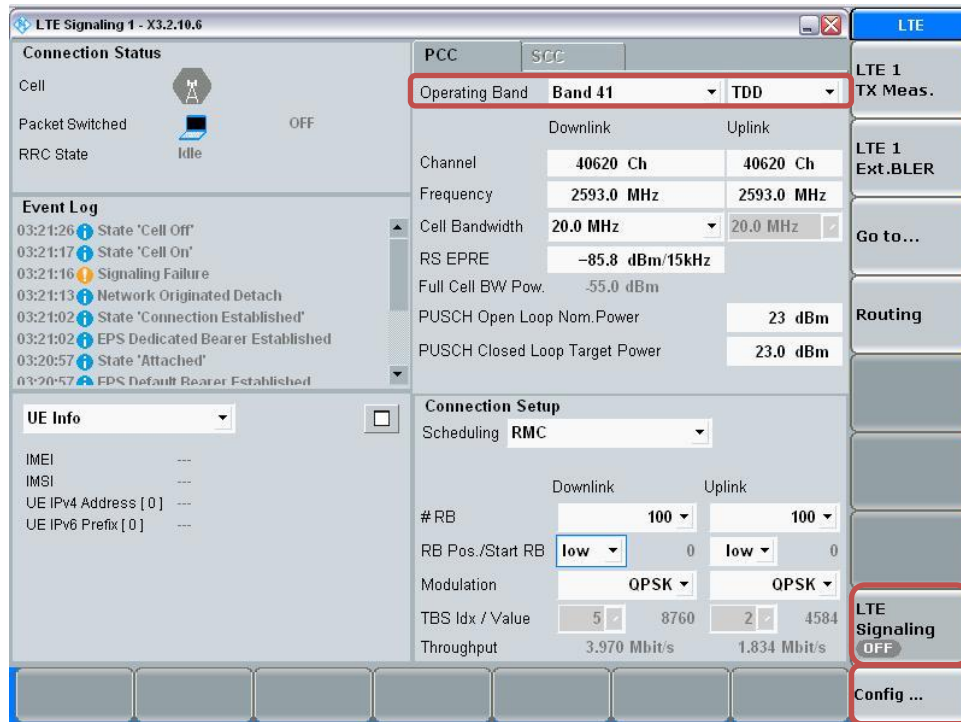
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |          |            | MPR | Tune-up<br>Limit | Measured Pwr (dBm) |          |            | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|----------|------------|-----|------------------|--------------------|----------|------------|-----|------------------|
|             |        |                  |              | 131987             | 132322   | 132657     |     |                  | 131987             | 132322   | 132657     |     |                  |
|             |        |                  |              | 1711.5 MHz         | 1745 MHz | 1778.5 MHz |     |                  | 1711.5 MHz         | 1745 MHz | 1778.5 MHz |     |                  |
| 3 MHz       | QPSK   | 1                | 0            | 18.7               | 18.5     | 18.4       | 0.0 | 19.5             | 18.7               | 18.4     | 18.4       | 0.0 | 19.5             |
|             |        | 1                | 8            | 18.8               | 18.4     | 18.6       | 0.0 | 19.5             | 18.6               | 18.3     | 18.6       | 0.0 | 19.5             |
|             |        | 1                | 14           | 18.8               | 18.4     | 18.5       | 0.0 | 19.5             | 18.8               | 18.3     | 18.5       | 0.0 | 19.5             |
|             |        | 8                | 0            | 18.6               | 18.3     | 18.2       | 0.0 | 19.5             | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 8                | 4            | 18.6               | 18.2     | 18.2       | 0.0 | 19.5             | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 8                | 7            | 18.6               | 18.3     | 18.2       | 0.0 | 19.5             | 18.6               | 18.2     | 18.3       | 0.0 | 19.5             |
|             | 16QAM  | 15               | 0            | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 1                | 0            | 18.9               | 18.7     | 18.7       | 0.0 | 19.5             | 18.8               | 18.8     | 18.8       | 0.0 | 19.5             |
|             |        | 1                | 8            | 19.0               | 18.6     | 18.8       | 0.0 | 19.5             | 19.1               | 18.8     | 19.0       | 0.0 | 19.5             |
|             |        | 1                | 14           | 19.0               | 18.7     | 18.8       | 0.0 | 19.5             | 18.9               | 18.7     | 19.0       | 0.0 | 19.5             |
|             |        | 8                | 0            | 18.6               | 18.4     | 18.4       | 0.0 | 19.5             | 18.7               | 18.4     | 18.4       | 0.0 | 19.5             |
|             |        | 8                | 4            | 18.6               | 18.3     | 18.4       | 0.0 | 19.5             | 18.7               | 18.4     | 18.4       | 0.0 | 19.5             |
|             | 64QAM  | 8                | 7            | 18.6               | 18.4     | 18.4       | 0.0 | 19.5             | 18.7               | 18.4     | 18.4       | 0.0 | 19.5             |
|             |        | 15               | 0            | 18.7               | 18.4     | 18.4       | 0.0 | 19.5             | 18.8               | 18.3     | 18.4       | 0.0 | 19.5             |
|             |        | 1                | 0            | 19.1               | 18.7     | 18.4       | 0.0 | 19.5             | 19.1               | 18.5     | 18.6       | 0.0 | 19.5             |
|             |        | 1                | 8            | 19.0               | 18.7     | 18.4       | 0.0 | 19.5             | 19.1               | 18.5     | 18.6       | 0.0 | 19.5             |
|             |        | 1                | 14           | 18.8               | 18.8     | 18.4       | 0.0 | 19.5             | 18.9               | 18.4     | 18.6       | 0.0 | 19.5             |
|             |        | 8                | 0            | 18.6               | 18.6     | 18.4       | 0.0 | 19.5             | 18.6               | 18.7     | 18.6       | 0.0 | 19.5             |
|             | 256QAM | 8                | 4            | 18.6               | 18.5     | 18.4       | 0.0 | 19.5             | 18.6               | 18.4     | 18.3       | 0.0 | 19.5             |
|             |        | 8                | 7            | 18.6               | 18.4     | 18.4       | 0.0 | 19.5             | 18.6               | 18.7     | 18.3       | 0.0 | 19.5             |
|             |        | 15               | 0            | 18.7               | 18.6     | 18.4       | 0.0 | 19.5             | 18.7               | 18.4     | 18.5       | 0.0 | 19.5             |
|             |        | 1                | 0            | 17.9               | 17.2     | 17.6       | 1.0 | 18.5             | 17.9               | 17.6     | 17.6       | 1.0 | 18.5             |
|             |        | 1                | 8            | 17.9               | 17.3     | 17.6       | 1.0 | 18.5             | 17.9               | 17.6     | 17.5       | 1.0 | 18.5             |
|             |        | 1                | 14           | 17.8               | 17.4     | 17.6       | 1.0 | 18.5             | 17.9               | 17.6     | 17.5       | 1.0 | 18.5             |
|             |        | 8                | 0            | 17.7               | 17.3     | 17.3       | 1.0 | 18.5             | 17.6               | 17.3     | 17.3       | 1.0 | 18.5             |
|             |        | 8                | 4            | 17.5               | 17.3     | 17.3       | 1.0 | 18.5             | 17.6               | 17.3     | 17.3       | 1.0 | 18.5             |
|             |        | 8                | 7            | 17.7               | 17.4     | 17.4       | 1.0 | 18.5             | 17.6               | 17.3     | 17.4       | 1.0 | 18.5             |
|             |        | 15               | 0            | 17.7               | 17.2     | 17.4       | 1.0 | 18.5             | 17.7               | 17.3     | 17.4       | 1.0 | 18.5             |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |          |            | MPR | Tune-up<br>Limit | Measured Pwr (dBm) |          |            | MPR | Tune-up<br>Limit |
|             |        |                  |              | 131979             | 132322   | 132665     |     |                  | 131979             | 132322   | 132665     |     |                  |
|             |        |                  |              | 1710.7 MHz         | 1745 MHz | 1779.3 MHz |     |                  | 1710.7 MHz         | 1745 MHz | 1779.3 MHz |     |                  |
| 1.4 MHz     | QPSK   | 1                | 0            | 18.5               | 18.2     | 18.2       | 0.0 | 19.5             | 18.5               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 1                | 3            | 18.4               | 18.1     | 18.1       | 0.0 | 19.5             | 18.5               | 18.2     | 18.2       | 0.0 | 19.5             |
|             |        | 1                | 5            | 18.6               | 18.2     | 18.3       | 0.0 | 19.5             | 18.6               | 18.3     | 18.3       | 0.0 | 19.5             |
|             |        | 3                | 0            | 18.6               | 18.2     | 18.2       | 0.0 | 19.5             | 18.6               | 18.2     | 18.2       | 0.0 | 19.5             |
|             |        | 3                | 1            | 18.6               | 18.1     | 18.1       | 0.0 | 19.5             | 18.6               | 18.2     | 18.2       | 0.0 | 19.5             |
|             |        | 3                | 3            | 18.6               | 18.2     | 18.2       | 0.0 | 19.5             | 18.6               | 18.2     | 18.2       | 0.0 | 19.5             |
|             | 16QAM  | 6                | 0            | 18.5               | 18.2     | 18.2       | 0.0 | 19.5             | 18.5               | 18.2     | 18.2       | 0.0 | 19.5             |
|             |        | 1                | 0            | 18.5               | 18.5     | 18.5       | 0.0 | 19.5             | 18.7               | 18.4     | 18.6       | 0.0 | 19.5             |
|             |        | 1                | 3            | 18.6               | 18.3     | 18.5       | 0.0 | 19.5             | 18.4               | 18.2     | 18.4       | 0.0 | 19.5             |
|             |        | 1                | 5            | 18.8               | 18.5     | 18.5       | 0.0 | 19.5             | 19.0               | 18.5     | 18.6       | 0.0 | 19.5             |
|             |        | 3                | 0            | 18.7               | 18.3     | 18.4       | 0.0 | 19.5             | 18.7               | 18.3     | 18.4       | 0.0 | 19.5             |
|             |        | 3                | 1            | 18.5               | 18.3     | 18.5       | 0.0 | 19.5             | 18.6               | 18.1     | 18.5       | 0.0 | 19.5             |
|             | 64QAM  | 3                | 3            | 18.7               | 18.3     | 18.3       | 0.0 | 19.5             | 18.7               | 18.3     | 18.4       | 0.0 | 19.5             |
|             |        | 6                | 0            | 18.7               | 18.4     | 18.2       | 0.0 | 19.5             | 18.7               | 18.3     | 18.2       | 0.0 | 19.5             |
|             |        | 1                | 0            | 18.7               | 18.7     | 18.2       | 0.0 | 19.5             | 18.9               | 18.5     | 18.2       | 0.0 | 19.5             |
|             |        | 1                | 3            | 18.8               | 18.7     | 18.5       | 0.0 | 19.5             | 18.9               | 18.4     | 18.2       | 0.0 | 19.5             |
|             |        | 1                | 5            | 18.8               | 18.7     | 18.1       | 0.0 | 19.5             | 18.9               | 18.4     | 18.2       | 0.0 | 19.5             |
|             |        | 3                | 0            | 18.7               | 18.7     | 18.1       | 0.0 | 19.5             | 18.6               | 18.4     | 18.2       | 0.0 | 19.5             |
|             | 256QAM | 3                | 1            | 18.7               | 18.5     | 18.3       | 0.0 | 19.5             | 18.7               | 18.4     | 18.2       | 0.0 | 19.5             |
|             |        | 3                | 3            | 18.7               | 18.7     | 18.1       | 0.0 | 19.5             | 18.6               | 18.4     | 18.3       | 0.0 | 19.5             |
|             |        | 6                | 0            | 18.6               | 18.4     | 18.5       | 0.0 | 19.5             | 18.6               | 18.4     | 18.4       | 0.0 | 19.5             |
|             |        | 1                | 0            | 17.7               | 17.2     | 17.3       | 1.0 | 18.5             | 17.7               | 17.3     | 17.5       | 1.0 | 18.5             |
|             |        | 1                | 3            | 17.7               | 17.1     | 17.2       | 1.0 | 18.5             | 17.7               | 17.3     | 17.3       | 1.0 | 18.5             |
|             |        | 1                | 5            | 17.9               | 17.2     | 17.3       | 1.0 | 18.5             | 17.7               | 17.3     | 17.4       | 1.0 | 18.5             |
|             |        | 3                | 0            | 17.6               | 17.0     | 17.1       | 1.0 | 18.5             | 17.6               | 17.1     | 17.1       | 1.0 | 18.5             |
|             |        | 3                | 1            | 17.6               | 17.1     | 17.2       | 1.0 | 18.5             | 17.5               | 17.1     | 17.2       | 1.0 | 18.5             |
|             |        | 3                | 3            | 17.6               | 17.0     | 17.1       | 1.0 | 18.5             | 17.6               | 17.1     | 17.1       | 1.0 | 18.5             |
|             |        | 6                | 0            | 17.6               | 17.3     | 17.3       | 1.0 | 18.5             | 17.6               | 17.3     | 17.3       | 1.0 | 18.5             |

## LTE Band TDD Measured Results

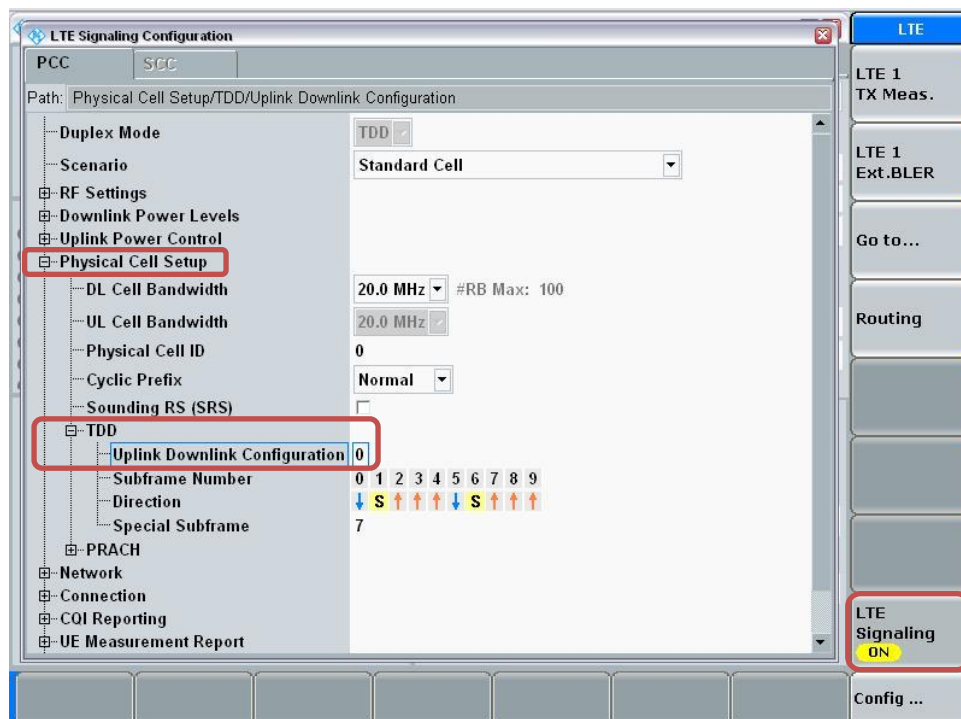
### Procedure used to establish SAR test signal for LTE TDD Band

Set to CMW-500 with following parameters:

- Turn the LTE Signaling off using “ON | OFF” key
- Operating Band: Select Band 41 and TDD
- Go to “Config...”

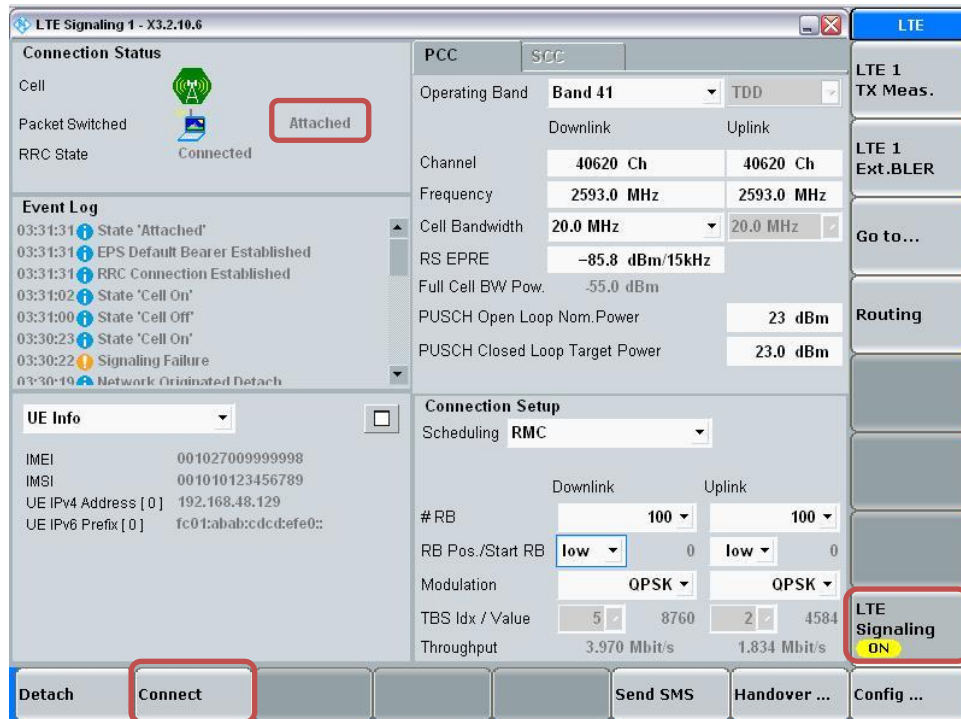


- Go to “Physical Cell Setup”
- Select “TDD” and Set “Uplink Downlink Configuration” to “0”
- Turn the cell on using “ON | OFF” key

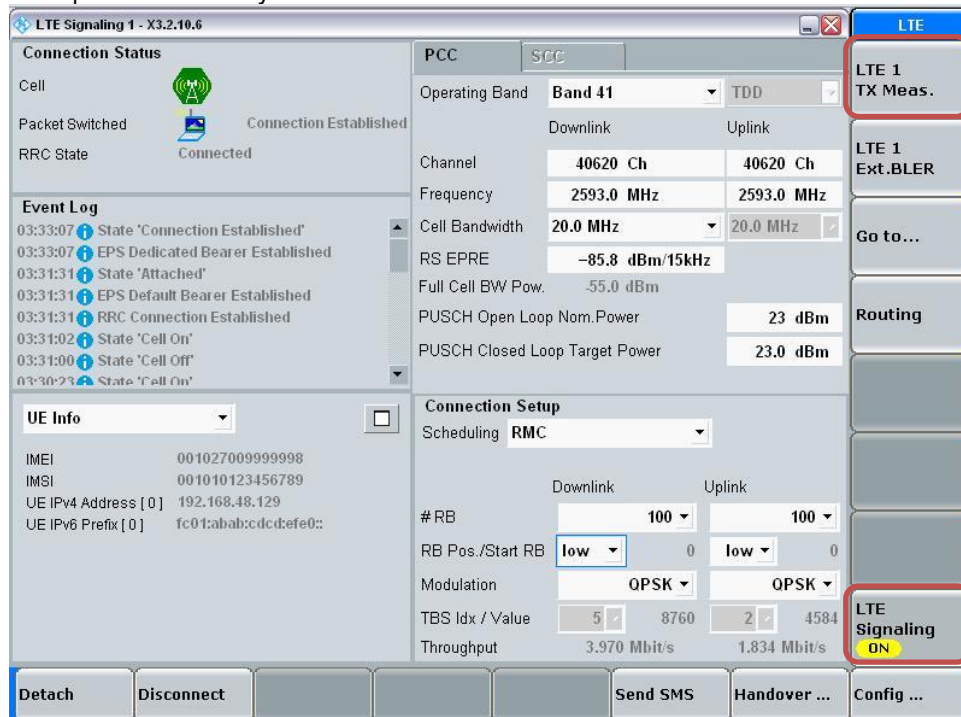


**Connect to EUT**

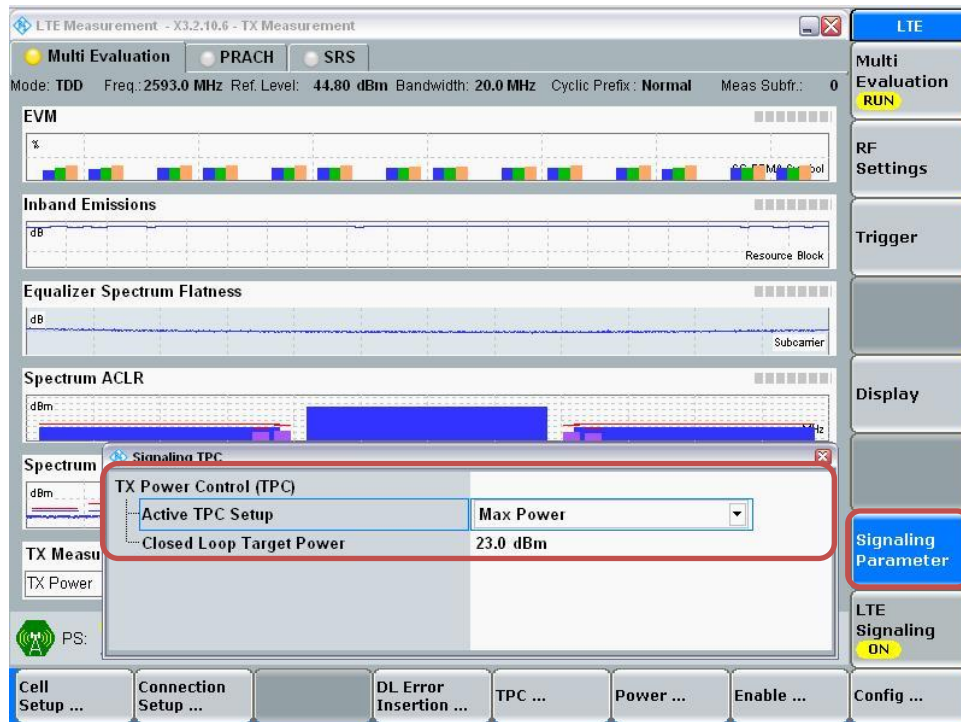
- Turn the cell on using “ON | OFF” key
- After EUT is Attached
- Select “Connect”

**Max Power Setting**

- Select “LTE 1 TX Meas.”
- Press “RESTART | STOP” Soft key



- Select “Signaling Parameter”
- Select “TX Power Control (TPC)” > Select “Active TPC Setup” to “Max Power” > Set “Closed Loop Target Power” to “23 dBm”



### View TX Power

- Go to “Display”
- Select “Select View...”
- Select “Spectrum Emission Mask”



# 1. Max power Results

## LTE Band 41 Power Class 3 Measured Results

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Maximum Average Power (dBm) |            |          |            |          |      |                  |      |
|-------------|--------|------------------|--------------|-----------------------------|------------|----------|------------|----------|------|------------------|------|
|             |        |                  |              | Measured Pw r (dBm)         |            |          |            |          | MPR  | Tune-up<br>Limit |      |
|             |        |                  |              | 39750                       | 40185      | 40620    | 41055      | 41490    |      |                  |      |
|             |        |                  |              | 2506 MHz                    | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz |      |                  |      |
| 20 MHz      | QPSK   | 1                | 0            | 22.8                        | 22.8       | 22.6     | 22.4       | 22.6     | 0.0  | 24.0             |      |
|             |        | 1                | 49           | 22.7                        | 22.6       | 22.5     | 22.3       | 22.4     | 0.0  | 24.0             |      |
|             |        | 1                | 99           | 22.7                        | 22.7       | 22.5     | 22.3       | 22.3     | 0.0  | 24.0             |      |
|             |        | 50               | 0            | 21.8                        | 21.8       | 21.6     | 21.4       | 21.5     | 1.0  | 23.0             |      |
|             |        | 50               | 24           | 21.8                        | 21.7       | 21.6     | 21.4       | 21.5     | 1.0  | 23.0             |      |
|             |        | 50               | 50           | 21.7                        | 21.7       | 21.5     | 21.4       | 21.5     | 1.0  | 23.0             |      |
|             | 16QAM  | 100              | 0            | 21.8                        | 21.7       | 21.6     | 21.4       | 21.5     | 1.0  | 23.0             |      |
|             |        | 1                | 0            | 21.8                        | 21.8       | 21.7     | 21.4       | 21.5     | 1.0  | 23.0             |      |
|             |        | 1                | 49           | 21.6                        | 21.9       | 21.6     | 21.4       | 21.4     | 1.0  | 23.0             |      |
|             |        | 1                | 99           | 22.0                        | 22.0       | 21.4     | 21.4       | 21.4     | 1.0  | 23.0             |      |
|             |        | 50               | 0            | 20.8                        | 20.8       | 20.6     | 20.4       | 20.5     | 2.0  | 22.0             |      |
|             |        | 50               | 24           | 20.7                        | 20.8       | 20.6     | 20.4       | 20.5     | 2.0  | 22.0             |      |
|             | 64QAM  | 50               | 50           | 20.8                        | 20.8       | 20.5     | 20.4       | 20.5     | 2.0  | 22.0             |      |
|             |        | 100              | 0            | 20.8                        | 20.8       | 20.6     | 20.3       | 20.4     | 2.0  | 22.0             |      |
|             |        | 1                | 0            | 20.7                        | 20.9       | 20.5     | 20.6       | 20.6     | 2.0  | 22.0             |      |
|             |        | 1                | 49           | 20.4                        | 20.8       | 20.3     | 20.6       | 20.7     | 2.0  | 22.0             |      |
|             |        | 1                | 99           | 20.9                        | 20.8       | 20.5     | 20.4       | 20.7     | 2.0  | 22.0             |      |
|             |        | 50               | 0            | 19.8                        | 20.8       | 20.3     | 20.5       | 20.4     | 3.0  | 21.0             |      |
|             | 256QAM | 50               | 24           | 19.8                        | 20.8       | 20.3     | 20.6       | 20.5     | 3.0  | 21.0             |      |
|             |        | 50               | 50           | 19.8                        | 20.9       | 20.3     | 20.5       | 20.7     | 3.0  | 21.0             |      |
|             |        | 100              | 0            | 19.8                        | 20.9       | 20.6     | 20.3       | 20.4     | 3.0  | 21.0             |      |
|             |        | 1                | 0            | 17.7                        | 17.8       | 17.6     | 17.4       | 17.5     | 5.0  | 19.0             |      |
|             |        | 1                | 49           | 17.3                        | 17.8       | 17.4     | 17.2       | 17.5     | 5.0  | 19.0             |      |
|             |        | 1                | 99           | 17.5                        | 18.0       | 17.4     | 17.5       | 17.3     | 5.0  | 19.0             |      |
|             | 15 MHz | QPSK             | 50           | 0                           | 17.7       | 17.7     | 17.5       | 17.3     | 17.4 | 5.0              | 19.0 |
|             |        |                  | 50           | 24                          | 17.7       | 17.7     | 17.5       | 17.3     | 17.4 | 5.0              | 19.0 |
|             |        |                  | 50           | 50                          | 17.7       | 17.7     | 17.5       | 17.3     | 17.3 | 5.0              | 19.0 |
|             |        |                  | 100          | 0                           | 17.7       | 17.7     | 17.5       | 17.3     | 17.3 | 5.0              | 19.0 |
| 1           |        |                  | 0            | 22.8                        | 22.8       | 22.6     | 22.4       | 22.4     | 0.0  | 24.0             |      |
| 1           |        |                  | 37           | 22.7                        | 22.7       | 22.5     | 22.2       | 22.3     | 0.0  | 24.0             |      |
| 16QAM       |        | 1                | 74           | 22.7                        | 22.7       | 22.6     | 22.2       | 22.4     | 0.0  | 24.0             |      |
|             |        | 36               | 0            | 21.7                        | 21.7       | 21.6     | 21.4       | 21.4     | 1.0  | 23.0             |      |
|             |        | 36               | 20           | 21.7                        | 21.7       | 21.6     | 21.4       | 21.4     | 1.0  | 23.0             |      |
|             |        | 36               | 39           | 21.7                        | 21.7       | 21.6     | 21.4       | 21.4     | 1.0  | 23.0             |      |
|             |        | 75               | 0            | 21.8                        | 21.7       | 21.6     | 21.4       | 21.5     | 1.0  | 23.0             |      |
|             |        | 1                | 0            | 21.7                        | 21.8       | 21.6     | 21.1       | 21.6     | 1.0  | 23.0             |      |
| 64QAM       | 1      | 37               | 21.7         | 21.7                        | 21.5       | 20.9     | 21.0       | 1.0      | 23.0 |                  |      |
|             | 1      | 74               | 21.4         | 21.7                        | 21.5       | 20.9     | 21.5       | 1.0      | 23.0 |                  |      |
|             | 36     | 0                | 20.7         | 20.7                        | 20.6       | 20.4     | 20.5       | 2.0      | 22.0 |                  |      |
|             | 36     | 20               | 20.7         | 20.7                        | 20.6       | 20.4     | 20.4       | 2.0      | 22.0 |                  |      |
|             | 36     | 39               | 20.8         | 20.7                        | 20.6       | 20.3     | 20.4       | 2.0      | 22.0 |                  |      |
|             | 75     | 0                | 20.7         | 20.7                        | 20.6       | 20.4     | 20.4       | 2.0      | 22.0 |                  |      |
| 256QAM      | 1      | 0                | 20.8         | 21.1                        | 20.7       | 20.4     | 20.5       | 2.0      | 22.0 |                  |      |
|             | 1      | 37               | 20.5         | 21.1                        | 20.7       | 20.2     | 20.4       | 2.0      | 22.0 |                  |      |
|             | 1      | 74               | 20.7         | 20.4                        | 20.8       | 20.1     | 20.3       | 2.0      | 22.0 |                  |      |
|             | 36     | 0                | 19.7         | 20.4                        | 20.6       | 20.1     | 20.6       | 3.0      | 21.0 |                  |      |
|             | 36     | 20               | 19.6         | 20.1                        | 20.6       | 20.3     | 20.5       | 3.0      | 21.0 |                  |      |
|             | 36     | 39               | 19.7         | 20.8                        | 20.6       | 20.3     | 20.4       | 3.0      | 21.0 |                  |      |
| 256QAM      | 75     | 0                | 19.7         | 20.8                        | 20.5       | 20.9     | 20.5       | 3.0      | 21.0 |                  |      |
|             | 1      | 0                | 17.9         | 17.8                        | 17.2       | 17.5     | 17.2       | 5.0      | 19.0 |                  |      |
|             | 1      | 37               | 18.0         | 17.4                        | 16.9       | 17.4     | 17.3       | 5.0      | 19.0 |                  |      |
|             | 1      | 74               | 17.8         | 17.7                        | 17.1       | 17.3     | 17.1       | 5.0      | 19.0 |                  |      |
|             | 36     | 0                | 17.7         | 17.7                        | 17.5       | 17.3     | 17.4       | 5.0      | 19.0 |                  |      |
|             | 36     | 20               | 17.7         | 17.7                        | 17.5       | 17.3     | 17.4       | 5.0      | 19.0 |                  |      |

**LTE Band 41 Power Class 3 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |            |          |            |          | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|------------|----------|------------|----------|-----|------------------|
|             |        |                  |              | 39750              | 40185      | 40620    | 41055      | 41490    |     |                  |
|             |        |                  |              | 2506 MHz           | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz |     |                  |
| 10 MHz      | QPSK   | 1                | 0            | 22.7               | 22.7       | 22.5     | 22.4       | 22.5     | 0.0 | 24.0             |
|             |        | 1                | 25           | 22.7               | 22.7       | 22.5     | 22.2       | 22.3     | 0.0 | 24.0             |
|             |        | 1                | 49           | 22.6               | 22.6       | 22.4     | 22.3       | 22.4     | 0.0 | 24.0             |
|             |        | 25               | 0            | 21.8               | 21.7       | 21.6     | 21.4       | 21.4     | 1.0 | 23.0             |
|             |        | 25               | 12           | 21.8               | 21.7       | 21.6     | 21.3       | 21.4     | 1.0 | 23.0             |
|             |        | 25               | 25           | 21.7               | 21.7       | 21.5     | 21.4       | 21.4     | 1.0 | 23.0             |
|             | 16QAM  | 50               | 0            | 21.8               | 21.8       | 21.6     | 21.3       | 21.4     | 1.0 | 23.0             |
|             |        | 1                | 0            | 21.6               | 21.7       | 21.7     | 21.5       | 21.5     | 1.0 | 23.0             |
|             |        | 1                | 25           | 21.9               | 21.6       | 21.7     | 21.4       | 21.3     | 1.0 | 23.0             |
|             |        | 1                | 49           | 21.9               | 21.6       | 21.7     | 21.4       | 21.5     | 1.0 | 23.0             |
|             |        | 25               | 0            | 20.8               | 20.8       | 20.5     | 20.4       | 20.4     | 2.0 | 22.0             |
|             |        | 25               | 12           | 20.8               | 20.8       | 20.6     | 20.3       | 20.4     | 2.0 | 22.0             |
|             | 64QAM  | 25               | 25           | 20.8               | 20.8       | 20.5     | 20.4       | 20.4     | 2.0 | 22.0             |
|             |        | 50               | 0            | 20.8               | 20.8       | 20.5     | 20.4       | 20.4     | 2.0 | 22.0             |
|             |        | 1                | 0            | 20.7               | 20.6       | 20.5     | 20.3       | 20.5     | 2.0 | 22.0             |
|             |        | 1                | 25           | 20.6               | 20.6       | 20.5     | 20.4       | 20.5     | 2.0 | 22.0             |
|             |        | 1                | 49           | 20.8               | 20.6       | 20.5     | 20.4       | 20.5     | 2.0 | 22.0             |
|             |        | 25               | 0            | 19.7               | 20.6       | 20.5     | 20.4       | 20.5     | 3.0 | 21.0             |
|             | 256QAM | 25               | 12           | 19.7               | 20.6       | 20.5     | 20.4       | 20.5     | 3.0 | 21.0             |
|             |        | 25               | 25           | 19.7               | 20.6       | 20.5     | 20.4       | 20.5     | 3.0 | 21.0             |
|             |        | 50               | 0            | 19.7               | 20.6       | 20.5     | 20.4       | 20.5     | 3.0 | 21.0             |
|             |        | 1                | 0            | 17.7               | 17.5       | 17.4     | 17.3       | 17.2     | 5.0 | 19.0             |
|             |        | 1                | 25           | 17.5               | 17.4       | 17.3     | 17.2       | 17.1     | 5.0 | 19.0             |
|             |        | 1                | 49           | 17.6               | 17.5       | 17.4     | 17.2       | 17.2     | 5.0 | 19.0             |
|             |        | 25               | 0            | 17.7               | 17.7       | 17.5     | 17.3       | 17.4     | 5.0 | 19.0             |
|             |        | 25               | 12           | 17.7               | 17.7       | 17.5     | 17.4       | 17.4     | 5.0 | 19.0             |
|             |        | 25               | 25           | 17.7               | 17.6       | 17.5     | 17.3       | 17.4     | 5.0 | 19.0             |
|             |        | 50               | 0            | 17.7               | 17.7       | 17.5     | 17.3       | 17.4     | 5.0 | 19.0             |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |            |          |            |          | MPR | Tune-up<br>Limit |
|             |        |                  |              | 39750              | 40185      | 40620    | 41055      | 41490    |     |                  |
|             |        |                  |              | 2506 MHz           | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz |     |                  |
| 5 MHz       | QPSK   | 1                | 0            | 22.7               | 22.7       | 22.6     | 22.3       | 22.4     | 0.0 | 24.0             |
|             |        | 1                | 12           | 22.6               | 22.5       | 22.4     | 22.3       | 22.5     | 0.0 | 24.0             |
|             |        | 1                | 24           | 22.7               | 22.7       | 22.5     | 22.3       | 22.4     | 0.0 | 24.0             |
|             |        | 12               | 0            | 21.7               | 21.7       | 21.5     | 21.3       | 21.4     | 1.0 | 23.0             |
|             |        | 12               | 7            | 21.7               | 21.6       | 21.5     | 21.3       | 21.4     | 1.0 | 23.0             |
|             |        | 12               | 13           | 21.7               | 21.7       | 21.5     | 21.3       | 21.4     | 1.0 | 23.0             |
|             | 16QAM  | 25               | 0            | 21.7               | 21.7       | 21.5     | 21.3       | 21.4     | 1.0 | 23.0             |
|             |        | 1                | 0            | 21.8               | 21.6       | 21.5     | 21.3       | 21.4     | 1.0 | 23.0             |
|             |        | 1                | 12           | 21.6               | 21.4       | 21.3     | 21.3       | 21.4     | 1.0 | 23.0             |
|             |        | 1                | 24           | 21.8               | 21.6       | 21.4     | 21.3       | 21.3     | 1.0 | 23.0             |
|             |        | 12               | 0            | 20.7               | 20.6       | 20.6     | 20.3       | 20.5     | 2.0 | 22.0             |
|             |        | 12               | 7            | 20.7               | 20.6       | 20.6     | 20.3       | 20.5     | 2.0 | 22.0             |
|             | 64QAM  | 12               | 13           | 20.7               | 20.6       | 20.6     | 20.3       | 20.5     | 2.0 | 22.0             |
|             |        | 25               | 0            | 20.7               | 20.6       | 20.5     | 20.3       | 20.4     | 2.0 | 22.0             |
|             |        | 1                | 0            | 20.7               | 20.8       | 20.5     | 20.4       | 20.4     | 2.0 | 22.0             |
|             |        | 1                | 12           | 20.6               | 20.7       | 20.5     | 20.3       | 20.4     | 2.0 | 22.0             |
|             |        | 1                | 24           | 20.6               | 20.7       | 20.5     | 20.3       | 20.4     | 2.0 | 22.0             |
|             |        | 12               | 0            | 19.7               | 20.8       | 20.5     | 19.4       | 20.4     | 3.0 | 21.0             |
|             | 256QAM | 12               | 7            | 19.7               | 20.7       | 20.5     | 19.4       | 20.4     | 3.0 | 21.0             |
|             |        | 12               | 13           | 19.7               | 20.7       | 20.5     | 19.4       | 20.3     | 3.0 | 21.0             |
|             |        | 25               | 0            | 19.8               | 20.7       | 20.5     | 19.2       | 20.4     | 3.0 | 21.0             |
|             |        | 1                | 0            | 17.7               | 17.9       | 17.8     | 17.6       | 17.4     | 5.0 | 19.0             |
|             |        | 1                | 12           | 17.6               | 17.8       | 17.6     | 17.5       | 17.4     | 5.0 | 19.0             |
|             |        | 1                | 24           | 17.7               | 17.9       | 17.7     | 17.6       | 17.4     | 5.0 | 19.0             |
|             |        | 12               | 0            | 17.7               | 17.7       | 17.4     | 17.3       | 17.4     | 5.0 | 19.0             |
|             |        | 12               | 7            | 17.7               | 17.7       | 17.4     | 17.3       | 17.4     | 5.0 | 19.0             |
|             |        | 12               | 13           | 17.7               | 17.6       | 17.4     | 17.3       | 17.4     | 5.0 | 19.0             |
|             |        | 25               | 0            | 17.7               | 17.6       | 17.4     | 17.3       | 17.4     | 5.0 | 19.0             |

**LTE Band 41 Power Class 2 Measured Results**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Maximum Average Power (dBm) |            |          |            |          |      |                  |
|-------------|--------|------------------|--------------|-----------------------------|------------|----------|------------|----------|------|------------------|
|             |        |                  |              | Measured Pw r (dBm)         |            |          |            |          | MPR  | Tune-up<br>Limit |
|             |        |                  |              | 39750                       | 40185      | 40620    | 41055      | 41490    |      |                  |
|             |        |                  |              | 2506 MHz                    | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz |      |                  |
| 20 MHz      | QPSK   | 1                | 0            | 24.4                        | 24.3       | 24.2     | 24.1       | 24.2     | 0.0  | 25.5             |
|             |        | 1                | 49           | 24.2                        | 24.2       | 24.1     | 24.1       | 24.0     | 0.0  | 25.5             |
|             |        | 1                | 99           | 24.3                        | 24.3       | 24.3     | 24.0       | 24.2     | 0.0  | 25.5             |
|             |        | 50               | 0            | 23.4                        | 23.3       | 23.3     | 23.1       | 23.1     | 1.0  | 24.5             |
|             |        | 50               | 24           | 23.4                        | 23.4       | 23.2     | 23.1       | 23.1     | 1.0  | 24.5             |
|             |        | 50               | 50           | 23.4                        | 23.3       | 23.2     | 23.0       | 23.1     | 1.0  | 24.5             |
|             |        | 100              | 0            | 23.4                        | 23.3       | 23.2     | 23.1       | 23.1     | 1.0  | 24.5             |
|             | 16QAM  | 1                | 0            | 23.6                        | 23.5       | 23.5     | 23.3       | 23.4     | 1.0  | 24.5             |
|             |        | 1                | 49           | 23.5                        | 23.5       | 23.3     | 23.1       | 23.3     | 1.0  | 24.5             |
|             |        | 1                | 99           | 23.6                        | 23.6       | 23.3     | 23.2       | 23.3     | 1.0  | 24.5             |
|             |        | 50               | 0            | 22.4                        | 22.4       | 22.3     | 22.1       | 22.1     | 2.0  | 23.5             |
|             |        | 50               | 24           | 22.4                        | 22.4       | 22.3     | 22.1       | 22.1     | 2.0  | 23.5             |
|             |        | 50               | 50           | 22.4                        | 22.4       | 22.2     | 22.1       | 22.1     | 2.0  | 23.5             |
|             |        | 100              | 0            | 22.4                        | 22.4       | 22.2     | 22.1       | 22.1     | 2.0  | 23.5             |
|             | 64QAM  | 1                | 0            | 23.1                        | 22.6       | 22.4     | 22.2       | 22.6     | 2.0  | 23.5             |
|             |        | 1                | 49           | 23.0                        | 22.6       | 22.4     | 22.2       | 22.6     | 2.0  | 23.5             |
|             |        | 1                | 99           | 23.1                        | 22.6       | 22.4     | 22.2       | 22.6     | 2.0  | 23.5             |
|             |        | 50               | 0            | 21.5                        | 21.5       | 21.4     | 21.2       | 21.2     | 3.0  | 22.5             |
|             |        | 50               | 24           | 21.5                        | 21.4       | 21.3     | 21.1       | 21.2     | 3.0  | 22.5             |
|             |        | 50               | 50           | 21.5                        | 21.4       | 21.3     | 21.2       | 21.2     | 3.0  | 22.5             |
|             |        | 100              | 0            | 21.4                        | 21.4       | 21.4     | 21.1       | 21.2     | 3.0  | 22.5             |
|             | 256QAM | 1                | 0            | 19.8                        | 19.9       | 19.7     | 19.6       | 19.8     | 5.0  | 20.5             |
|             |        | 1                | 49           | 19.7                        | 19.9       | 19.5     | 19.5       | 19.6     | 5.0  | 20.5             |
|             |        | 1                | 99           | 19.8                        | 19.9       | 19.6     | 19.6       | 19.7     | 5.0  | 20.5             |
| 50          |        | 0                | 19.4         | 19.4                        | 19.3       | 19.1     | 19.1       | 5.0      | 20.5 |                  |
| 50          |        | 24               | 19.4         | 19.4                        | 19.2       | 19.1     | 19.1       | 5.0      | 20.5 |                  |
| 50          |        | 50               | 19.4         | 19.4                        | 19.3       | 19.1     | 19.1       | 5.0      | 20.5 |                  |
| 100         |        | 0                | 19.4         | 19.4                        | 19.3       | 19.1     | 19.2       | 5.0      | 20.5 |                  |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pw r (dBm)         |            |          |            |          | MPR  | Tune-up<br>Limit |
|             |        |                  |              | 39750                       | 40185      | 40620    | 41055      | 41490    |      |                  |
|             |        |                  |              | 2506 MHz                    | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz |      |                  |
|             |        |                  |              | 15 MHz                      | QPSK       | 1        | 0          | 24.4     | 24.4 | 24.4             |
| 1           | 37     | 24.4             | 24.3         |                             |            | 24.1     | 24.1       | 24.0     | 0.0  | 25.5             |
| 1           | 74     | 24.3             | 24.3         |                             |            | 24.3     | 24.1       | 24.0     | 0.0  | 25.5             |
| 36          | 0      | 23.4             | 23.5         |                             |            | 23.4     | 23.2       | 23.2     | 1.0  | 24.5             |
| 36          | 20     | 23.4             | 23.4         |                             |            | 23.3     | 23.2       | 23.2     | 1.0  | 24.5             |
| 36          | 39     | 23.4             | 23.5         |                             |            | 23.3     | 23.2       | 23.2     | 1.0  | 24.5             |
| 75          | 0      | 23.5             | 23.5         |                             |            | 23.4     | 23.2       | 23.2     | 1.0  | 24.5             |
| 16QAM       | 1      | 0                | 23.6         |                             | 23.8       | 23.8     | 23.6       | 23.5     | 1.0  | 24.5             |
|             | 1      | 37               | 23.3         |                             | 24.0       | 23.6     | 23.2       | 23.7     | 1.0  | 24.5             |
|             | 1      | 74               | 23.5         |                             | 23.6       | 23.6     | 23.4       | 23.2     | 1.0  | 24.5             |
|             | 36     | 0                | 22.5         |                             | 22.4       | 22.3     | 22.3       | 22.2     | 2.0  | 23.5             |
|             | 36     | 20               | 22.4         |                             | 22.4       | 22.3     | 22.2       | 22.1     | 2.0  | 23.5             |
|             | 36     | 39               | 22.5         |                             | 22.4       | 22.3     | 22.2       | 22.1     | 2.0  | 23.5             |
|             | 75     | 0                | 22.4         |                             | 22.5       | 22.4     | 22.2       | 22.2     | 2.0  | 23.5             |
| 64QAM       | 1      | 0                | 22.2         |                             | 22.6       | 22.6     | 22.7       | 22.5     | 2.0  | 23.5             |
|             | 1      | 37               | 22.3         |                             | 22.6       | 22.6     | 22.8       | 22.7     | 2.0  | 23.5             |
|             | 1      | 74               | 22.1         |                             | 22.6       | 22.6     | 22.6       | 22.3     | 2.0  | 23.5             |
|             | 36     | 0                | 21.3         |                             | 21.4       | 21.3     | 21.2       | 21.2     | 3.0  | 22.5             |
|             | 36     | 20               | 21.3         |                             | 21.4       | 21.3     | 21.1       | 21.2     | 3.0  | 22.5             |
|             | 36     | 39               | 21.3         |                             | 21.4       | 21.3     | 21.1       | 21.2     | 3.0  | 22.5             |
|             | 75     | 0                | 21.4         |                             | 21.4       | 21.3     | 21.1       | 21.2     | 3.0  | 22.5             |
| 256QAM      | 1      | 0                | 19.8         |                             | 19.5       | 19.0     | 19.7       | 19.5     | 5.0  | 20.5             |
|             | 1      | 37               | 19.7         |                             | 19.5       | 19.1     | 19.9       | 19.6     | 5.0  | 20.5             |
|             | 1      | 74               | 19.7         |                             | 19.5       | 19.4     | 19.7       | 19.5     | 5.0  | 20.5             |
|             | 36     | 0                | 19.3         |                             | 19.4       | 19.3     | 19.2       | 19.2     | 5.0  | 20.5             |
|             | 36     | 20               | 19.3         |                             | 19.4       | 19.3     | 19.1       | 19.2     | 5.0  | 20.5             |
|             | 36     | 39               | 19.3         |                             | 19.4       | 19.4     | 19.1       | 19.2     | 5.0  | 20.5             |
|             | 75     | 0                | 19.3         |                             | 19.4       | 19.3     | 19.1       | 19.2     | 5.0  | 20.5             |

**LTE Band 41 Power Class 2 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |            |          |            |          | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|------------|----------|------------|----------|-----|------------------|
|             |        |                  |              | 39750              | 40185      | 40620    | 41055      | 41490    |     |                  |
|             |        |                  |              | 2506 MHz           | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz |     |                  |
| 10 MHz      | QPSK   | 1                | 0            | 24.5               | 24.3       | 24.3     | 24.2       | 24.2     | 0.0 | 25.5             |
|             |        | 1                | 25           | 24.3               | 24.2       | 24.2     | 24.0       | 24.1     | 0.0 | 25.5             |
|             |        | 1                | 49           | 24.4               | 24.3       | 24.3     | 24.1       | 24.2     | 0.0 | 25.5             |
|             |        | 25               | 0            | 23.4               | 23.4       | 23.3     | 23.2       | 23.2     | 1.0 | 24.5             |
|             |        | 25               | 12           | 23.4               | 23.4       | 23.3     | 23.1       | 23.2     | 1.0 | 24.5             |
|             |        | 25               | 25           | 23.4               | 23.4       | 23.3     | 23.2       | 23.2     | 1.0 | 24.5             |
|             | 16QAM  | 50               | 0            | 23.4               | 23.4       | 23.3     | 23.2       | 23.2     | 1.0 | 24.5             |
|             |        | 1                | 0            | 23.8               | 23.7       | 23.7     | 23.5       | 23.4     | 1.0 | 24.5             |
|             |        | 1                | 25           | 23.7               | 23.7       | 23.6     | 23.4       | 23.3     | 1.0 | 24.5             |
|             |        | 1                | 49           | 23.7               | 23.8       | 23.7     | 23.4       | 23.4     | 1.0 | 24.5             |
|             |        | 25               | 0            | 22.4               | 22.5       | 22.3     | 22.2       | 22.3     | 2.0 | 23.5             |
|             |        | 25               | 12           | 22.4               | 22.4       | 22.3     | 22.1       | 22.2     | 2.0 | 23.5             |
|             | 64QAM  | 25               | 25           | 22.4               | 22.5       | 22.3     | 22.1       | 22.2     | 2.0 | 23.5             |
|             |        | 50               | 0            | 22.5               | 22.5       | 22.3     | 22.2       | 22.2     | 2.0 | 23.5             |
|             |        | 1                | 0            | 22.6               | 22.4       | 22.6     | 22.3       | 22.4     | 2.0 | 23.5             |
|             |        | 1                | 25           | 22.5               | 22.4       | 22.6     | 22.3       | 22.4     | 2.0 | 23.5             |
|             |        | 1                | 49           | 22.7               | 22.4       | 22.6     | 22.3       | 22.4     | 2.0 | 23.5             |
|             |        | 25               | 0            | 21.4               | 21.5       | 21.3     | 21.1       | 21.2     | 3.0 | 22.5             |
|             | 256QAM | 25               | 12           | 21.4               | 21.4       | 21.2     | 21.1       | 21.2     | 3.0 | 22.5             |
|             |        | 25               | 25           | 21.3               | 21.4       | 21.2     | 21.1       | 21.2     | 3.0 | 22.5             |
|             |        | 50               | 0            | 21.4               | 21.4       | 21.3     | 21.1       | 21.2     | 3.0 | 22.5             |
|             |        | 1                | 0            | 19.5               | 19.6       | 19.6     | 19.2       | 19.4     | 5.0 | 20.5             |
|             |        | 1                | 25           | 19.4               | 19.5       | 19.8     | 19.1       | 19.3     | 5.0 | 20.5             |
|             |        | 1                | 49           | 19.5               | 19.6       | 19.6     | 19.2       | 19.3     | 5.0 | 20.5             |
|             |        | 25               | 0            | 19.4               | 19.4       | 19.3     | 19.1       | 19.2     | 5.0 | 20.5             |
|             |        | 25               | 12           | 19.4               | 19.4       | 19.3     | 19.1       | 19.2     | 5.0 | 20.5             |
|             |        | 25               | 25           | 19.4               | 19.4       | 19.3     | 19.1       | 19.2     | 5.0 | 20.5             |
|             |        | 50               | 0            | 19.4               | 19.4       | 19.2     | 19.1       | 19.2     | 5.0 | 20.5             |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |            |          |            |          | MPR | Tune-up<br>Limit |
|             |        |                  |              | 39750              | 40185      | 40620    | 41055      | 41490    |     |                  |
|             |        |                  |              | 2506 MHz           | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz |     |                  |
| 5 MHz       | QPSK   | 1                | 0            | 24.4               | 24.3       | 24.5     | 24.1       | 24.1     | 0.0 | 25.5             |
|             |        | 1                | 12           | 24.6               | 24.6       | 24.3     | 24.3       | 24.4     | 0.0 | 25.5             |
|             |        | 1                | 24           | 24.3               | 24.3       | 24.3     | 24.0       | 24.1     | 0.0 | 25.5             |
|             |        | 12               | 0            | 23.4               | 23.4       | 23.3     | 23.1       | 23.2     | 1.0 | 24.5             |
|             |        | 12               | 7            | 23.4               | 23.4       | 23.3     | 23.1       | 23.2     | 1.0 | 24.5             |
|             |        | 12               | 13           | 23.4               | 23.4       | 23.3     | 23.2       | 23.2     | 1.0 | 24.5             |
|             | 16QAM  | 25               | 0            | 23.4               | 23.4       | 23.3     | 23.1       | 23.2     | 1.0 | 24.5             |
|             |        | 1                | 0            | 23.6               | 23.5       | 24.0     | 23.5       | 23.1     | 1.0 | 24.5             |
|             |        | 1                | 12           | 23.5               | 23.4       | 23.7     | 23.3       | 23.2     | 1.0 | 24.5             |
|             |        | 1                | 24           | 23.8               | 23.4       | 23.8     | 23.6       | 23.1     | 1.0 | 24.5             |
|             |        | 12               | 0            | 22.5               | 22.4       | 22.3     | 22.2       | 22.2     | 2.0 | 23.5             |
|             |        | 12               | 7            | 22.5               | 22.4       | 22.3     | 22.2       | 22.2     | 2.0 | 23.5             |
|             | 64QAM  | 12               | 13           | 22.5               | 22.4       | 22.3     | 22.2       | 22.3     | 2.0 | 23.5             |
|             |        | 25               | 0            | 22.4               | 22.4       | 22.3     | 22.1       | 22.2     | 2.0 | 23.5             |
|             |        | 1                | 0            | 22.9               | 22.6       | 22.7     | 22.4       | 22.7     | 2.0 | 23.5             |
|             |        | 1                | 12           | 22.6               | 22.6       | 22.7     | 22.4       | 22.7     | 2.0 | 23.5             |
|             |        | 1                | 24           | 22.9               | 22.6       | 22.6     | 22.4       | 22.7     | 2.0 | 23.5             |
|             |        | 12               | 0            | 21.4               | 21.5       | 21.3     | 21.1       | 21.2     | 3.0 | 22.5             |
|             | 256QAM | 12               | 7            | 21.4               | 21.5       | 21.3     | 21.1       | 21.2     | 3.0 | 22.5             |
|             |        | 12               | 13           | 21.4               | 21.5       | 21.3     | 21.1       | 21.2     | 3.0 | 22.5             |
|             |        | 25               | 0            | 21.4               | 21.4       | 21.2     | 21.0       | 21.1     | 3.0 | 22.5             |
|             |        | 1                | 0            | 19.9               | 19.9       | 19.7     | 19.4       | 19.7     | 5.0 | 20.5             |
|             |        | 1                | 12           | 19.8               | 20.1       | 19.5     | 19.3       | 19.9     | 5.0 | 20.5             |
|             |        | 1                | 24           | 19.7               | 19.9       | 19.8     | 19.4       | 19.7     | 5.0 | 20.5             |
|             |        | 12               | 0            | 19.3               | 19.3       | 19.3     | 19.1       | 19.2     | 5.0 | 20.5             |
|             |        | 12               | 7            | 19.3               | 19.4       | 19.3     | 19.0       | 19.2     | 5.0 | 20.5             |
|             |        | 12               | 13           | 19.3               | 19.4       | 19.3     | 19.1       | 19.2     | 5.0 | 20.5             |
|             |        | 25               | 0            | 19.4               | 19.3       | 19.2     | 19.0       | 19.1     | 5.0 | 20.5             |

## 2. Reduced power Results

### LTE Band 41 Power Class 3 Measured Results

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Reduced Average Power (dBm)<br>Hotspot back-off |            |          |            |          |      |                  | Reduced Average Power (dBm)<br>Proximity sensor back-off |            |          |            |          |      |                  |      |
|-------------|--------|------------------|--------------|-------------------------------------------------|------------|----------|------------|----------|------|------------------|----------------------------------------------------------|------------|----------|------------|----------|------|------------------|------|
|             |        |                  |              | Measured Pwr (dBm)                              |            |          |            |          | MPR  | Tune-up<br>Limit | Measured Pwr (dBm)                                       |            |          |            |          | MPR  | Tune-up<br>Limit |      |
|             |        |                  |              | 39750                                           | 40185      | 40620    | 41055      | 41490    |      |                  | 39750                                                    | 40185      | 40620    | 41055      | 41490    |      |                  |      |
|             |        |                  |              | 2506 MHz                                        | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz |      |                  | 2506 MHz                                                 | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz |      |                  |      |
| 20 MHz      | QPSK   | 1                | 0            | 19.7                                            | 19.9       | 19.8     | 19.7       | 19.8     | 0.0  | 21.0             | 19.8                                                     | 19.9       | 19.8     | 19.6       | 19.8     | 0.0  | 21.0             |      |
|             |        | 1                | 49           | 19.6                                            | 19.8       | 19.6     | 19.7       | 19.7     | 0.0  | 21.0             | 19.7                                                     | 19.8       | 19.7     | 19.5       | 19.5     | 0.0  | 21.0             |      |
|             |        | 1                | 99           | 19.7                                            | 19.9       | 19.7     | 19.5       | 19.6     | 0.0  | 21.0             | 19.8                                                     | 19.8       | 19.6     | 19.5       | 19.6     | 0.0  | 21.0             |      |
|             |        | 50               | 0            | 19.7                                            | 19.9       | 19.8     | 19.6       | 19.6     | 0.0  | 21.0             | 19.8                                                     | 19.9       | 19.8     | 19.6       | 19.7     | 0.0  | 21.0             |      |
|             |        | 50               | 24           | 19.7                                            | 19.8       | 19.7     | 19.6       | 19.6     | 0.0  | 21.0             | 19.8                                                     | 19.9       | 19.7     | 19.6       | 19.6     | 0.0  | 21.0             |      |
|             |        | 50               | 50           | 19.7                                            | 19.8       | 19.7     | 19.6       | 19.6     | 0.0  | 21.0             | 19.8                                                     | 19.8       | 19.7     | 19.6       | 19.6     | 0.0  | 21.0             |      |
|             |        | 100              | 0            | 19.7                                            | 20.2       | 19.7     | 19.6       | 19.6     | 0.0  | 21.0             | 19.8                                                     | 19.9       | 19.7     | 19.6       | 19.6     | 0.0  | 21.0             |      |
|             |        | 1                | 0            | 19.7                                            | 19.5       | 20.0     | 20.0       | 19.9     | 0.0  | 21.0             | 20.0                                                     | 20.0       | 19.7     | 19.8       | 19.8     | 0.0  | 21.0             |      |
|             | 16QAM  | 1                | 49           | 19.7                                            | 19.9       | 19.9     | 19.9       | 19.7     | 0.0  | 21.0             | 20.0                                                     | 19.5       | 19.5     | 19.7       | 19.6     | 0.0  | 21.0             |      |
|             |        | 1                | 99           | 20.2                                            | 19.9       | 19.7     | 19.6       | 19.8     | 0.0  | 21.0             | 20.1                                                     | 19.9       | 19.7     | 19.7       | 19.5     | 0.0  | 21.0             |      |
|             |        | 50               | 0            | 19.7                                            | 19.9       | 19.8     | 19.5       | 19.6     | 0.0  | 21.0             | 19.8                                                     | 19.9       | 19.7     | 19.5       | 19.6     | 0.0  | 21.0             |      |
|             |        | 50               | 24           | 19.7                                            | 19.9       | 19.8     | 19.6       | 19.6     | 0.0  | 21.0             | 19.8                                                     | 19.8       | 19.7     | 19.6       | 19.6     | 0.0  | 21.0             |      |
|             |        | 50               | 50           | 19.7                                            | 19.9       | 19.8     | 19.6       | 19.6     | 0.0  | 21.0             | 19.8                                                     | 19.8       | 19.7     | 19.5       | 19.6     | 0.0  | 21.0             |      |
|             |        | 100              | 0            | 19.7                                            | 19.8       | 19.7     | 19.6       | 19.6     | 0.0  | 21.0             | 19.8                                                     | 19.9       | 19.7     | 19.5       | 19.6     | 0.0  | 21.0             |      |
|             |        | 1                | 0            | 20.0                                            | 19.8       | 19.7     | 19.5       | 19.5     | 0.0  | 21.0             | 20.2                                                     | 19.7       | 19.9     | 19.7       | 20.2     | 0.0  | 21.0             |      |
|             |        | 1                | 49           | 20.1                                            | 19.8       | 19.6     | 19.8       | 20.0     | 0.0  | 21.0             | 19.6                                                     | 19.9       | 19.5     | 19.2       | 19.4     | 0.0  | 21.0             |      |
|             | 64QAM  | 1                | 99           | 19.5                                            | 19.9       | 19.6     | 19.8       | 19.6     | 0.0  | 21.0             | 19.6                                                     | 19.9       | 20.0     | 19.2       | 19.4     | 0.0  | 21.0             |      |
|             |        | 50               | 0            | 19.9                                            | 19.9       | 19.8     | 19.8       | 19.7     | 0.0  | 21.0             | 19.9                                                     | 19.9       | 19.7     | 19.5       | 20.0     | 0.0  | 21.0             |      |
|             |        | 50               | 24           | 19.9                                            | 19.8       | 19.8     | 19.8       | 19.8     | 0.0  | 21.0             | 19.9                                                     | 19.8       | 19.9     | 20.2       | 20.2     | 0.0  | 21.0             |      |
|             |        | 50               | 50           | 19.8                                            | 20.0       | 19.8     | 19.9       | 19.7     | 0.0  | 21.0             | 19.9                                                     | 19.4       | 19.9     | 19.6       | 19.8     | 0.0  | 21.0             |      |
|             |        | 100              | 0            | 19.8                                            | 19.8       | 19.8     | 19.8       | 19.6     | 0.0  | 21.0             | 19.9                                                     | 19.9       | 19.9     | 19.3       | 20.2     | 0.0  | 21.0             |      |
|             |        | 1                | 0            | 18.0                                            | 18.0       | 17.5     | 18.0       | 17.9     | 2.0  | 19.0             | 17.9                                                     | 18.2       | 17.7     | 17.6       | 17.7     | 2.0  | 19.0             |      |
|             |        | 1                | 49           | 18.1                                            | 17.8       | 17.5     | 17.4       | 17.6     | 2.0  | 19.0             | 17.8                                                     | 17.7       | 17.8     | 17.3       | 17.5     | 2.0  | 19.0             |      |
|             |        | 1                | 99           | 18.0                                            | 18.1       | 18.2     | 17.5       | 17.6     | 2.0  | 19.0             | 18.0                                                     | 18.1       | 17.9     | 17.2       | 17.7     | 2.0  | 19.0             |      |
|             | 256QAM | 50               | 0            | 17.8                                            | 17.9       | 17.8     | 17.5       | 17.6     | 2.0  | 19.0             | 17.9                                                     | 17.9       | 17.8     | 17.6       | 17.6     | 2.0  | 19.0             |      |
|             |        | 50               | 24           | 17.9                                            | 17.9       | 17.8     | 17.5       | 17.6     | 2.0  | 19.0             | 17.9                                                     | 17.9       | 17.7     | 17.6       | 17.6     | 2.0  | 19.0             |      |
|             |        | 50               | 50           | 17.8                                            | 17.9       | 17.8     | 17.5       | 17.6     | 2.0  | 19.0             | 17.9                                                     | 17.9       | 17.7     | 17.6       | 17.6     | 2.0  | 19.0             |      |
|             |        | 100              | 0            | 17.8                                            | 17.8       | 17.8     | 17.5       | 17.6     | 2.0  | 19.0             | 17.9                                                     | 17.9       | 17.7     | 17.5       | 17.6     | 2.0  | 19.0             |      |
| 15 MHz      |        | QPSK             | 1            | 0                                               | 19.9       | 19.9     | 19.9       | 19.8     | 19.7 | 0.0              | 21.0                                                     | 19.9       | 20.0     | 20.0       | 19.8     | 19.7 | 0.0              | 21.0 |
|             |        |                  | 1            | 37                                              | 19.8       | 19.9     | 19.7       | 19.7     | 19.7 | 0.0              | 21.0                                                     | 19.9       | 19.9     | 19.7       | 19.5     | 19.5 | 0.0              | 21.0 |
|             |        |                  | 1            | 74                                              | 19.9       | 19.8     | 19.8       | 19.8     | 19.6 | 0.0              | 21.0                                                     | 19.9       | 20.0     | 19.9       | 19.6     | 19.6 | 0.0              | 21.0 |
|             |        |                  | 36           | 0                                               | 19.9       | 19.9     | 19.8       | 19.8     | 19.7 | 0.0              | 21.0                                                     | 19.9       | 20.0     | 19.9       | 19.7     | 19.7 | 0.0              | 21.0 |
|             | 36     |                  | 20           | 19.9                                            | 19.9       | 19.8     | 19.8       | 19.7     | 0.0  | 21.0             | 19.9                                                     | 19.9       | 19.9     | 19.6       | 19.7     | 0.0  | 21.0             |      |
|             | 36     |                  | 39           | 19.9                                            | 19.9       | 19.8     | 19.8       | 19.6     | 0.0  | 21.0             | 19.9                                                     | 20.0       | 19.8     | 19.6       | 19.7     | 0.0  | 21.0             |      |
|             | 75     |                  | 0            | 19.9                                            | 19.9       | 19.8     | 19.8       | 19.7     | 0.0  | 21.0             | 19.9                                                     | 20.0       | 19.9     | 19.6       | 19.7     | 0.0  | 21.0             |      |
|             | 1      |                  | 0            | 19.7                                            | 19.8       | 19.7     | 19.9       | 19.7     | 0.0  | 21.0             | 19.9                                                     | 20.0       | 20.1     | 19.8       | 19.4     | 0.0  | 21.0             |      |
|             | 16QAM  | 1                | 37           | 19.6                                            | 20.0       | 19.5     | 19.8       | 19.9     | 0.0  | 21.0             | 19.8                                                     | 19.3       | 19.5     | 19.3       | 19.4     | 0.0  | 21.0             |      |
|             |        | 1                | 74           | 19.7                                            | 19.7       | 19.7     | 20.1       | 19.8     | 0.0  | 21.0             | 19.7                                                     | 19.8       | 20.0     | 19.3       | 19.0     | 0.0  | 21.0             |      |
|             |        | 36               | 0            | 19.9                                            | 19.9       | 19.8     | 19.9       | 19.8     | 0.0  | 21.0             | 19.9                                                     | 20.0       | 19.8     | 19.6       | 19.7     | 0.0  | 21.0             |      |
|             |        | 36               | 20           | 19.9                                            | 19.9       | 19.8     | 19.7       | 19.7     | 0.0  | 21.0             | 19.9                                                     | 19.9       | 19.8     | 19.6       | 19.7     | 0.0  | 21.0             |      |
|             |        | 36               | 39           | 19.9                                            | 19.9       | 19.8     | 19.8       | 19.7     | 0.0  | 21.0             | 19.9                                                     | 19.9       | 19.9     | 19.6       | 19.7     | 0.0  | 21.0             |      |
|             |        | 75               | 0            | 19.9                                            | 19.9       | 19.8     | 19.8       | 19.7     | 0.0  | 21.0             | 19.9                                                     | 20.0       | 19.8     | 19.6       | 19.7     | 0.0  | 21.0             |      |
|             |        | 1                | 0            | 19.8                                            | 20.1       | 19.9     | 19.7       | 19.9     | 0.0  | 21.0             | 20.0                                                     | 19.9       | 19.8     | 19.7       | 19.8     | 0.0  | 21.0             |      |
|             |        | 1                | 37           | 19.7                                            | 20.1       | 19.7     | 19.9       | 19.7     | 0.0  | 21.0             | 20.1                                                     | 20.1       | 19.8     | 19.6       | 19.6     | 0.0  | 21.0             |      |
|             | 64QAM  | 1                | 74           | 20.0                                            | 20.0       | 20.1     | 19.9       | 19.9     | 0.0  | 21.0             | 20.0                                                     | 19.9       | 19.8     | 19.9       | 19.8     | 0.0  | 21.0             |      |
|             |        | 36               | 0            | 20.0                                            | 20.4       | 20.0     | 19.8       | 19.9     | 0.0  | 21.0             | 19.9                                                     | 20.1       | 20.1     | 19.7       | 19.5     | 0.0  | 21.0             |      |
|             |        | 36               | 20           | 19.9                                            | 20.1       | 20.1     | 19.7       | 19.7     | 0.0  | 21.0             | 19.8                                                     | 20.1       | 20.1     | 19.5       | 19.6     | 0.0  | 21.0             |      |
|             |        | 36               | 39           | 19.9                                            | 19.9       | 20.1     | 19.6       | 19.5     | 0.0  | 21.0             | 19.9                                                     | 19.9       | 19.8     | 19.6       | 19.8     | 0.0  | 21.0             |      |
|             |        | 75               | 0            | 20.0                                            | 20.0       | 19.7     | 19.9       | 20.0     | 0.0  | 21.0             | 19.9                                                     | 19.9       | 19.9     | 19.6       | 19.8     | 0.0  | 21.0             |      |
|             |        | 1                | 0            | 17.8                                            | 18.2       | 18.0     | 17.8       | 17.7     | 2.0  | 19.0             | 18.2                                                     | 17.6       | 17.6     | 17.8       | 18.0     | 2.0  | 19.0             |      |
|             |        | 1                | 37           | 17.6                                            | 18.1       | 17.7     | 17.6       | 17.5     | 2.0  | 19.0             | 18.2                                                     | 17.6       | 17.4     | 17.7       | 17.6     | 2.0  | 19.0             |      |
|             |        | 1                | 74           | 17.8                                            | 17.9       | 18.0     | 17.8       | 18.0     | 2.0  | 19.0             | 18.4                                                     | 17.9       | 17.3     | 17.8       | 17.4     | 2.0  | 19.0             |      |
|             | 256QAM | 36               | 0            | 17.9                                            | 17.9       | 17.9     | 17.6       | 17.7     | 2.0  | 19.0             | 17.9                                                     | 17.9       | 17.8     | 17.6       | 17.7     | 2.0  | 19.0             |      |
|             |        | 36               | 20           | 17.9                                            | 17.9       | 17.9     | 17.6       | 17.7     | 2.0  | 19.0             | 17.8                                                     | 17.9       | 17.8     | 17.6       | 17.7     | 2.0  | 19.0             |      |
|             |        | 36               | 39           | 17.9                                            | 17.9       | 17.8     | 17.6       | 17.6     | 2.0  | 19.0             | 17.8                                                     | 17.9       | 17.8     | 17.6       | 17.6     | 2.0  | 19.0             |      |
|             |        | 75               | 0            | 17.9                                            | 17.9       | 17.8     | 17.6       | 17.7     | 2.0  | 19.0             | 17.9                                                     | 17.9       | 17.8     | 17.6       | 17.6     | 2.0  | 19.0             |      |

**LTE Band 41 Power Class 3 Measured Results (Continued)**

| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |            |          |            |          | MPR | Tune-up<br>Limit | Measured Pwr (dBm) |            |          |            |          | MPR | Tune-up<br>Limit |
|-------------|--------|------------------|--------------|--------------------|------------|----------|------------|----------|-----|------------------|--------------------|------------|----------|------------|----------|-----|------------------|
|             |        |                  |              | 39750              | 40185      | 40620    | 41055      | 41490    |     |                  | 39750              | 40185      | 40620    | 41055      | 41490    |     |                  |
|             |        |                  |              | 2506 MHz           | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz |     |                  | 2506 MHz           | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz |     |                  |
| 10 MHz      | QPSK   | 1                | 0            | 19.9               | 20.0       | 19.8     | 19.8       | 19.6     | 0.0 | 21.0             | 19.9               | 19.9       | 19.9     | 19.6       | 19.7     | 0.0 | 21.0             |
|             |        | 1                | 25           | 19.8               | 19.8       | 19.7     | 19.8       | 19.6     | 0.0 | 21.0             | 19.7               | 19.8       | 19.7     | 19.4       | 19.6     | 0.0 | 21.0             |
|             |        | 1                | 49           | 19.8               | 19.9       | 19.8     | 19.8       | 19.6     | 0.0 | 21.0             | 19.9               | 19.9       | 19.8     | 19.5       | 19.7     | 0.0 | 21.0             |
|             |        | 25               | 0            | 19.9               | 20.0       | 19.8     | 19.8       | 19.7     | 0.0 | 21.0             | 19.9               | 19.9       | 19.8     | 19.6       | 19.7     | 0.0 | 21.0             |
|             |        | 25               | 12           | 19.9               | 20.0       | 19.8     | 19.8       | 19.7     | 0.0 | 21.0             | 19.9               | 19.9       | 19.7     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 25               | 25           | 19.9               | 20.0       | 19.8     | 19.8       | 19.7     | 0.0 | 21.0             | 19.9               | 19.9       | 19.7     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 50               | 0            | 19.9               | 20.0       | 19.8     | 19.8       | 19.7     | 0.0 | 21.0             | 19.9               | 19.9       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 1                | 0            | 20.0               | 20.1       | 19.8     | 19.9       | 19.6     | 0.0 | 21.0             | 20.1               | 19.8       | 19.7     | 19.8       | 19.6     | 0.0 | 21.0             |
|             |        | 1                | 25           | 19.9               | 20.0       | 19.6     | 20.0       | 19.6     | 0.0 | 21.0             | 19.9               | 19.6       | 19.6     | 19.7       | 19.4     | 0.0 | 21.0             |
|             |        | 1                | 49           | 20.1               | 20.1       | 19.7     | 19.6       | 19.4     | 0.0 | 21.0             | 20.1               | 19.8       | 19.7     | 19.8       | 19.5     | 0.0 | 21.0             |
|             | 16QAM  | 25               | 0            | 19.9               | 20.0       | 19.8     | 19.9       | 19.7     | 0.0 | 21.0             | 19.9               | 19.9       | 19.7     | 19.6       | 19.7     | 0.0 | 21.0             |
|             |        | 25               | 12           | 19.9               | 19.9       | 19.7     | 19.9       | 19.6     | 0.0 | 21.0             | 19.9               | 19.9       | 19.7     | 19.5       | 19.6     | 0.0 | 21.0             |
|             |        | 25               | 25           | 19.9               | 20.0       | 19.8     | 19.8       | 19.7     | 0.0 | 21.0             | 19.9               | 19.9       | 19.7     | 19.5       | 19.6     | 0.0 | 21.0             |
|             |        | 50               | 0            | 19.9               | 20.0       | 19.7     | 19.8       | 19.6     | 0.0 | 21.0             | 19.9               | 19.9       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 1                | 0            | 20.0               | 19.8       | 19.7     | 19.5       | 19.5     | 0.0 | 21.0             | 19.8               | 20.0       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 1                | 25           | 19.9               | 19.8       | 19.7     | 19.4       | 19.5     | 0.0 | 21.0             | 19.7               | 20.0       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 1                | 49           | 20.0               | 19.8       | 19.7     | 19.5       | 19.5     | 0.0 | 21.0             | 19.9               | 20.0       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 25               | 0            | 19.9               | 19.8       | 19.7     | 19.5       | 19.5     | 0.0 | 21.0             | 19.9               | 20.0       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 25               | 12           | 19.9               | 19.8       | 19.7     | 19.5       | 19.5     | 0.0 | 21.0             | 19.9               | 20.0       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 25               | 25           | 19.9               | 19.8       | 19.7     | 19.5       | 19.5     | 0.0 | 21.0             | 19.8               | 20.0       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             |
|             | 256QAM | 50               | 0            | 19.8               | 19.8       | 19.7     | 19.5       | 19.5     | 0.0 | 21.0             | 19.9               | 20.0       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 1                | 0            | 17.6               | 17.8       | 17.6     | 17.5       | 17.5     | 2.0 | 19.0             | 17.9               | 17.7       | 17.7     | 17.4       | 17.5     | 2.0 | 19.0             |
|             |        | 1                | 25           | 17.5               | 17.6       | 17.5     | 17.4       | 17.5     | 2.0 | 19.0             | 17.7               | 17.6       | 17.5     | 17.3       | 17.4     | 2.0 | 19.0             |
|             |        | 1                | 49           | 17.6               | 17.7       | 17.5     | 17.4       | 17.5     | 2.0 | 19.0             | 17.8               | 17.7       | 17.6     | 17.3       | 17.5     | 2.0 | 19.0             |
|             |        | 25               | 0            | 17.9               | 17.9       | 17.8     | 17.6       | 17.6     | 2.0 | 19.0             | 17.9               | 17.9       | 17.8     | 17.6       | 17.7     | 2.0 | 19.0             |
|             |        | 25               | 12           | 17.9               | 17.9       | 17.7     | 17.6       | 17.6     | 2.0 | 19.0             | 17.9               | 17.9       | 17.8     | 17.6       | 17.6     | 2.0 | 19.0             |
|             |        | 25               | 25           | 17.9               | 17.9       | 17.7     | 17.6       | 17.6     | 2.0 | 19.0             | 17.9               | 17.9       | 17.8     | 17.6       | 17.6     | 2.0 | 19.0             |
|             |        | 50               | 0            | 17.9               | 17.9       | 17.7     | 17.5       | 17.6     | 2.0 | 19.0             | 17.9               | 17.9       | 17.7     | 17.6       | 17.6     | 2.0 | 19.0             |
|             |        |                  |              |                    |            |          |            |          |     |                  |                    |            |          |            |          |     |                  |
|             |        |                  |              |                    |            |          |            |          |     |                  |                    |            |          |            |          |     |                  |
| BW<br>(MHz) | Mode   | RB<br>Allocation | RB<br>offset | Measured Pwr (dBm) |            |          |            |          | MPR | Tune-up<br>Limit | Measured Pwr (dBm) |            |          |            |          | MPR | Tune-up<br>Limit |
|             |        |                  |              | 39750              | 40185      | 40620    | 41055      | 41490    |     |                  | 39750              | 40185      | 40620    | 41055      | 41490    |     |                  |
|             |        |                  |              | 2506 MHz           | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz |     |                  | 2506 MHz           | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz |     |                  |
| 5 MHz       | QPSK   | 1                | 0            | 19.9               | 19.9       | 19.8     | 19.6       | 19.7     | 0.0 | 21.0             | 19.9               | 19.9       | 19.8     | 19.6       | 19.7     | 0.0 | 21.0             |
|             |        | 1                | 12           | 19.7               | 19.7       | 19.7     | 19.6       | 19.7     | 0.0 | 21.0             | 19.7               | 19.8       | 19.6     | 19.5       | 19.7     | 0.0 | 21.0             |
|             |        | 1                | 24           | 19.8               | 19.8       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             | 19.8               | 19.9       | 19.7     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 12               | 0            | 19.9               | 19.9       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             | 19.8               | 19.9       | 19.7     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 12               | 7            | 19.8               | 19.9       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             | 19.8               | 19.8       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 12               | 13           | 19.9               | 19.9       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             | 19.8               | 19.8       | 19.7     | 19.6       | 19.6     | 0.0 | 21.0             |
|             |        | 25               | 0            | 19.9               | 19.9       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             | 19.8               | 19.9       | 19.8     | 19.6       | 19.6     | 0.0 | 21.0             |
|             | 16QAM  | 1                | 0            | 19.7               | 20.0       | 19.8     | 19.6       | 19.8     | 0.0 | 21.0             | 19.9               | 19.7       | 19.8     | 19.7       | 19.5     | 0.0 | 21.0             |
|             |        | 1                | 12           | 19.6               | 19.7       | 19.6     | 19.5       | 19.6     | 0.0 | 21.0             | 19.8               | 19.5       | 19.5     | 19.6       | 19.5     | 0.0 | 21.0             |
|             |        | 1                | 24           | 19.8               | 20.0       | 19.7     | 19.6       | 19.8     | 0.0 | 21.0             | 19.9               | 19.8       | 19.8     | 19.7       | 19.6     | 0.0 | 21.0             |
|             |        | 12               | 0            | 19.9               | 19.9       | 19.8     | 19.5       | 19.6     | 0.0 | 21.0             | 19.8               | 19.9       | 19.8     | 19.5       | 19.6     | 0.0 | 21.0             |
|             |        | 12               | 7            | 19.9               | 19.9       | 19.8     | 19.5       | 19.6     | 0.0 | 21.0             | 19.8               | 19.8       | 19.8     | 19.5       | 19.6     | 0.0 | 21.0             |
|             |        | 12               | 13           | 19.9               | 19.9       | 19.7     | 19.6       | 19.6     | 0.0 | 21.0             | 19.8               | 19.9       | 19.8     | 19.5       | 19.6     | 0.0 | 21.0             |
|             |        | 25               | 0            | 19.9               | 19.9       | 19.8     | 19.5       | 19.6     | 0.0 | 21.0             | 19.9               | 19.9       | 19.7     | 19.6       | 19.6     | 0.0 | 21.0             |
|             | 64QAM  | 1                | 0            | 19.8               | 20.1       | 19.7     | 19.5       | 19.6     | 0.0 | 21.0             | 19.9               | 19.8       | 19.9     | 19.6       | 19.7     | 0.0 | 21.0             |
|             |        | 1                | 12           | 19.8               | 20.1       | 19.7     | 19.5       | 19.7     | 0.0 | 21.0             | 19.8               | 19.8       | 19.9     | 19.5       | 19.7     | 0.0 | 21.0             |
|             |        | 1                | 24           | 19.8               | 20.1       | 19.7     | 19.5       | 19.5     | 0.0 | 21.0             | 19.9               | 19.7       | 19.9     | 19.6       | 19.7     | 0.0 | 21.0             |
|             |        | 12               | 0            | 19.8               | 20.1       | 19.8     | 19.5       | 19.6     | 0.0 | 21.0             | 19.9               | 19.7       | 19.9     | 19.6       | 19.7     | 0.0 | 21.0             |
|             |        | 12               | 7            | 19.8               | 20.1       | 19.7     | 19.5       | 19.5     | 0.0 | 21.0             | 19.9               | 19.8       | 19.9     | 19.5       | 19.7     | 0.0 | 21.0             |
|             |        | 12               | 13           | 19.7               | 20.0       | 19.7     | 19.5       | 19.5     | 0.0 | 21.0             | 19.9               | 19.8       | 19.9     | 19.6       | 19.7     | 0.0 | 21.0             |
|             |        | 25               | 0            | 19.8               | 20.1       | 19.7     | 19.5       | 19.5     | 0.0 | 21.0             | 19.9               | 19.7       | 19.9     | 19.5       | 19.7     | 0.0 | 21.0             |
|             | 256QAM | 1                | 0            | 18.0               | 18.2       | 17.9     | 17.7       | 17.8     | 2.0 | 19.0             | 18.0               | 18.0       | 17.9     | 17.7       | 17.9     | 2.0 | 19.0             |
|             |        | 1                | 12           | 17.8               | 18.1       | 17.9     | 17.8       | 18.0     | 2.0 | 19.0             | 17.8               | 17.9       | 17.7     | 17.6       | 17.8     | 2.0 | 19.0             |
|             |        | 1                | 24           | 18.1               | 18.2       | 17.9     | 17.7       | 17.8     | 2.0 | 19.0             | 18.0               | 18.0       | 17.8     | 17.7       | 17.9     | 2.0 | 19.0             |
|             |        | 12               | 0            | 17.9               | 17.9       | 17.8     | 17.6       | 17.6     | 2.0 | 19.0             | 17.9               | 17.9       | 17.8     | 17.6       | 17.6     | 2.0 | 19.0             |
|             |        | 12               | 7            | 17.9               | 17.9       | 17.8     | 17.5       | 17.6     | 2.0 | 19.0             | 17.9               | 17.9       | 17.8     | 17.6       | 17.6     | 2.0 | 19.0             |
|             |        | 12               | 13           | 17.8               | 17.9       | 17.7     | 17.5       | 17.6     | 2.0 | 19.0             | 17.8               | 17.8       | 17.8     | 17.5       | 17.6     | 2.0 | 19.0             |
|             |        | 25               | 0            | 17.9               | 17.9       | 17.7     | 17.5       | 17.6     | 2.0 | 19.0             | 17.9               | 17.8       | 17.7     | 17.6       | 17.6     | 2.0 | 19.0             |
|             |        |                  |              |                    |            |          |            |          |     |                  |                    |            |          |            |          |     |                  |

### 9.3.1. LTE Rel. 10 Carrier Aggregation

#### LTE Carrier Aggregation Down Link Combinations:

The DL CA power measurement conditions for various CC's combinations were determined according to LTE DL CA SAR Test Exclusion guidance in TCB workshop note (April 2018). Only yellow highlighted cells need power measurement. The following power measurements were performed with a single carrier uplink; CA for this particular project only supports one (1) uplink and up to four (4) downlinks.

#### LTE Release 10 Carrier Aggregation

| Index   | 2CC     | Restriction  | Completely Covered by Measurement Supersrt | Reverse |
|---------|---------|--------------|--------------------------------------------|---------|
| 2CC #1  | 2A-2A   |              |                                            |         |
| 2CC #2  | 2C      |              |                                            |         |
| 2CC #3  | 2A-4A   |              | 3CC #1                                     | O       |
| 2CC #4  | 2A-5A   |              | 3CC #1                                     | O       |
| 2CC #5  | 2A-12A  |              |                                            | O       |
| 2CC #6  | 2A-13A  |              | 3CC #2                                     | O       |
| 2CC #7  | 2A-17A  | B17 SCC only |                                            | X       |
| 2CC #8  | 2A-66A  |              |                                            | O       |
| 2CC #9  | 4A-4A   |              | 3CC #3                                     |         |
| 2CC #10 | 4A-5A   |              | 3CC #1                                     | O       |
| 2CC #11 | 4A-12A  |              | 3CC #3                                     | O       |
| 2CC #12 | 4A-13A  |              | 3CC #2                                     | O       |
| 2CC #13 | 4A-17A  | B17 SCC only | 3CC #4                                     | X       |
| 2CC #14 | 5A-41A  |              |                                            | O       |
| 2CC #15 | 5A-66A  |              | 3CC #5                                     | O       |
| 2CC #16 | 12A-66A |              | 3CC #6                                     | O       |
| 2CC #17 | 26A-41A |              |                                            | O       |
| 2CC #18 | 41A-41A |              |                                            |         |
| 2CC #19 | 41C     |              | 3CC #8                                     |         |
| 2CC #20 | 66A-66A |              | 3CC #5                                     |         |
| 2CC #21 | 66B     |              |                                            |         |
| 2CC #22 | 66C     |              |                                            |         |

| Index   | 3CC         | Restriction  | Completely Covered by Measurement Supersrt | Reverse |
|---------|-------------|--------------|--------------------------------------------|---------|
| 3CC #1  | 2A-4A-5A    |              |                                            | O       |
| 3CC #2  | 2A-4A-13A   |              |                                            | O       |
| 3CC #3  | 4A-4A-12A   |              |                                            | O       |
| 3CC #4  | 4A-4A-17A   | B17 SCC only |                                            | X       |
| 3CC #5  | 5A-66A-66A  |              |                                            | O       |
| 3CC #6  | 12A-66A-66A |              |                                            | O       |
| 3CC #7  | 26A-41C     |              |                                            | O       |
| 3CC #8  | 41A-41C     |              |                                            | O       |
| 3CC #9  | 41D         |              | 4CC #2                                     |         |
| 3CC #10 |             |              |                                            |         |
| 3CC #11 |             |              |                                            |         |
| 3CC #12 |             |              |                                            |         |

| Index  | 4CC     | Restriction | Completely Covered by Measurement Supersrt | Reverse |
|--------|---------|-------------|--------------------------------------------|---------|
| 4CC #1 | 41C-41C |             |                                            |         |
| 4CC #2 | 41A-41D |             |                                            | O       |
| 4CC #3 | 41E     |             |                                            |         |

#### **Note:**

Only yellow highlight cells need power measurement according to LTE DL CA SAR test Exclusion in TCB workshop (April.2018).

**LTE Release 10 Carrier Aggregation with 4x4 MIMO**

| Index  | 2CC   | Restriction | Completely Covered by Measurement Supersrt | Reverse |
|--------|-------|-------------|--------------------------------------------|---------|
| 2CC #1 | [66B] |             |                                            |         |
| 2CC #2 | [66C] |             |                                            |         |

| Index  | 3CC           | Restriction  | Completely Covered by Measurement Supersrt | Reverse |
|--------|---------------|--------------|--------------------------------------------|---------|
| 3CC #1 | [4A]-[4A]-12A |              |                                            | O       |
| 3CC #2 | [4A]-[4A]-17A | B17 SCC only |                                            | X       |

[\*] is 4X4 MIMO configuration.

**Note:**

Only yellow highlight cells need power measurement according to LTE DL CA SAR test Exclusion in TCB workshop (April.2018).

**1. Single Carrier 4x4 Downlink MIMO**

| LTE Band | Bandwidth (MHz) | Channel | Frequency (MHz) | Modulation | RB/Offset | LTE Rel 8 Tx. Power [dBm] | 4x4 DL MIMO LTE Rel 8 Tx. Power | Delta |
|----------|-----------------|---------|-----------------|------------|-----------|---------------------------|---------------------------------|-------|
| Band 4   | 20              | 20175   | 1732.5          | QPSK       | 1/0       | 22.3                      | 22.3                            | 0.04  |
| Band 66  | 20              | 132072  | 1720            | QPSK       | 1/0       | 22.1                      | 22.1                            | -0.02 |

**Note:**

- According to LTE Test Conditions in TCB workshop (May, 2017), SAR is excluded for LTE downlink 4x4 MIMO operation when uplink output with DL MIMO does not exceed highest uplink output power configuration without DL MIMO by more than a 1/4 dB. And for DL MIMO with carrier aggregation, the same SAR test exclusion procedure is considered.

**2. DL CA output power results**

| E-UTRA CA<br>configuration<br>(BCS) | Bands |      |      |      | UL   |             |         |                |           | DL          |         |                |             |         |                |             |         |                |             |         |                | LTE Rel 8<br>Tx. Power<br>[dBm] | LTE Rel 10<br>Tx. Power<br>[dBm] | Delta |
|-------------------------------------|-------|------|------|------|------|-------------|---------|----------------|-----------|-------------|---------|----------------|-------------|---------|----------------|-------------|---------|----------------|-------------|---------|----------------|---------------------------------|----------------------------------|-------|
|                                     | PCC   | SCC1 | SCC2 | SCC3 | PCC  |             |         |                |           | PCC         |         |                | SCC1        |         |                | SCC2        |         |                | SCC3        |         |                |                                 |                                  |       |
|                                     | 1st   | 2nd  | 3rd  | 4th  | Mode | BW<br>(MHz) | Channel | Freq.<br>(MHz) | RB/Offset | BW<br>(MHz) | Channel | Freq.<br>(MHz) | BW<br>(MHz) | Channel | Freq.<br>(MHz) | BW<br>(MHz) | Channel | Freq.<br>(MHz) | BW<br>(MHz) | Channel | Freq.<br>(MHz) |                                 |                                  |       |
| 2A-12A                              | 2A    | 12A  |      |      | QPSK | 20          | 18700   | 1860           | 1/0       | 20          | 700     | 1940           | 10          | 5095    | 737.5          |             |         |                |             |         |                | 21.8                            | 21.8                             | -0.03 |
|                                     | 12A   | 2A   |      |      | QPSK | 10          | 23095   | 707.5          | 1/0       | 10          | 5095    | 737.5          | 20          | 900     | 1960           |             |         |                |             |         |                | 24.1                            | 24.1                             | -0.07 |
| 2A-17A                              | 2A    | 17A  |      |      | QPSK | 10          | 18650   | 1855           | 1/49      | 10          | 650     | 1935           | 10          | 5790    | 740            |             |         |                |             |         |                | 21.8                            | 21.8                             | -0.08 |
|                                     | 2A    | 66A  |      |      | QPSK | 20          | 18700   | 1860           | 1/0       | 20          | 700     | 1940           | 20          | 66786   | 2145           |             |         |                |             |         |                | 21.8                            | 21.7                             | -0.07 |
| 2A-66A                              | 66A   | 2A   |      |      | QPSK | 20          | 132072  | 1720           | 1/0       | 20          | 66536   | 2120           | 20          | 900     | 1960           |             |         |                |             |         |                | 22.1                            | 22.0                             | -0.12 |
|                                     | 5A    | 41A  |      |      | QPSK | 10          | 20525   | 836.5          | 1/0       | 10          | 2525    | 881.5          | 20          | 40620   | 2593           |             |         |                |             |         |                | 24.4                            | 24.4                             | -0.02 |
| 5A-41A                              | 41A   | 5A   |      |      | QPSK | 20          | 40185   | 2549.5         | 1/0       | 20          | 40185   | 2549.5         | 10          | 2525    | 881.5          |             |         |                |             |         |                | 22.8                            | 22.8                             | -0.04 |
|                                     | 26A   | 41A  |      |      | QPSK | 15          | 26865   | 831.5          | 1/0       | 15          | 8865    | 876.5          | 20          | 40620   | 2593           |             |         |                |             |         |                | 24.3                            | 24.3                             | 0.01  |
| 26A-41A                             | 41A   | 26A  |      |      | QPSK | 20          | 40185   | 2549.5         | 1/0       | 20          | 40185   | 2549.5         | 15          | 8865    | 876.5          |             |         |                |             |         |                | 22.8                            | 22.8                             | -0.03 |
|                                     | 2A    | 4A   | 5A   |      | QPSK | 20          | 18700   | 1860           | 1/0       | 20          | 700     | 1940           | 20          | 2175    | 2132.5         | 10          | 2525    | 881.5          |             |         |                | 21.8                            | 21.8                             | -0.03 |
| 2A-4A-5A                            | 4A    | 2A   | 5A   |      | QPSK | 20          | 20175   | 1732.5         | 1/0       | 20          | 2175    | 2132.5         | 20          | 900     | 1960           | 10          | 2525    | 881.5          |             |         |                | 22.3                            | 22.2                             | -0.05 |
|                                     | 5A    | 2A   | 4A   |      | QPSK | 10          | 20525   | 836.5          | 1/0       | 10          | 2525    | 881.5          | 20          | 900     | 1960           | 20          | 2175    | 2132.5         |             |         |                | 24.4                            | 24.3                             | -0.04 |
| 2A-4A-13A                           | 2A    | 4A   | 13A  |      | QPSK | 20          | 18700   | 1860           | 1/0       | 20          | 700     | 1940           | 20          | 2175    | 2132.5         | 10          | 5230    | 751            |             |         |                | 21.8                            | 21.7                             | -0.05 |
|                                     | 4A    | 2A   | 13A  |      | QPSK | 20          | 20175   | 1732.5         | 1/0       | 20          | 2175    | 2132.5         | 20          | 900     | 1960           | 10          | 5230    | 751            |             |         |                | 22.3                            | 22.3                             | -0.01 |
| 13A-2A-4A                           | 13A   | 2A   | 4A   |      | QPSK | 10          | 23230   | 782            | 1/49      | 10          | 5230    | 751            | 20          | 900     | 1960           | 20          | 2175    | 2132.5         |             |         |                | 24.1                            | 24.1                             | -0.01 |
|                                     | 4A    | 4A   | 12A  |      | QPSK | 20          | 20050   | 1720           | 1/0       | 20          | 2050    | 2120           | 20          | 2300    | 2145           | 10          | 5095    | 737.5          |             |         |                | 22.2                            | 22.3                             | 0.08  |
| 4A-4A-12A                           | 12A   | 4A   | 4A   |      | QPSK | 10          | 23095   | 707.5          | 1/0       | 10          | 5095    | 737.5          | 20          | 2050    | 2120           | 20          | 2300    | 2145           |             |         |                | 24.1                            | 24.1                             | -0.03 |
|                                     | 4A    | 4A   | 17A  |      | QPSK | 20          | 20050   | 1720           | 1/0       | 20          | 2050    | 2120           | 20          | 2300    | 2145           | 10          | 5790    | 740            |             |         |                | 22.2                            | 22.3                             | 0.07  |
| 4A-4A-17A                           | 5A    | 66A  | 66A  |      | QPSK | 10          | 20525   | 836.5          | 1/0       | 10          | 2525    | 881.5          | 20          | 66536   | 2120           | 20          | 67036   | 2170           |             |         |                | 24.4                            | 24.3                             | -0.03 |
|                                     | 66A   | 5A   | 66A  |      | QPSK | 20          | 132072  | 1720           | 1/0       | 20          | 66536   | 2120           | 10          | 2525    | 881.5          | 20          | 67036   | 2170           |             |         |                | 22.1                            | 22.1                             | -0.07 |
| 12A-66A-66A                         | 12A   | 66A  | 66A  |      | QPSK | 10          | 23095   | 707.5          | 1/0       | 10          | 5095    | 737.5          | 20          | 66536   | 2120           | 20          | 67036   | 2170           |             |         |                | 24.1                            | 24.0                             | -0.11 |
|                                     | 66A   | 66A  | 12A  |      | QPSK | 20          | 132072  | 1720           | 1/0       | 20          | 66536   | 2120           | 20          | 67036   | 2170           | 10          | 5095    | 737.5          |             |         |                | 24.3                            | 24.2                             | -0.08 |
| 26A-41C                             | 26A   | 41C  | 41C  |      | QPSK | 15          | 26865   | 831.5          | 1/0       | 15          | 8865    | 876.5          | 20          | 40620   | 2593           | 20          | 40818   | 2612.8         |             |         |                | 24.3                            | 24.3                             | 0.04  |
|                                     | 41C   | 41C  | 26A  |      | QPSK | 20          | 40185   | 2549.5         | 1/0       | 20          | 40185   | 2549.5         | 20          | 40383   | 2569.3         | 15          | 8865    | 876.5          |             |         |                | 22.8                            | 22.8                             | -0.04 |
| 2A-2A                               | 2A    | 2A   |      |      | QPSK | 20          | 18700   | 1860           | 1/0       | 20          | 700     | 1940           | 20          | 1100    | 1980           |             |         |                |             |         |                | 21.8                            | 21.7                             | -0.07 |
| 41A-41A                             | 41A   | 41A  |      |      | QPSK | 20          | 40185   | 2549.5         | 1/0       | 20          | 40185   | 2549.5         | 20          | 2680    | 41490          |             |         |                |             |         |                | 22.8                            | 22.8                             | -0.02 |
| 41A-41C                             | 41A   | 41C  | 41C  |      | QPSK | 20          | 40185   | 2549.5         | 1/0       | 20          | 40185   | 2549.5         | 20          | 2680    | 41490          | 20          | 41292   | 2660.2         |             |         |                | 22.8                            | 22.8                             | 0.00  |
|                                     | 41C   | 41C  | 41A  |      | QPSK | 20          | 40185   | 2549.5         | 1/0       | 20          | 40185   | 2549.5         | 20          | 2569.3  | 40383          | 20          | 40620   | 2593           |             |         |                | 22.8                            | 22.8                             | -0.06 |
| 41C-41C                             | 41C   | 41C  | 41C  | 41C  | QPSK | 20          | 40185   | 2549.5         | 1/0       | 20          | 40185   | 2549.5         | 20          | 2569.3  | 40383          | 20          | 40620   | 2593           | 20          | 40818   | 2612.8         | 22.8                            | 22.8                             | -0.02 |
| 41A-41D                             | 41A   | 41D  | 41D  | 41D  | QPSK | 20          | 40185   | 2549.5         | 1/0       | 20          | 40185   | 2549.5         | 20          | 2680    | 41490          | 20          | 41292   | 2660.2         | 20          | 41094   | 2640.4         | 22.8                            | 22.8                             | -0.04 |
|                                     | 41D   | 41D  | 41D  | 41A  | QPSK | 20          | 40185   | 2549.5         | 1/0       | 20          | 40185   | 2549.5         | 20          | 2569.3  | 40383          | 20          | 40581   | 2589.1         | 20          | 41490   | 2680           | 22.8                            | 22.8                             | -0.06 |
| 66B                                 | 66B   | 66B  |      |      | QPSK | 15          | 132047  | 1717.5         | 1/0       | 15          | 66511   | 2117.5         | 5           | 66604   | 2126.8         |             |         |                |             |         |                | 22.1                            | 22.1                             | -0.02 |
| 66C                                 | 66C   | 66C  |      |      | QPSK | 20          | 132072  | 1720           | 1/0       | 20          | 66536   | 2120           | 20          | 66734   | 2139.8         |             |         |                |             |         |                | 22.1                            | 22.1                             | -0.04 |
| 41E                                 | 41E   | 41E  | 41E  | 41E  | QPSK | 20          | 40185   | 2549.5         | 1/0       | 20          | 40185   | 2549.5         | 20          | 40383   | 2569.3         | 20          | 40581   | 2589.1         | 20          | 40779   | 2608.9         | 22.8                            | 22.8                             | -0.01 |

**Note:**

- Per KDB 941225 D05A LTE Rel. 10 KDB Inquiry Sheet: SAR is excluded for Carrier Aggregation when measured power does not exceed LTE Release 8 by more than a 1/4 dB.
- When the same frequency band is used for both contiguous and non-contiguous in DL CA Intra band, power was measured using the configuration with the largest aggregated bandwidth and maximum output power among the contiguous and non-contiguous in DL CA Intra band configurations

**3. DL CA with downlink 4x4 MIMO output power results**

| E-UTRA CA configuration (BCS) | Bands |       |      | UL   |          |         |             |           | DL       |         |             |          |         |             |          |         |             | LTE Rel 8 Tx. Power [dBm] | LTE Rel 10 Tx. Power [dBm] | Delta |
|-------------------------------|-------|-------|------|------|----------|---------|-------------|-----------|----------|---------|-------------|----------|---------|-------------|----------|---------|-------------|---------------------------|----------------------------|-------|
|                               | PCC   | SCC1  | SCC2 | PCC  |          |         |             | PCC       |          |         | SCC1        |          |         | SCC2        |          |         |             |                           |                            |       |
|                               | 1st   | 2nd   | 3rd  | Mode | BW (MHz) | Channel | Freq. (MHz) | RB/Offset | BW (MHz) | Channel | Freq. (MHz) | BW (MHz) | Channel | Freq. (MHz) | BW (MHz) | Channel | Freq. (MHz) |                           |                            |       |
| [4A]-[4A]-12A                 | [4A]  | [4A]  | 12A  | QPSK | 20       | 20050   | 1720        | 1/0       | 20       | 2050    | 2120        | 20       | 2300    | 2145        | 10       | 5095    | 737.5       | 22.3                      | 22.4                       | 0.12  |
|                               | 12A   | [4A]  | [4A] | QPSK | 10       | 23095   | 707.5       | 1/0       | 10       | 5095    | 737.5       | 20       | 2050    | 2120        | 20       | 2300    | 2145        | 24.1                      | 24.2                       | 0.10  |
| [4A]-[4A]-17A                 | [4A]  | [4A]  | 17A  | QPSK | 20       | 20050   | 1720        | 1/0       | 20       | 2050    | 2120        | 20       | 2300    | 2145        | 10       | 5790    | 740         | 22.3                      | 22.4                       | 0.14  |
| [66B]                         | [66B] | [66B] |      | QPSK | 15       | 132047  | 1717.5      | 1/0       | 15       | 66511   | 2117.5      | 5        | 66604   | 2126.8      |          |         |             | 22.1                      | 22.2                       | 0.10  |
| [66C]                         | [66C] | [66C] |      | QPSK | 20       | 132072  | 1720        | 1/0       | 20       | 66536   | 2120        | 20       | 66734   | 2139.8      |          |         |             | 22.1                      | 22.3                       | 0.14  |

**Note:**

1. Per KDB 941225 D05A LTE Rel. 10 KDB Inquiry Sheet: SAR is excluded for Carrier Aggregation when measured power does not exceed LTE Release 8 by more than a 1/4 dB.
2. When the same frequency band is used for both contiguous and non-contiguous in DL CA Intra band, power was measured using the configuration with the largest aggregated bandwidth and maximum output power among the contiguous and non-contiguous in DL CA Intra band configurations

## 9.4. Wi-Fi 2.4 GHz (DTS Band)

When the RCV is active in a held-to-ear user scenario, the output power level is reduced. The maximum allowed output powers in all conditions are included in the maximum power document.

Refer to Operational Description for WLAN explanation.

### Measured Results

| Antenna               | Mode               | Data Rate | Ch # | Freq.<br>(MHz) | Normal WLAN mode        |                             |                      |                         |                             |                      |     |
|-----------------------|--------------------|-----------|------|----------------|-------------------------|-----------------------------|----------------------|-------------------------|-----------------------------|----------------------|-----|
|                       |                    |           |      |                | Max.Average Power       |                             |                      | Reduced Average Power   |                             |                      |     |
|                       |                    |           |      |                | Meas. Avg Pw r<br>(dBm) | Max. Tune-up<br>Limit (dBm) | SAR Test<br>(Yes/No) | Meas. Avg Pw r<br>(dBm) | Max. Tune-up<br>Limit (dBm) | SAR Test<br>(Yes/No) |     |
| WiFi<br>SISO<br>Ant.1 | 802.11b            | 1 Mbps    | 1    | 2412.0         | 20.3                    | 21.0                        | Yes                  | 16.3                    | 17.0                        | Yes                  |     |
|                       |                    |           | 6    | 2437.0         | 20.7                    |                             |                      | 16.7                    |                             |                      |     |
|                       |                    |           | 11   | 2462.0         | 20.5                    |                             |                      | 16.4                    |                             |                      |     |
|                       |                    |           | 12   | 2467.0         | 9.1                     | 10.0                        | No                   |                         |                             |                      |     |
|                       |                    |           | 13   | 2472.0         | 4.0                     |                             |                      |                         |                             |                      |     |
|                       | 802.11g            | 6 Mbps    | 1    | 2412.0         | Not Required            | 17.0                        | No                   | Not Required            | 17.0                        | No                   |     |
|                       |                    |           | 6    | 2437.0         |                         | 18.0                        |                      |                         |                             |                      |     |
|                       |                    |           | 11   | 2462.0         |                         | 17.0                        |                      |                         |                             |                      |     |
|                       |                    |           | 12   | 2467.0         |                         | 10.0                        |                      |                         |                             |                      |     |
|                       |                    |           | 13   | 2472.0         |                         | 5.0                         |                      |                         |                             |                      |     |
|                       | 802.11n<br>(HT20)  | 6.5 Mbps  | 1    | 2412.0         | Not Required            | 16.0                        | No                   | Not Required            | 16.0                        | No                   |     |
|                       |                    |           | 6    | 2437.0         |                         | 18.0                        |                      |                         | 17.0                        |                      |     |
|                       |                    |           | 11   | 2462.0         |                         | 16.0                        |                      |                         | 16.0                        |                      |     |
|                       |                    |           | 12   | 2467.0         |                         | 10.0                        |                      |                         |                             |                      |     |
|                       |                    |           | 13   | 2472.0         |                         | 5.0                         |                      |                         |                             |                      |     |
|                       | 802.11ax<br>(HE20) | 7.3 Mbps  | 1    | 2412.0         | Not Required            | 15.0                        | No                   | Not Required            | 15.0                        | No                   |     |
|                       |                    |           | 6    | 2437.0         |                         | 16.0                        |                      |                         | 16.0                        |                      |     |
|                       |                    |           | 11   | 2462.0         |                         |                             |                      |                         |                             |                      |     |
|                       |                    |           | 12   | 2467.0         |                         |                             |                      |                         |                             |                      |     |
|                       |                    |           | 13   | 2472.0         |                         |                             |                      |                         |                             |                      |     |
| WiFi<br>SISO<br>Ant.2 | 802.11b            | 1 Mbps    | 1    | 2412.0         | 20.2                    | 21.0                        | Yes                  | 15.7                    | 17.0                        | Yes                  |     |
|                       |                    |           | 6    | 2437.0         | 20.4                    |                             |                      | 15.9                    |                             |                      |     |
|                       |                    |           | 11   | 2462.0         | 20.3                    |                             |                      | 15.7                    |                             |                      |     |
|                       |                    |           | 12   | 2467.0         | 9.9                     | 10.0                        | No                   |                         |                             |                      |     |
|                       |                    |           | 13   | 2472.0         | 4.1                     |                             |                      |                         |                             |                      | 5.0 |
|                       | 802.11g            | 6 Mbps    | 1    | 2412.0         | Not Required            | 17.0                        | No                   | Not Required            | 17.0                        | No                   |     |
|                       |                    |           | 6    | 2437.0         |                         | 18.0                        |                      |                         |                             |                      |     |
|                       |                    |           | 11   | 2462.0         |                         | 17.0                        |                      |                         |                             |                      |     |
|                       |                    |           | 12   | 2467.0         |                         | 10.0                        |                      |                         |                             |                      |     |
|                       |                    |           | 13   | 2472.0         |                         | 5.0                         |                      |                         |                             |                      |     |
|                       | 802.11n<br>(HT20)  | 6.5 Mbps  | 1    | 2412.0         | Not Required            | 16.0                        | No                   | Not Required            | 16.0                        | No                   |     |
|                       |                    |           | 6    | 2437.0         |                         | 18.0                        |                      |                         | 17.0                        |                      |     |
|                       |                    |           | 11   | 2462.0         |                         | 16.0                        |                      |                         | 16.0                        |                      |     |
|                       |                    |           | 12   | 2467.0         |                         | 10.0                        |                      |                         |                             |                      |     |
|                       |                    |           | 13   | 2472.0         |                         | 5.0                         |                      |                         |                             |                      |     |
|                       | 802.11ax<br>(HE20) | 7.3 Mbps  | 1    | 2412.0         | Not Required            | 15.0                        | No                   | Not Required            | 15.0                        | No                   |     |
|                       |                    |           | 6    | 2437.0         |                         | 16.0                        |                      |                         | 16.0                        |                      |     |
|                       |                    |           | 11   | 2462.0         |                         |                             |                      |                         |                             |                      |     |
|                       |                    |           | 12   | 2467.0         |                         |                             |                      |                         |                             |                      |     |
|                       |                    |           | 13   | 2472.0         |                         |                             |                      |                         |                             |                      |     |

### Note(s):

- SAR is not required for 802.11g/n modes when the adjusted SAR for 802.11b is < 1.2 W/kg.
- For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11n/g/ax mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.
- Additionally, SAR is not required for Channels 12 and 13 because the tune-up limit and the measured output power for these two channels are no greater than those for the default test channels. Refer to §6.3.

**Measured Results of RSDB operation**

| Antenna               | Mode               | Data Rate | Ch # | Freq.<br>(MHz) | RSDB WLAN mode         |                             |                      |
|-----------------------|--------------------|-----------|------|----------------|------------------------|-----------------------------|----------------------|
|                       |                    |           |      |                | Max. Averde Power      |                             |                      |
|                       |                    |           |      |                | Meas. Avg Pwr<br>(dBm) | Max. Tune-up<br>Limit (dBm) | SAR Test<br>(Yes/No) |
| WiFi<br>SISO<br>Ant.1 | 802.11b            | 1 Mbps    | 1    | 2412.0         | 16.3                   | 17.0                        | Yes                  |
|                       |                    |           | 6    | 2437.0         | 16.7                   |                             |                      |
|                       |                    |           | 11   | 2462.0         | 16.4                   |                             |                      |
|                       |                    |           | 12   | 2467.0         | 9.1                    | 10.0                        | No                   |
|                       |                    |           | 13   | 2472.0         | 4.0                    | 5.0                         |                      |
|                       | 802.11g            | 6 Mbps    | 1    | 2412.0         | Not Required           | 17.0                        | No                   |
|                       |                    |           | 6    | 2437.0         |                        | 10.0                        |                      |
|                       |                    |           | 11   | 2462.0         |                        | 5.0                         |                      |
|                       |                    |           | 12   | 2467.0         |                        | 5.0                         |                      |
|                       |                    |           | 13   | 2472.0         |                        | 5.0                         |                      |
|                       | 802.11n<br>(HT20)  | 6.5 Mbps  | 1    | 2412.0         | Not Required           | 16.0                        | No                   |
|                       |                    |           | 6    | 2437.0         |                        | 17.0                        |                      |
|                       |                    |           | 11   | 2462.0         |                        | 16.0                        |                      |
|                       |                    |           | 12   | 2467.0         |                        | 10.0                        |                      |
|                       |                    |           | 13   | 2472.0         |                        | 5.0                         |                      |
|                       | 802.11ax<br>(HE20) | 7.3 Mbps  | 1    | 2412.0         | Not Required           | 15.0                        | No                   |
|                       |                    |           | 6    | 2437.0         |                        | 16.0                        |                      |
|                       |                    |           | 11   | 2462.0         |                        | 10.0                        |                      |
|                       |                    |           | 12   | 2467.0         |                        | 5.0                         |                      |
|                       |                    |           | 13   | 2472.0         |                        | 5.0                         |                      |
| WiFi<br>SISO<br>Ant.2 | 802.11b            | 1 Mbps    | 1    | 2412.0         | 15.7                   | 17.0                        | Yes                  |
|                       |                    |           | 6    | 2437.0         | 15.9                   |                             |                      |
|                       |                    |           | 11   | 2462.0         | 15.7                   |                             |                      |
|                       |                    |           | 12   | 2467.0         | 9.9                    | 10.0                        | No                   |
|                       |                    |           | 13   | 2472.0         | 4.1                    | 5.0                         |                      |
|                       | 802.11g            | 6 Mbps    | 1    | 2412.0         | Not Required           | 17.0                        | No                   |
|                       |                    |           | 6    | 2437.0         |                        | 10.0                        |                      |
|                       |                    |           | 11   | 2462.0         |                        | 5.0                         |                      |
|                       |                    |           | 12   | 2467.0         |                        | 5.0                         |                      |
|                       |                    |           | 13   | 2472.0         |                        | 5.0                         |                      |
|                       | 802.11n<br>(HT20)  | 6.5 Mbps  | 1    | 2412.0         | Not Required           | 16.0                        | No                   |
|                       |                    |           | 6    | 2437.0         |                        | 17.0                        |                      |
|                       |                    |           | 11   | 2462.0         |                        | 16.0                        |                      |
|                       |                    |           | 12   | 2467.0         |                        | 10.0                        |                      |
|                       |                    |           | 13   | 2472.0         |                        | 5.0                         |                      |
|                       | 802.11ax<br>(HE20) | 7.3 Mbps  | 1    | 2412.0         | Not Required           | 15.0                        | No                   |
|                       |                    |           | 6    | 2437.0         |                        | 16.0                        |                      |
|                       |                    |           | 11   | 2462.0         |                        | 10.0                        |                      |
|                       |                    |           | 12   | 2467.0         |                        | 5.0                         |                      |
|                       |                    |           | 13   | 2472.0         |                        | 5.0                         |                      |
| WiFi<br>MIMO<br>Ant.1 | 802.11g            | 6 Mbps    | 1    | 2412.0         | 14.1                   | 15.0                        | Yes                  |
|                       |                    |           | 6    | 2437.0         | 14.8                   | 16.0                        |                      |
|                       |                    |           | 11   | 2462.0         | 15.5                   |                             |                      |
|                       |                    |           | 12   | 2467.0         | 8.9                    | 10.0                        | No                   |
|                       |                    |           | 13   | 2472.0         | 4.0                    | 5.0                         |                      |
|                       | 802.11n<br>(HT20)  | 6.5 Mbps  | 1    | 2412.0         | Not Required           | 15.0                        | No                   |
|                       |                    |           | 6    | 2437.0         |                        | 16.0                        |                      |
|                       |                    |           | 11   | 2462.0         |                        | 15.0                        |                      |
|                       |                    |           | 12   | 2467.0         |                        | 10.0                        |                      |
|                       |                    |           | 13   | 2472.0         |                        | 5.0                         |                      |
|                       | 802.11ax<br>(HE20) | 7.3 Mbps  | 1    | 2412.0         | Not Required           | 12.0                        | No                   |
|                       |                    |           | 6    | 2437.0         |                        | 13.0                        |                      |
|                       |                    |           | 11   | 2462.0         |                        | 10.0                        |                      |
|                       |                    |           | 12   | 2467.0         |                        | 5.0                         |                      |
|                       |                    |           | 13   | 2472.0         |                        | 5.0                         |                      |
| WiFi<br>MIMO<br>Ant.2 | 802.11g            | 6 Mbps    | 1    | 2412.0         | 13.6                   | 15.0                        | Yes                  |
|                       |                    |           | 6    | 2437.0         | 14.7                   | 16.0                        |                      |
|                       |                    |           | 11   | 2462.0         | 15.6                   |                             |                      |
|                       |                    |           | 12   | 2467.0         | 8.8                    | 10.0                        | No                   |
|                       |                    |           | 13   | 2472.0         | 3.6                    | 5.0                         |                      |
|                       | 802.11n<br>(HT20)  | 6.5 Mbps  | 1    | 2412.0         | Not Required           | 15.0                        | No                   |
|                       |                    |           | 6    | 2437.0         |                        | 16.0                        |                      |
|                       |                    |           | 11   | 2462.0         |                        | 15.0                        |                      |
|                       |                    |           | 12   | 2467.0         |                        | 10.0                        |                      |
|                       |                    |           | 13   | 2472.0         |                        | 5.0                         |                      |
|                       | 802.11ax<br>(HE20) | 7.3 Mbps  | 1    | 2412.0         | Not Required           | 12.0                        | No                   |
|                       |                    |           | 6    | 2437.0         |                        | 13.0                        |                      |
|                       |                    |           | 11   | 2462.0         |                        | 10.0                        |                      |
|                       |                    |           | 12   | 2467.0         |                        | 5.0                         |                      |
|                       |                    |           | 13   | 2472.0         |                        | 5.0                         |                      |

**Note(s):**

- SAR is not required for 802.11g/n modes when the adjusted SAR for 802.11b is < 1.2 W/kg.
- For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11n/g/ax mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.
- Additionally, SAR is not required for Channels 12 and 13 because the tune-up limit and the measured output power for these two channels are no greater than those for the default test channels. Refer to §6.3.
- MIMO DTS SAR test were additionally evaluated at Body-worn and Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

When the RCV is active in a held-to-ear user scenario, the output power level is reduced. The maximum allowed output powers in all conditions are included in the maximum power document.  
Refer to Operational Description for WLAN explanation.

| Antenna          | Band (GHz)      | Mode             | Data Rate | Ch #         | Freq. (MHz)  | Max. Average Power |                          |                   | Reduced Average Power |                             |                   |
|------------------|-----------------|------------------|-----------|--------------|--------------|--------------------|--------------------------|-------------------|-----------------------|-----------------------------|-------------------|
|                  |                 |                  |           |              |              | Avg Pw r (dBm)     | Max. Tune-up Limit (dBm) | SAR Test (Yes/No) | Avg Pw r (dBm)        | Reduced Tune-up Limit (dBm) | SAR Test (Yes/No) |
| SISO Ant.1       | 5.3 (UNII 2A)   | 802.11a          | 6 Mbps    | 52           | 5260         | 14.9               | 16.5                     | Yes               | Not Required          | 14.0                        | No                |
|                  |                 |                  |           | 56           | 5280         | 14.9               |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 60           | 5300         | 14.8               |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 64           | 5320         | 14.6               |                          |                   |                       |                             |                   |
|                  |                 | 802.11n (HT20)   | 6.5 Mbps  | 52           | 5260         | Not Required       | 16.5                     | No                | Not Required          | 14.0                        | No                |
|                  |                 |                  |           | 56           | 5280         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 60           | 5300         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 64           | 5320         |                    |                          |                   |                       |                             |                   |
|                  |                 | 802.11n (HT40)   | 13.5 Mbps | 54           | 5270         | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|                  |                 |                  |           | 62           | 5310         |                    |                          |                   |                       |                             |                   |
|                  |                 | 802.11ac (VHT20) | 6.5 Mbps  | 52           | 5260         | Not Required       | 16.5                     | No                | Not Required          | 14.0                        | No                |
|                  |                 |                  |           | 56           | 5280         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 60           | 5300         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 64           | 5320         |                    |                          |                   |                       |                             |                   |
|                  |                 | 802.11ac (VHT40) | 13.5 Mbps | 54           | 5270         | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|                  |                 |                  |           | 62           | 5310         |                    |                          |                   |                       |                             |                   |
|                  |                 | 802.11ac (VHT80) | 29.3 Mbps | 58           | 5290         | Not Required       | 15.0                     | No                | 12.8                  | 14.0                        | Yes               |
|                  |                 |                  |           |              |              |                    |                          |                   |                       |                             |                   |
|                  |                 | 802.11ax (HE20)  | 7.3 Mbps  | 52           | 5260         | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|                  |                 |                  |           | 56           | 5280         |                    |                          |                   |                       |                             |                   |
|                  | 60              |                  |           | 5300         |              |                    |                          |                   |                       |                             |                   |
|                  | 64              |                  |           | 5320         |              |                    |                          |                   |                       |                             |                   |
|                  | 802.11ax (HE40) | 14.6 Mbps        | 54        | 5270         | Not Required | 14.0               | No                       | Not Required      | 14.0                  | No                          |                   |
|                  |                 |                  | 62        | 5310         |              |                    |                          |                   |                       |                             |                   |
|                  | 802.11ax (HE80) | 30.6 Mbps        | 58        | 5290         | Not Required | 13.0               | No                       | Not Required      | 13.0                  | No                          |                   |
|                  |                 |                  |           |              |              |                    |                          |                   |                       |                             |                   |
|                  | 5.5 (U-NII 2C)  | 802.11a          | 6 Mbps    | 100          | 5500         | 15.7               | 17.0                     | Yes               | Not Required          | 14.0                        | No                |
|                  |                 |                  |           | 120          | 5600         | 15.7               |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 124          | 5620         | 15.6               |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 144          | 5720         | 15.7               |                          |                   |                       |                             |                   |
|                  |                 | 802.11n (HT20)   | 6.5 Mbps  | 100          | 5500         | Not Required       | 17.0                     | No                | Not Required          | 14.0                        | No                |
|                  |                 |                  |           | 120          | 5600         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 124          | 5620         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 144          | 5720         |                    |                          |                   |                       |                             |                   |
|                  |                 | 802.11n (HT40)   | 13.5 Mbps | 102          | 5510         | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|                  |                 |                  |           | 118          | 5590         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 126          | 5630         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 142          | 5710         |                    |                          |                   |                       |                             |                   |
|                  |                 | 802.11ac (VHT20) | 6.5 Mbps  | 100          | 5500         | Not Required       | 17.0                     | No                | Not Required          | 14.0                        | No                |
|                  |                 |                  |           | 120          | 5600         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 124          | 5620         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 144          | 5720         |                    |                          |                   |                       |                             |                   |
|                  |                 | 802.11ac (VHT40) | 13.5 Mbps | 102          | 5510         | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|                  |                 |                  |           | 118          | 5590         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 126          | 5630         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 142          | 5710         |                    |                          |                   |                       |                             |                   |
|                  |                 | 802.11ac (VHT80) | 29.3 Mbps | 106          | 5530         | Not Required       | 15.0                     | No                | 12.8                  | 14.0                        | Yes               |
|                  |                 |                  |           | 122          | 5610         |                    |                          |                   | 12.9                  |                             |                   |
|                  |                 |                  |           | 138          | 5690         |                    |                          |                   | 12.9                  |                             |                   |
|                  |                 |                  |           | 100          | 5500         |                    |                          |                   |                       |                             |                   |
|                  |                 | 802.11ax (HE20)  | 7.3 Mbps  | 120          | 5600         | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|                  |                 |                  |           | 124          | 5620         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 144          | 5720         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 102          | 5510         |                    |                          |                   |                       |                             |                   |
|                  |                 | 802.11ax (HE40)  | 14.6 Mbps | 118          | 5590         | Not Required       | 14.0                     | No                | Not Required          | 14.0                        | No                |
|                  |                 |                  |           | 126          | 5630         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 142          | 5710         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  |           | 106          | 5530         |                    |                          |                   |                       |                             |                   |
|                  |                 | 802.11ax (HE80)  | 30.6 Mbps | 122          | 5610         | Not Required       | 13.0                     | No                | Not Required          | 13.0                        | No                |
|                  |                 |                  |           | 138          | 5690         |                    |                          |                   |                       |                             |                   |
| 149              |                 |                  |           | 5745         |              |                    |                          |                   |                       |                             |                   |
| 157              |                 |                  |           | 5785         |              |                    |                          |                   |                       |                             |                   |
| 802.11a          |                 | 6 Mbps           | 165       | 5825         | 17.2         | 18.0               | Yes                      | Not Required      | 14.0                  | No                          |                   |
|                  |                 |                  | 151       | 5755         | 17.3         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  | 155       | 5775         | 17.3         |                    |                          |                   |                       |                             |                   |
|                  |                 |                  | 149       | 5745         |              |                    |                          |                   |                       |                             |                   |
| 802.11n (HT20)   | 6.5 Mbps        | 157              | 5785      | Not Required | 18.0         | No                 | Not Required             | 14.0              | No                    |                             |                   |
|                  |                 | 165              | 5825      |              |              |                    |                          |                   |                       |                             |                   |
|                  |                 | 151              | 5755      |              |              |                    |                          |                   |                       |                             |                   |
|                  |                 | 159              | 5795      |              |              |                    |                          |                   |                       |                             |                   |
| 802.11n (HT40)   | 13.5 Mbps       | 149              | 5745      | Not Required | 16.0         | No                 | Not Required             | 14.0              | No                    |                             |                   |
|                  |                 | 157              | 5785      |              |              |                    |                          |                   |                       |                             |                   |
|                  |                 | 165              | 5825      |              |              |                    |                          |                   |                       |                             |                   |
|                  |                 | 151              | 5755      |              |              |                    |                          |                   |                       |                             |                   |
| 802.11ac (VHT20) | 6.5 Mbps        | 157              | 5785      | Not Required | 18.0         | No                 | Not Required             | 14.0              | No                    |                             |                   |
|                  |                 | 165              | 5825      |              |              |                    |                          |                   |                       |                             |                   |
|                  |                 | 151              | 5755      |              |              |                    |                          |                   |                       |                             |                   |
|                  |                 | 159              | 5795      |              |              |                    |                          |                   |                       |                             |                   |
| 802.11ac (VHT40) | 13.5 Mbps       | 155              | 5775      | Not Required | 16.0         | No                 | Not Required             | 14.0              | No                    |                             |                   |
|                  |                 |                  |           |              |              |                    |                          |                   |                       |                             |                   |
| 802.11ac (VHT80  |                 |                  |           |              |              |                    |                          |                   |                       |                             |                   |

## Measured Results of WiFi SISO Ant.2

| Antenna    | Band (GHz)    | Mode             | Data Rate | Ch # | Freq. (MHz) | Max. Average Power |                          |                   | Reduced Average Power |                             |                   |
|------------|---------------|------------------|-----------|------|-------------|--------------------|--------------------------|-------------------|-----------------------|-----------------------------|-------------------|
|            |               |                  |           |      |             | Avg Pwr (dBm)      | Max. Tune-up Limit (dBm) | SAR Test (Yes/No) | Avg Pwr (dBm)         | Reduced Tune-up Limit (dBm) | SAR Test (Yes/No) |
| SISO Ant.2 | 5.3 (UNII 2A) | 802.11a          | 6 Mbps    | 52   | 5260        | 14.8               | 16.5                     | Yes               | Not Required          | 14.0                        | No                |
|            |               |                  |           | 56   | 5280        | 14.8               |                          |                   |                       |                             |                   |
|            |               |                  |           | 60   | 5300        | 14.7               |                          |                   |                       |                             |                   |
|            |               |                  |           | 64   | 5320        | 14.8               |                          |                   |                       |                             |                   |
|            |               | 802.11n (HT20)   | 6.5 Mbps  | 52   | 5260        | Not Required       | 16.5                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 56   | 5280        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 60   | 5300        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 64   | 5320        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11n (HT40)   | 13.5 Mbps | 54   | 5270        | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 62   | 5310        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ac (VHT20) | 6.5 Mbps  | 52   | 5260        | Not Required       | 16.5                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 56   | 5280        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 60   | 5300        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 64   | 5320        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ac (VHT40) | 13.5 Mbps | 54   | 5270        | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 62   | 5310        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ac (VHT80) | 29.3 Mbps | 58   | 5290        | Not Required       | 15.0                     | No                | 12.9                  | 14.0                        | Yes               |
|            |               |                  |           |      |             |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ax (HE20)  | 7.3 Mbps  | 52   | 5260        | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 56   | 5280        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 60   | 5300        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 64   | 5320        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ax (HE40)  | 14.6 Mbps | 54   | 5270        | Not Required       | 14.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 62   | 5310        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ax (HE80)  | 30.6 Mbps | 58   | 5290        | Not Required       | 13.0                     | No                | Not Required          | 13.0                        | No                |
|            |               |                  |           |      |             |                    |                          |                   |                       |                             |                   |
|            | 5.5 (UNII 2C) | 802.11a          | 6 Mbps    | 100  | 5500        | 15.5               | 17.0                     | Yes               | Not Required          | 14.0                        | No                |
|            |               |                  |           | 120  | 5600        | 14.9               |                          |                   |                       |                             |                   |
|            |               |                  |           | 124  | 5620        | 14.9               |                          |                   |                       |                             |                   |
|            |               |                  |           | 144  | 5720        | 14.7               |                          |                   |                       |                             |                   |
|            |               | 802.11n (HT20)   | 6.5 Mbps  | 100  | 5500        | Not Required       | 17.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 120  | 5600        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 124  | 5620        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 144  | 5720        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11n (HT40)   | 13.5 Mbps | 102  | 5510        | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 118  | 5590        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 126  | 5630        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 142  | 5710        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ac (VHT20) | 6.5 Mbps  | 100  | 5500        | Not Required       | 17.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 120  | 5600        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 124  | 5620        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 144  | 5720        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ac (VHT40) | 13.5 Mbps | 102  | 5510        | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 118  | 5590        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 126  | 5630        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 142  | 5710        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ac (VHT80) | 29.3 Mbps | 106  | 5530        | Not Required       | 15.0                     | No                | 13.3                  | 14.0                        | Yes               |
|            |               |                  |           | 122  | 5610        |                    |                          |                   | 12.9                  |                             |                   |
|            |               |                  |           | 138  | 5690        |                    |                          |                   | 13.0                  |                             |                   |
|            |               |                  |           | 100  | 5500        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ax (HE20)  | 7.3 Mbps  | 120  | 5600        | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 124  | 5620        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 144  | 5720        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 102  | 5510        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ax (HE40)  | 14.6 Mbps | 118  | 5590        | Not Required       | 14.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 126  | 5630        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 142  | 5710        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 106  | 5530        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ax (HE80)  | 30.6 Mbps | 122  | 5610        | Not Required       | 13.0                     | No                | Not Required          | 13.0                        | No                |
|            |               |                  |           | 138  | 5690        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 149  | 5745        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 157  | 5785        |                    |                          |                   |                       |                             |                   |
|            | 5.8 (UNII 3)  | 802.11a          | 6 Mbps    | 165  | 5825        | 17.0               | 18.0                     | Yes               | Not Required          | 14.0                        | No                |
|            |               |                  |           | 157  | 5785        | 16.7               |                          |                   |                       |                             |                   |
|            |               |                  |           | 149  | 5745        | 16.4               |                          |                   |                       |                             |                   |
|            |               | 802.11n (HT20)   | 6.5 Mbps  | 157  | 5785        | Not Required       | 18.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 165  | 5825        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 151  | 5755        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11n (HT40)   | 13.5 Mbps | 159  | 5795        | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 149  | 5745        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 157  | 5785        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ac (VHT20) | 6.5 Mbps  | 165  | 5825        | Not Required       | 18.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 157  | 5785        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 165  | 5825        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ac (VHT40) | 13.5 Mbps | 151  | 5755        | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 159  | 5795        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 155  | 5775        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ac (VHT80) | 29.3 Mbps | 149  | 5745        | Not Required       | 15.0                     | No                | 12.5                  | 14.0                        | Yes               |
|            |               |                  |           | 157  | 5785        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 165  | 5825        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ax (HE20)  | 7.3 Mbps  | 151  | 5755        | Not Required       | 16.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 159  | 5795        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 155  | 5775        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ax (HE40)  | 14.6 Mbps | 149  | 5745        | Not Required       | 14.0                     | No                | Not Required          | 14.0                        | No                |
|            |               |                  |           | 157  | 5785        |                    |                          |                   |                       |                             |                   |
|            |               |                  |           | 165  | 5825        |                    |                          |                   |                       |                             |                   |
|            |               | 802.11ax (HE80)  | 30.6 Mbps | 151  | 5755        | Not Required       | 13.0                     | No                | Not Required          | 13.0                        | No                |
|            |               |                  |           | 159  | 5795        |                    |                          |                   |                       |                             |                   |

## Measured Results of WiFi MIMO

| Band (GHz)    | Mode             | Data Rate | Ch # | Freq. (MHz) | MIMO Ant.1    |                          |                   | MIMO Ant.2    |                          |                   |
|---------------|------------------|-----------|------|-------------|---------------|--------------------------|-------------------|---------------|--------------------------|-------------------|
|               |                  |           |      |             | Avg Pwr (dBm) | Max. Tune-up Limit (dBm) | SAR Test (Yes/No) | Avg Pwr (dBm) | Max. Tune-up Limit (dBm) | SAR Test (Yes/No) |
| 5.3 (UNII 2A) | 802.11a          | 6 Mbps    | 52   | 5260        | 14.9          | 16.5                     | Yes               | 14.7          | 16.5                     | Yes               |
|               |                  |           | 56   | 5280        | 14.8          |                          |                   | 14.7          |                          |                   |
|               |                  |           | 60   | 5300        | 14.7          |                          |                   | 14.5          |                          |                   |
|               |                  |           | 64   | 5320        | 14.6          |                          |                   | 14.5          |                          |                   |
|               | 802.11n (HT20)   | 6.5 Mbps  | 52   | 5260        | Not Required  | 16.5                     | No                | Not Required  | 16.5                     | No                |
|               |                  |           | 56   | 5280        |               |                          |                   |               |                          |                   |
|               |                  |           | 60   | 5300        |               |                          |                   |               |                          |                   |
|               |                  |           | 64   | 5320        |               |                          |                   |               |                          |                   |
|               | 802.11n (HT40)   | 13.5 Mbps | 54   | 5270        | Not Required  | 16.0                     | No                | Not Required  | 16.0                     | No                |
|               |                  |           | 62   | 5310        |               |                          |                   |               |                          |                   |
|               | 802.11ac (VHT20) | 6.5 Mbps  | 52   | 5260        | Not Required  | 16.5                     | No                | Not Required  | 16.5                     | No                |
|               |                  |           | 56   | 5280        |               |                          |                   |               |                          |                   |
|               |                  |           | 60   | 5300        |               |                          |                   |               |                          |                   |
|               |                  |           | 64   | 5320        |               |                          |                   |               |                          |                   |
|               | 802.11ac (VHT40) | 13.5 Mbps | 54   | 5270        | Not Required  | 16.0                     | No                | Not Required  | 16.0                     | No                |
|               |                  |           | 62   | 5310        |               |                          |                   |               |                          |                   |
|               | 802.11ac (VHT80) | 29.3 Mbps | 58   | 5290        | Not Required  | 15.0                     | No                | Not Required  | 15.0                     | No                |
|               |                  |           |      |             |               |                          |                   |               |                          |                   |
|               | 802.11ax (HE20)  | 7.3 Mbps  | 52   | 5260        | Not Required  | 13.0                     | No                | Not Required  | 16.0                     | No                |
|               |                  |           | 56   | 5280        |               |                          |                   |               |                          |                   |
|               |                  |           | 60   | 5300        |               |                          |                   |               |                          |                   |
|               |                  |           | 64   | 5320        |               |                          |                   |               |                          |                   |
|               | 802.11ax (HE40)  | 14.6 Mbps | 54   | 5270        | Not Required  | 11.0                     | No                | Not Required  | 14.0                     | No                |
|               |                  |           | 62   | 5310        |               |                          |                   |               |                          |                   |
|               | 802.11ax (HE80)  | 30.6 Mbps | 58   | 5290        | Not Required  | 10.0                     | No                | Not Required  | 13.0                     | No                |
|               |                  |           |      |             |               |                          |                   |               |                          |                   |
| 5.5 (UNII 2C) | 802.11a          | 6 Mbps    | 100  | 5500        | 15.7          | 17.0                     | Yes               | 15.5          | 17.0                     | Yes               |
|               |                  |           | 120  | 5600        | 15.6          |                          |                   | 14.8          |                          |                   |
|               |                  |           | 124  | 5620        | 15.6          |                          |                   | 14.8          |                          |                   |
|               |                  |           | 144  | 5720        | 15.7          |                          |                   | 14.7          |                          |                   |
|               | 802.11n (HT20)   | 6.5 Mbps  | 100  | 5500        | Not Required  | 17.0                     | No                | Not Required  | 17.0                     | No                |
|               |                  |           | 120  | 5600        |               |                          |                   |               |                          |                   |
|               |                  |           | 124  | 5620        |               |                          |                   |               |                          |                   |
|               |                  |           | 144  | 5720        |               |                          |                   |               |                          |                   |
|               | 802.11n (HT40)   | 13.5 Mbps | 102  | 5510        | Not Required  | 16.0                     | No                | Not Required  | 16.0                     | No                |
|               |                  |           | 118  | 5590        |               |                          |                   |               |                          |                   |
|               |                  |           | 126  | 5630        |               |                          |                   |               |                          |                   |
|               |                  |           | 142  | 5710        |               |                          |                   |               |                          |                   |
|               | 802.11ac (VHT20) | 6.5 Mbps  | 100  | 5500        | Not Required  | 17.0                     | No                | Not Required  | 17.0                     | No                |
|               |                  |           | 120  | 5600        |               |                          |                   |               |                          |                   |
|               |                  |           | 124  | 5620        |               |                          |                   |               |                          |                   |
|               |                  |           | 144  | 5720        |               |                          |                   |               |                          |                   |
|               | 802.11ac (VHT40) | 13.5 Mbps | 102  | 5510        | Not Required  | 16.0                     | No                | Not Required  | 16.0                     | No                |
|               |                  |           | 118  | 5590        |               |                          |                   |               |                          |                   |
|               |                  |           | 126  | 5630        |               |                          |                   |               |                          |                   |
|               |                  |           | 142  | 5710        |               |                          |                   |               |                          |                   |
|               | 802.11ac (VHT80) | 29.3 Mbps | 106  | 5530        | Not Required  | 15.0                     | No                | Not Required  | 15.0                     | No                |
|               |                  |           | 122  | 5610        |               |                          |                   |               |                          |                   |
|               |                  |           | 138  | 5690        |               |                          |                   |               |                          |                   |
|               |                  |           | 154  | 5770        |               |                          |                   |               |                          |                   |
|               | 802.11ax (HE20)  | 7.3 Mbps  | 100  | 5500        | Not Required  | 13.0                     | No                | Not Required  | 16.0                     | No                |
|               |                  |           | 120  | 5600        |               |                          |                   |               |                          |                   |
|               |                  |           | 124  | 5620        |               |                          |                   |               |                          |                   |
|               |                  |           | 144  | 5720        |               |                          |                   |               |                          |                   |
|               | 802.11ax (HE40)  | 14.6 Mbps | 102  | 5510        | Not Required  | 11.0                     | No                | Not Required  | 14.0                     | No                |
|               |                  |           | 118  | 5590        |               |                          |                   |               |                          |                   |
|               |                  |           | 126  | 5630        |               |                          |                   |               |                          |                   |
|               |                  |           | 142  | 5710        |               |                          |                   |               |                          |                   |
|               | 802.11ax (HE80)  | 30.6 Mbps | 106  | 5530        | Not Required  | 10.0                     | No                | Not Required  | 13.0                     | No                |
|               |                  |           | 122  | 5610        |               |                          |                   |               |                          |                   |
|               |                  |           | 138  | 5690        |               |                          |                   |               |                          |                   |
|               |                  |           | 154  | 5770        |               |                          |                   |               |                          |                   |
| 5.8 (UNII 3)  | 802.11a          | 6 Mbps    | 149  | 5745        | 17.2          | 18.0                     | Yes               | 16.9          | 18.0                     | Yes               |
|               |                  |           | 157  | 5785        | 17.2          |                          |                   | 16.6          |                          |                   |
|               |                  |           | 165  | 5825        | 17.3          |                          |                   | 16.3          |                          |                   |
|               |                  |           | 149  | 5745        |               |                          |                   |               |                          |                   |
|               | 802.11n (HT20)   | 6.5 Mbps  | 157  | 5785        | Not Required  | 18.0                     | No                | Not Required  | 18.0                     | No                |
|               |                  |           | 165  | 5825        |               |                          |                   |               |                          |                   |
|               | 802.11n (HT40)   | 13.5 Mbps | 151  | 5755        | Not Required  | 16.0                     | No                | Not Required  | 16.0                     | No                |
|               |                  |           | 159  | 5795        |               |                          |                   |               |                          |                   |
|               | 802.11ac (VHT20) | 6.5 Mbps  | 149  | 5745        | Not Required  | 18.0                     | No                | Not Required  | 18.0                     | No                |
|               |                  |           | 157  | 5785        |               |                          |                   |               |                          |                   |
|               |                  |           | 165  | 5825        |               |                          |                   |               |                          |                   |
|               |                  |           | 151  | 5755        |               |                          |                   |               |                          |                   |
|               | 802.11ac (VHT40) | 13.5 Mbps | 151  | 5755        | Not Required  | 16.0                     | No                | Not Required  | 16.0                     | No                |
|               |                  |           | 159  | 5795        |               |                          |                   |               |                          |                   |
|               | 802.11ac (VHT80) | 29.3 Mbps | 155  | 5775        | Not Required  | 15.0                     | No                | Not Required  | 15.0                     | No                |
|               |                  |           |      |             |               |                          |                   |               |                          |                   |
|               | 802.11ax (HE20)  | 7.3 Mbps  | 149  | 5745        | Not Required  | 13.0                     | No                | Not Required  | 16.0                     | No                |
|               |                  |           | 157  | 5785        |               |                          |                   |               |                          |                   |
|               |                  |           | 165  | 5825        |               |                          |                   |               |                          |                   |
|               |                  |           | 151  | 5755        |               |                          |                   |               |                          |                   |
|               | 802.11ax (HE40)  | 14.6 Mbps | 151  | 5755        | Not Required  | 11.0                     | No                | Not Required  | 14.0                     | No                |
|               |                  |           | 159  | 5795        |               |                          |                   |               |                          |                   |
|               | 802.11ax (HE80)  | 30.6 Mbps | 155  | 5775        | Not Required  | 10.0                     | No                | Not Required  | 13.0                     | No                |
|               |                  |           |      |             |               |                          |                   |               |                          |                   |

## Note(s):

- For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
- When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.
- When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest reported SAR for UNII band 2A is
  - ≤ 1.2 W/kg, SAR is not required for UNII band I
  - > 1.2 W/kg, both bands should be tested independently for SAR.
- MIMO U-NII SAR test were additionally evaluated at Body-worn exposure conditions for determining simultaneous transmission SAR test exclusion.

## Measured Results of WiFi RSDB SISO

| Band<br>(GHz)       | Mode                | Data Rate | Ch # | Freq.<br>(MHz) | SISO Ant.1        |                             |                      | SISO Ant.2        |                             |                      |
|---------------------|---------------------|-----------|------|----------------|-------------------|-----------------------------|----------------------|-------------------|-----------------------------|----------------------|
|                     |                     |           |      |                | Avg Pw r<br>(dBm) | Max. Tune-up<br>Limit (dBm) | SAR Test<br>(Yes/No) | Avg Pw r<br>(dBm) | Max. Tune-up<br>Limit (dBm) | SAR Test<br>(Yes/No) |
| 5.3<br>(UNII 2A)    | 802.11a             | 6 Mbps    | 52   | 5260           | Not Required      | 14.0                        | Yes                  | Not Required      | 14.0                        | Yes                  |
|                     |                     |           | 56   | 5280           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 60   | 5300           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 64   | 5320           |                   |                             |                      |                   |                             |                      |
|                     | 802.11n<br>(HT20)   | 6.5 Mbps  | 52   | 5260           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 56   | 5280           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 60   | 5300           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 64   | 5320           |                   |                             |                      |                   |                             |                      |
|                     | 802.11n<br>(HT40)   | 13.5 Mbps | 54   | 5270           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 62   | 5310           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT20) | 6.5 Mbps  | 52   | 5260           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 56   | 5280           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 60   | 5300           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 64   | 5320           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT40) | 13.5 Mbps | 54   | 5270           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 62   | 5310           |                   |                             |                      |                   |                             |                      |
| 802.11ac<br>(VHT80) | 29.3 Mbps           | 58        | 5290 | 12.8           | 14.0              | No                          | 12.9                 | 14.0              | No                          |                      |
| 802.11ax<br>(HE20)  | 7.3 Mbps            | 52        | 5260 | Not Required   | 14.0              | No                          | Not Required         | 14.0              | No                          |                      |
|                     |                     | 56        | 5280 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 60        | 5300 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 64        | 5320 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE40)  | 14.6 Mbps           | 54        | 5270 | Not Required   | 14.0              | No                          | Not Required         | 14.0              | No                          |                      |
|                     |                     | 62        | 5310 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE80)  | 30.6 Mbps           | 58        | 5290 | Not Required   | 13.0              | No                          | Not Required         | 13.0              | No                          |                      |
| 5.5<br>(U-NII 2C)   | 802.11a             | 6 Mbps    | 100  | 5500           | Not Required      | 14.0                        | Yes                  | Not Required      | 14.0                        | Yes                  |
|                     |                     |           | 120  | 5600           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 124  | 5620           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 144  | 5720           |                   |                             |                      |                   |                             |                      |
|                     | 802.11n<br>(HT20)   | 6.5 Mbps  | 100  | 5500           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 120  | 5600           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 124  | 5620           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 144  | 5720           |                   |                             |                      |                   |                             |                      |
|                     | 802.11n<br>(HT40)   | 13.5 Mbps | 102  | 5510           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 118  | 5590           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 126  | 5630           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 142  | 5710           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT20) | 6.5 Mbps  | 100  | 5500           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 120  | 5600           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 124  | 5620           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 144  | 5720           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT40) | 13.5 Mbps | 102  | 5510           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 118  | 5590           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 126  | 5630           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 142  | 5710           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT80) | 29.3 Mbps | 106  | 5530           | 12.8              | 14.0                        | No                   | 13.3              | 14.0                        | No                   |
|                     |                     |           | 122  | 5610           | 12.9              |                             |                      | 12.9              |                             |                      |
|                     |                     |           | 138  | 5690           | 12.9              |                             |                      | 13.0              |                             |                      |
|                     |                     |           | 100  | 5500           |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE20)  | 7.3 Mbps            | 120       | 5600 | Not Required   | 14.0              | No                          | Not Required         | 14.0              | No                          |                      |
|                     |                     | 124       | 5620 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 144       | 5720 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 102       | 5510 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE40)  | 14.6 Mbps           | 118       | 5590 | Not Required   | 14.0              | No                          | Not Required         | 14.0              | No                          |                      |
|                     |                     | 126       | 5630 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 142       | 5710 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 106       | 5530 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE80)  | 30.6 Mbps           | 122       | 5610 | Not Required   | 13.0              | No                          | Not Required         | 13.0              | No                          |                      |
|                     |                     | 138       | 5690 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 149       | 5745 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 157       | 5785 |                |                   |                             |                      |                   |                             |                      |
| 5.8<br>(U-NII 3)    | 802.11a             | 6 Mbps    | 149  | 5745           | Not Required      | 14.0                        | Yes                  | Not Required      | 14.0                        | Yes                  |
|                     |                     |           | 157  | 5785           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 165  | 5825           |                   |                             |                      |                   |                             |                      |
|                     | 802.11n<br>(HT20)   | 6.5 Mbps  | 149  | 5745           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 157  | 5785           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 165  | 5825           |                   |                             |                      |                   |                             |                      |
|                     | 802.11n<br>(HT40)   | 13.5 Mbps | 151  | 5755           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 159  | 5795           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 149  | 5745           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT20) | 6.5 Mbps  | 157  | 5785           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 165  | 5825           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 151  | 5755           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT40) | 13.5 Mbps | 159  | 5795           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 155  | 5775           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 149  | 5745           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT80) | 29.3 Mbps | 149  | 5745           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
| 157                 |                     |           | 5785 |                |                   |                             |                      |                   |                             |                      |
| 165                 |                     |           | 5825 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE20)  | 7.3 Mbps            | 151       | 5755 | Not Required   | 14.0              | No                          | Not Required         | 14.0              | No                          |                      |
|                     |                     | 159       | 5795 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 155       | 5775 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE40)  | 14.6 Mbps           | 151       | 5755 | Not Required   | 14.0              | No                          | Not Required         | 14.0              | No                          |                      |
|                     |                     | 159       | 5795 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 155       | 5775 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE80)  | 30.6 Mbps           | 155       | 5775 | Not Required   | 13.0              | No                          | Not Required         | 13.0              | No                          |                      |
|                     |                     | 151       | 5755 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 159       | 5795 |                |                   |                             |                      |                   |                             |                      |

## Note(s):

- For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
- When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.
- When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest reported SAR for UNII band 2A is
  - ≤ 1.2 W/kg, SAR is not required for UNII band I
  - > 1.2 W/kg, both bands should be tested independently for SAR.
- MIMO U-NII SAR test were additionally evaluated at Body-worn and Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

## Measured Results of WiFi RSDB MIMO

| Band<br>(GHz)       | Mode                | Data Rate | Ch # | Freq.<br>(MHz) | MIMO Ant.1        |                             |                      | MIMO Ant.2        |                             |                      |
|---------------------|---------------------|-----------|------|----------------|-------------------|-----------------------------|----------------------|-------------------|-----------------------------|----------------------|
|                     |                     |           |      |                | Avg Pw r<br>(dBm) | Max. Tune-up<br>Limit (dBm) | SAR Test<br>(Yes/No) | Avg Pw r<br>(dBm) | Max. Tune-up<br>Limit (dBm) | SAR Test<br>(Yes/No) |
| 5.3<br>(UNII 2A)    | 802.11a             | 6 Mbps    | 52   | 5260           | Not Required      | 14.0                        | Yes                  | Not Required      | 14.0                        | Yes                  |
|                     |                     |           | 56   | 5280           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 60   | 5300           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 64   | 5320           |                   |                             |                      |                   |                             |                      |
|                     | 802.11n<br>(HT20)   | 6.5 Mbps  | 52   | 5260           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 56   | 5280           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 60   | 5300           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 64   | 5320           |                   |                             |                      |                   |                             |                      |
|                     | 802.11n<br>(HT40)   | 13.5 Mbps | 54   | 5270           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 62   | 5310           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT20) | 6.5 Mbps  | 52   | 5260           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 56   | 5280           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 60   | 5300           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 64   | 5320           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT40) | 13.5 Mbps | 54   | 5270           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 62   | 5310           |                   |                             |                      |                   |                             |                      |
| 802.11ac<br>(VHT80) | 29.3 Mbps           | 58        | 5290 | 12.6           | 14.0              | No                          | 12.9                 | 14.0              | No                          |                      |
| 802.11ax<br>(HE20)  | 7.3 Mbps            | 52        | 5260 | Not Required   | 13.0              | No                          | Not Required         | 13.0              | No                          |                      |
|                     |                     | 56        | 5280 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 60        | 5300 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 64        | 5320 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE40)  | 14.6 Mbps           | 54        | 5270 | Not Required   | 11.0              | No                          | Not Required         | 11.0              | No                          |                      |
|                     |                     | 62        | 5310 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE80)  | 30.6 Mbps           | 58        | 5290 | Not Required   | 10.0              | No                          | Not Required         | 10.0              | No                          |                      |
| 5.5<br>(U-NII 2C)   | 802.11a             | 6 Mbps    | 100  | 5500           | Not Required      | 14.0                        | Yes                  | Not Required      | 14.0                        | Yes                  |
|                     |                     |           | 120  | 5600           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 124  | 5620           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 144  | 5720           |                   |                             |                      |                   |                             |                      |
|                     | 802.11n<br>(HT20)   | 6.5 Mbps  | 100  | 5500           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 120  | 5600           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 124  | 5620           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 144  | 5720           |                   |                             |                      |                   |                             |                      |
|                     | 802.11n<br>(HT40)   | 13.5 Mbps | 102  | 5510           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 118  | 5590           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 126  | 5630           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 142  | 5710           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT20) | 6.5 Mbps  | 100  | 5500           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 120  | 5600           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 124  | 5620           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 144  | 5720           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT40) | 13.5 Mbps | 102  | 5510           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 118  | 5590           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 126  | 5630           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 142  | 5710           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT80) | 29.3 Mbps | 106  | 5530           | 12.2              | 14.0                        | No                   | 13.7              | 14.0                        | No                   |
|                     |                     |           | 122  | 5610           | 12.2              |                             |                      | 13.2              |                             |                      |
|                     |                     |           | 138  | 5690           | 12.2              |                             |                      | 12.7              |                             |                      |
|                     |                     |           | 100  | 5500           | Not Required      |                             |                      | Not Required      |                             | No                   |
| 802.11ax<br>(HE20)  | 7.3 Mbps            | 120       | 5600 | Not Required   | 13.0              | No                          |                      | 13.0              |                             |                      |
|                     |                     | 124       | 5620 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 144       | 5720 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 102       | 5510 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE40)  | 14.6 Mbps           | 118       | 5590 | Not Required   | 11.0              | No                          | Not Required         | 11.0              | No                          |                      |
|                     |                     | 126       | 5630 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 142       | 5710 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 106       | 5530 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE80)  | 30.6 Mbps           | 122       | 5610 | Not Required   | 10.0              | No                          | Not Required         | 10.0              | No                          |                      |
|                     |                     | 138       | 5690 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 149       | 5745 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 157       | 5785 |                |                   |                             |                      |                   |                             |                      |
| 5.8<br>(U-NII 3)    | 802.11a             | 6 Mbps    | 149  | 5745           | Not Required      | 14.0                        | Yes                  | Not Required      | 14.0                        | Yes                  |
|                     |                     |           | 157  | 5785           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 165  | 5825           |                   |                             |                      |                   |                             |                      |
|                     | 802.11n<br>(HT20)   | 6.5 Mbps  | 149  | 5745           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 157  | 5785           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 165  | 5825           |                   |                             |                      |                   |                             |                      |
|                     | 802.11n<br>(HT40)   | 13.5 Mbps | 151  | 5755           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 159  | 5795           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 149  | 5745           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT20) | 6.5 Mbps  | 157  | 5785           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 165  | 5825           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 151  | 5755           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT40) | 13.5 Mbps | 159  | 5795           | Not Required      | 14.0                        | No                   | Not Required      | 14.0                        | No                   |
|                     |                     |           | 149  | 5745           |                   |                             |                      |                   |                             |                      |
|                     |                     |           | 157  | 5785           |                   |                             |                      |                   |                             |                      |
|                     | 802.11ac<br>(VHT80) | 29.3 Mbps | 155  | 5775           | 13.4              | 14.0                        | No                   | 12.5              | 14.0                        | No                   |
| 149                 |                     |           | 5745 |                |                   |                             |                      |                   |                             |                      |
| 157                 |                     |           | 5785 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE20)  | 7.3 Mbps            | 157       | 5785 | Not Required   | 13.0              | No                          | Not Required         | 13.0              | No                          |                      |
|                     |                     | 165       | 5825 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 151       | 5755 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE40)  | 14.6 Mbps           | 159       | 5795 | Not Required   | 11.0              | No                          | Not Required         | 11.0              | No                          |                      |
|                     |                     | 149       | 5745 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 157       | 5785 |                |                   |                             |                      |                   |                             |                      |
| 802.11ax<br>(HE80)  | 30.6 Mbps           | 155       | 5775 | Not Required   | 10.0              | No                          | Not Required         | 10.0              | No                          |                      |
|                     |                     | 149       | 5745 |                |                   |                             |                      |                   |                             |                      |
|                     |                     | 157       | 5785 |                |                   |                             |                      |                   |                             |                      |

## Note(s):

- For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
- When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.
- When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest reported SAR for UNII band 2A is
  - ≤ 1.2 W/kg, SAR is not required for UNII band I
  - > 1.2 W/kg, both bands should be tested independently for SAR.
- MIMO U-NII SAR test were additionally evaluated at Body-worn and Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

## 9.6. Bluetooth

### Measured Results

| Band (GHz) | Mode                  | Ch # | Freq. (MHz) | Maximum Average Power (dBm) |               |
|------------|-----------------------|------|-------------|-----------------------------|---------------|
|            |                       |      |             | Meas Pwr                    | Tune-up Limit |
| 2.4        | GFSK                  | 0    | 2402        | 15.0                        | 17.5          |
|            |                       | 39   | 2441        | 16.5                        |               |
|            |                       | 78   | 2480        | 16.7                        |               |
|            | EDR, 8-DPSK           | 0    | 2402        | 8.6                         | 11.0          |
|            |                       | 39   | 2441        | 10.0                        |               |
|            |                       | 78   | 2480        | 9.4                         |               |
|            | LE, GFSK, 1M (37 pkt) | 0    | 2402        | 6.0                         | 8.0           |
|            |                       | 19   | 2440        | 6.9                         |               |
|            |                       | 39   | 2480        | 6.6                         |               |
|            | LE, GFSK, 2M (37 pkt) | 0    | 2402        | 7.0                         | 9.0           |
|            |                       | 19   | 2440        | 7.9                         |               |
|            |                       | 39   | 2480        | 7.2                         |               |

### Note(s):

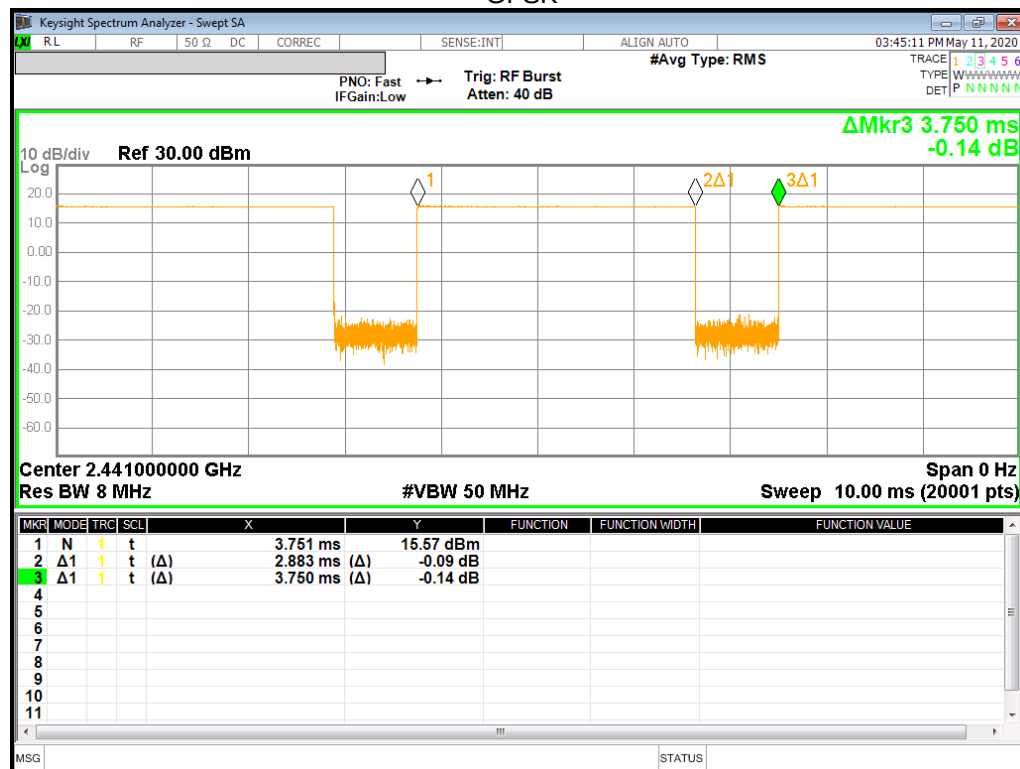
SAR test is evaluated at GFSK mode in Bluetooth

### Duty Factor Measured Results

| Mode | Type | T on (ms) | Period (ms) | Duty Cycle | Crest Factor (1/duty cycle) |
|------|------|-----------|-------------|------------|-----------------------------|
| GFSK | DH5  | 2.883     | 3.750       | 76.9%      | 1.30                        |

## Duty Cycle plots

### GFSK



## 10. Measured and Reported (Scaled) SAR Results

### SAR Test Reduction criteria are as follows:

- Reported SAR(W/kg) for WWAN= Measured SAR \*Tune-up Scaling Factor
- Reported SAR(W/kg) for Wi-Fi and Bluetooth= Measured SAR \* Tune-up scaling factor \* Duty Cycle scaling factor
- Duty Cycle scaling factor = 1 / Duty cycle (%)

### KDB 447498 D01 General RF Exposure Guidance:

Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

- $\leq 0.8$  W/kg or  $2.0$  W/kg, for 1-g or 10-g respectively, when the transmission band is  $\leq 100$  MHz
- $\leq 0.6$  W/kg or  $1.5$  W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- $\leq 0.4$  W/kg or  $1.0$  W/kg, for 1-g or 10-g respectively, when the transmission band is  $\geq 200$  MHz

### KDB 648474 D04 Handset SAR:

With headset attached, when the reported SAR for body-worn accessory, measured without a headset connected to the handset, is  $> 1.2$  W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

### KDB 648474 D04 Handset SAR (Phablet Only):

For smart phones, with a display diagonal dimension  $> 15.0$  cm or an overall diagonal dimension  $> 16.0$  cm.

When hotspot mode does not apply, 10-g extremity SAR is required for all surfaces and edges with an antenna located at  $\leq 25$ mm From that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR  $> 1.2$  W/kg; However, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, Including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

Additional 1-g SAR testing at 5 mm is not required when hotspot mode 10-g extremity SAR is not required for the surfaces and edges; since all 1-g reported SAR  $< 1.2$  W/kg.

### KDB 941225 D01 SAR test for 3G devices:

When the maximum output power and tune-up tolerance specified for production units in a secondary mode is  $\leq \frac{1}{4}$  dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is  $\leq 1.2$  W/kg, SAR measurement is not required for the secondary mode.

### KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

- Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel.
- When the reported SAR is  $> 0.8$  W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
- Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are  $> 0.8$  W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation  $< 1.45$  W/kg.
- Testing for 16-QAM modulation is not required because the reported SAR for QPSK is  $< 1.45$  W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
- Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is  $< 1.45$  W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.
- For LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. 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.

**KDB 248227 D01 SAR meas for 802.11:**

SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; these are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

The multiple test positions require SAR measurements in head, hotspot mode or UMPC mini-tablet configurations may be reduced according to the highest reported SAR determined using the initial test position(s) by applying the DSSS or OFDM SAR measurement procedures in the required wireless mode test configuration(s). The initial test position(s) is measured using the highest measured maximum output power channel in the required wireless mode test configuration(s). When the reported SAR for the initial test position is:

- $\leq 0.4$  W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- $> 0.4$  W/kg, SAR is repeated using the same wireless mode test configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the reported SAR is  $\leq 0.8$  W/kg or all required test positions are tested.
  - For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
  - When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is  $> 0.8$  W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is  $\leq 1.2$  W/kg or all required test channels are considered.
  - The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.
- When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is  $\leq 1.2$  W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.
- When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is  $\leq 1.2$  W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR.

To determine the initial test position, Area Scans were performed to determine the position with the *Maximum Value of SAR (measured)*. The position that produced the highest *Maximum Value of SAR* is considered the worst case position; thus used as the initial test position.

**10.1. GSM 850**

| Antenna     | RF Exposure Conditions | Mode         | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Power (dBm)   |       | 1-g SAR (W/kg) |        | Plot No. |
|-------------|------------------------|--------------|--------------|------------|---------------|-------|-------------|---------------|-------|----------------|--------|----------|
|             |                        |              |              |            |               |       |             | Tune-up limit | Meas. | Meas.          | Scaled |          |
| Main 1 Ant. | Head                   | GPRS 3 Slots | N/A          | 0          | Left Touch    | 190   | 836.6       | 30.5          | 29.5  | 0.226          | 0.283  | 1        |
|             |                        |              |              |            | Left Tilt     | 190   | 836.6       | 30.5          | 29.5  | 0.083          | 0.104  |          |
|             |                        |              |              |            | Right Touch   | 190   | 836.6       | 30.5          | 29.5  | 0.134          | 0.168  |          |
|             |                        |              |              |            | Right Tilt    | 190   | 836.6       | 30.5          | 29.5  | 0.068          | 0.085  |          |
|             | Body-worn              | GPRS 3 Slots | N/A          | 15         | Rear          | 190   | 836.6       | 30.5          | 29.5  | 0.355          | 0.445  | 2        |
|             |                        |              |              |            | Front         | 190   | 836.6       | 30.5          | 29.5  | 0.307          | 0.385  |          |
|             | Hotspot                | GPRS 3 Slots | N/A          | 10         | Rear          | 128   | 824.4       | 30.5          | 29.4  | 0.559          | 0.717  |          |
|             |                        |              |              |            |               | 190   | 836.6       | 30.5          | 29.5  | 0.649          | 0.813  |          |
|             |                        |              |              |            |               | 251   | 848.8       | 30.5          | 29.6  | 0.737          | 0.908  | 3        |
|             |                        |              |              |            | Front         | 190   | 836.6       | 30.5          | 29.5  | 0.458          | 0.574  |          |
|             |                        |              |              |            | Edge 2        | 190   | 836.6       | 30.5          | 29.5  | 0.074          | 0.093  |          |
|             |                        |              |              |            | Edge 3        | 190   | 836.6       | 30.5          | 29.5  | 0.429          | 0.537  |          |
|             |                        |              |              |            | Edge 4        | 190   | 836.6       | 30.5          | 29.5  | 0.225          | 0.282  |          |

**10.2. GSM 1900**

| Antenna    | RF Exposure Conditions | Mode        | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Power (dBm)   |       | 1-g SAR (W/kg)  |        | Plot No. |
|------------|------------------------|-------------|--------------|------------|---------------|-------|-------------|---------------|-------|-----------------|--------|----------|
|            |                        |             |              |            |               |       |             | Tune-up limit | Meas. | Meas.           | Scaled |          |
| Main 1Ant. | Head                   | GPRS 1 Slot | Off          | 0          | Left Touch    | 661   | 1880.0      | 30.5          | 28.5  | 0.031           | 0.048  |          |
|            |                        |             |              |            | Left Tilt     | 661   | 1880.0      | 30.5          | 28.5  | 0.027           | 0.042  |          |
|            |                        |             |              |            | Right Touch   | 661   | 1880.0      | 30.5          | 28.5  | 0.062           | 0.098  | 4        |
|            |                        |             |              |            | Right Tilt    | 661   | 1880.0      | 30.5          | 28.5  | 0.021           | 0.032  |          |
|            | Body-worn              | GPRS 1 Slot | Off          | 15         | Rear          | 661   | 1880.0      | 30.5          | 28.5  | 0.364           | 0.575  | 5        |
|            |                        |             |              |            | Front         | 661   | 1880.0      | 30.5          | 28.5  | 0.228           | 0.360  |          |
|            | Hotspot                | GPRS 2 Slot | On           | 10         | Rear          | 661   | 1880.0      | 24.5          | 23.2  | 0.357           | 0.480  |          |
|            |                        |             |              |            | Front         | 661   | 1880.0      | 24.5          | 23.2  | 0.247           | 0.332  |          |
|            |                        |             |              |            | Edge 2        | 661   | 1880.0      | 24.5          | 23.2  | 0.043           | 0.058  |          |
|            |                        |             |              |            | Edge 3        | 512   | 1850.2      | 24.5          | 23.3  | 0.748           | 0.985  |          |
|            |                        |             |              |            |               | 661   | 1880.0      | 24.5          | 23.2  | 0.758           | 1.020  |          |
|            |                        |             |              |            |               | 810   | 1909.8      | 24.5          | 23.6  | 0.873           | 1.080  | 6        |
|            |                        |             |              |            | Edge 4        | 661   | 1880.0      | 24.5          | 23.2  | 0.038           | 0.051  |          |
| Antenna    | RF Exposure Conditions | Mode        | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Power (dBm)   |       | 10-g SAR (W/kg) |        | Plot No. |
|            |                        |             |              |            |               |       |             | Tune-up limit | Meas. | Meas.           | Scaled |          |
| Main 1Ant. | Product Specific 10-g  | GPRS 1 Slot | Off          | 11         | Edge 3        | 661   | 1880.0      | 30.5          | 28.5  | 0.536           | 0.847  |          |
|            |                        | GPRS 2 Slot | On           | 0          | Edge 3        | 512   | 1850.2      | 24.5          | 23.3  | 1.380           | 1.832  |          |
|            |                        |             |              |            |               | 661   | 1880.0      | 24.5          | 23.3  | 1.520           | 2.005  | 7        |
|            |                        |             |              |            |               | 810   | 1909.8      | 24.5          | 23.5  | 1.600           | 1.995  |          |

**10.3. W-CDMA Band II**

| Antenna     | RF Exposure Conditions | Mode       | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Power (dBm)   |       | 1-g SAR (W/kg)  |        | Plot No. |
|-------------|------------------------|------------|--------------|------------|---------------|-------|-------------|---------------|-------|-----------------|--------|----------|
|             |                        |            |              |            |               |       |             | Tune-up limit | Meas. | Meas.           | Scaled |          |
| Main 1 Ant. | Head                   | Rel 99 RMC | Off          | 0          | Left Touch    | 9400  | 1880.0      | 23.0          | 21.6  | 0.021           | 0.028  | 8        |
|             |                        |            |              |            | Left Tilt     | 9400  | 1880.0      | 23.0          | 21.6  | 0.030           | 0.040  |          |
|             |                        |            |              |            | Right Touch   | 9400  | 1880.0      | 23.0          | 21.6  | 0.035           | 0.048  |          |
|             |                        |            |              |            | Right Tilt    | 9400  | 1880.0      | 23.0          | 21.6  | 0.032           | 0.044  |          |
|             | Body-worn              | Rel 99 RMC | Off          | 15         | Rear          | 9400  | 1880.0      | 23.0          | 21.6  | 0.510           | 0.697  | 9        |
|             |                        |            |              |            | Front         | 9400  | 1880.0      | 23.0          | 21.6  | 0.442           | 0.604  |          |
|             | Hotspot                | Rel 99 RMC | On           | 10         | Rear          | 9400  | 1880.0      | 19.5          | 17.8  | 0.346           | 0.510  | 10       |
|             |                        |            |              |            | Front         | 9400  | 1880.0      | 19.5          | 17.8  | 0.282           | 0.416  |          |
|             |                        |            |              |            | Edge 2        | 9400  | 1880.0      | 19.5          | 17.8  | 0.051           | 0.075  |          |
|             |                        |            |              |            | Edge 3        | 9262  | 1852.4      | 19.5          | 18.3  | 0.818           | 1.079  |          |
|             |                        |            |              |            |               | 9400  | 1880.0      | 19.5          | 17.8  | 0.730           | 1.076  |          |
|             |                        |            |              |            |               | 9538  | 1907.6      | 19.5          | 18.2  | 0.876           | 1.174  |          |
|             |                        |            |              |            | Edge 4        | 9400  | 1880.0      | 19.5          | 17.8  | 0.030           | 0.044  |          |
| Antenna     | RF Exposure Conditions | Mode       | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Power (dBm)   |       | 10-g SAR (W/kg) |        | Plot No. |
|             |                        |            |              |            |               |       |             | Tune-up limit | Meas. | Meas.           | Scaled |          |
| Main 1 Ant. | Product Specific 10-g  | Rel 99 RMC | Off          | 8          | Rear          | 9400  | 1880.0      | 23.0          | 21.6  | 0.586           | 0.801  |          |
|             |                        |            |              | 11         | Edge 3        | 9400  | 1880.0      | 23.0          | 21.6  | 0.890           | 1.216  |          |
|             |                        |            | On           | 0          | Rear          | 9400  | 1880.0      | 19.5          | 17.8  | 0.847           | 1.241  | 11       |
|             |                        |            |              | 0          | Edge 3        | 9262  | 1852.4      | 19.5          | 18.3  | 1.570           | 2.064  |          |
|             |                        |            |              |            |               | 9400  | 1880.0      | 19.5          | 17.8  | 1.530           | 2.242  |          |
|             |                        |            |              |            |               | 9538  | 1907.6      | 19.5          | 18.3  | 1.580           | 2.099  |          |
|             |                        |            |              |            |               |       |             |               |       |                 |        |          |

**10.4. W-CDMA Band IV**

| Antenna     | RF Exposure Conditions | Mode       | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Power (dBm)   |       | 1-g SAR (W/kg)  |        | Plot No. |
|-------------|------------------------|------------|--------------|------------|---------------|-------|-------------|---------------|-------|-----------------|--------|----------|
|             |                        |            |              |            |               |       |             | Tune-up limit | Meas. | Meas.           | Scaled |          |
| Main 1 Ant. | Head                   | Rel 99 RMC | Off          | 0          | Left Touch    | 1413  | 1732.6      | 23.5          | 22.4  | 0.080           | 0.104  | 12       |
|             |                        |            |              |            | Left Tilt     | 1413  | 1732.6      | 23.5          | 22.4  | 0.060           | 0.078  |          |
|             |                        |            |              |            | Right Touch   | 1413  | 1732.6      | 23.5          | 22.4  | 0.103           | 0.133  |          |
|             |                        |            |              |            | Right Tilt    | 1413  | 1732.6      | 23.5          | 22.4  | 0.046           | 0.060  |          |
|             | Body-worn              | Rel 99 RMC | Off          | 15         | Rear          | 1312  | 1712.4      | 23.5          | 22.3  | 0.747           | 0.976  | 13       |
|             |                        |            |              |            |               | 1413  | 1732.6      | 23.5          | 22.4  | 0.740           | 0.958  |          |
|             |                        |            |              |            |               | 1513  | 1752.6      | 23.5          | 22.1  | 0.637           | 0.883  |          |
|             |                        |            |              |            | Front         | 1413  | 1732.6      | 23.5          | 22.4  | 0.542           | 0.701  |          |
|             | Hotspot                | Rel 99 RMC | On           | 10         | Rear          | 1413  | 1732.6      | 19.5          | 18.7  | 0.610           | 0.740  | 14       |
|             |                        |            |              |            | Front         | 1413  | 1732.6      | 19.5          | 18.7  | 0.485           | 0.589  |          |
|             |                        |            |              |            | Edge 2        | 1413  | 1732.6      | 19.5          | 18.7  | 0.119           | 0.144  |          |
|             |                        |            |              |            | Edge 3        | 1312  | 1712.4      | 19.5          | 18.6  | 0.937           | 1.150  |          |
|             |                        |            |              |            |               | 1413  | 1732.6      | 19.5          | 18.7  | 1.020           | 1.238  |          |
|             |                        |            |              |            |               | 1513  | 1752.6      | 19.5          | 18.4  | 0.934           | 1.207  |          |
|             |                        |            |              |            | Edge 4        | 1413  | 1732.6      | 19.5          | 18.7  | 0.072           | 0.087  |          |
| Antenna     | RF Exposure Conditions | Mode       | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Power (dBm)   |       | 10-g SAR (W/kg) |        | Plot No. |
|             |                        |            |              |            |               |       |             | Tune-up limit | Meas. | Meas.           | Scaled |          |
| Main 1 Ant. | Product Specific 10-g  | Rel 99 RMC | Off          | 8          | Rear          | 1413  | 1732.6      | 23.5          | 22.4  | 0.925           | 1.197  |          |
|             |                        |            |              | 7          | Front         | 1413  | 1732.6      | 23.5          | 22.4  | 0.866           | 1.121  |          |
|             |                        |            |              | 11         | Edge 3        | 1413  | 1732.6      | 23.5          | 22.4  | 1.100           | 1.423  |          |
|             |                        |            | On           | 0          | Rear          | 1413  | 1732.6      | 19.5          | 18.6  | 1.330           | 1.635  | 15       |
|             |                        |            |              | 0          | Front         | 1413  | 1732.6      | 19.5          | 18.6  | 1.180           | 1.451  |          |
|             |                        |            |              | 0          | Edge 3        | 1312  | 1712.4      | 19.5          | 18.5  | 1.550           | 1.940  |          |
|             |                        |            |              |            |               | 1413  | 1732.6      | 19.5          | 18.6  | 1.520           | 1.869  |          |
|             |                        |            |              |            |               | 1513  | 1752.6      | 19.5          | 18.2  | 1.410           | 1.884  |          |
|             |                        |            |              |            |               |       |             |               |       |                 |        |          |

**10.5. W-CDMA Band V**

| Antenna     | RF Exposure Conditions | Mode       | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Power (dBm)   |       | 1-g SAR (W/kg) |        | Plot No. |
|-------------|------------------------|------------|--------------|------------|---------------|-------|-------------|---------------|-------|----------------|--------|----------|
|             |                        |            |              |            |               |       |             | Tune-up limit | Meas. | Meas.          | Scaled |          |
| Main 1 Ant. | Head                   | Rel 99 RMC | N/A          | 0          | Left Touch    | 4183  | 836.6       | 25.0          | 24.2  | 0.181          | 0.217  | 16       |
|             |                        |            |              |            | Left Tilt     | 4183  | 836.6       | 25.0          | 24.2  | 0.089          | 0.107  |          |
|             |                        |            |              |            | Right Touch   | 4183  | 836.6       | 25.0          | 24.2  | 0.105          | 0.126  |          |
|             |                        |            |              |            | Right Tilt    | 4183  | 836.6       | 25.0          | 24.2  | 0.104          | 0.125  |          |
|             | Body-worn              | Rel 99 RMC | N/A          | 15         | Rear          | 4183  | 836.6       | 25.0          | 24.2  | 0.320          | 0.383  | 17       |
|             |                        |            |              |            | Front         | 4183  | 836.6       | 25.0          | 24.2  | 0.253          | 0.303  |          |
|             | Hotspot                | Rel 99 RMC | N/A          | 10         | Rear          | 4183  | 836.6       | 25.0          | 24.2  | 0.613          | 0.734  | 18       |
|             |                        |            |              |            | Front         | 4183  | 836.6       | 25.0          | 24.2  | 0.431          | 0.516  |          |
|             |                        |            |              |            | Edge 2        | 4183  | 836.6       | 25.0          | 24.2  | 0.095          | 0.113  |          |
|             |                        |            |              |            | Edge 3        | 4183  | 836.6       | 25.0          | 24.2  | 0.382          | 0.458  |          |
|             |                        |            |              |            | Edge 4        | 4183  | 836.6       | 25.0          | 24.2  | 0.195          | 0.234  |          |

**10.6. LTE Band 12 (10MHz Bandwidth)**

| Antenna     | RF Exposure Conditions | Mode | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm)   |       | 1-g SAR (W/kg) |        | Plot No. |
|-------------|------------------------|------|--------------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|----------------|--------|----------|
|             |                        |      |              |            |               |       |             |               |           | Tune-up limit | Meas. | Meas.          | Scaled |          |
| Main 1 Ant. | Head                   | QPSK | N/A          | 0          | Left Touch    | 23095 | 707.5       | 1             | 0         | 25.0          | 24.1  | 0.132          | 0.162  | 19       |
|             |                        |      |              |            |               |       |             | 25            | 0         | 24.0          | 23.0  | 0.109          | 0.136  |          |
|             |                        |      |              |            | Left Tilt     | 23095 | 707.5       | 1             | 0         | 25.0          | 24.1  | 0.067          | 0.082  |          |
|             |                        |      |              |            |               |       |             | 25            | 0         | 24.0          | 23.0  | 0.053          | 0.067  |          |
|             |                        |      |              |            | Right Touch   | 23095 | 707.5       | 1             | 0         | 25.0          | 24.1  | 0.122          | 0.149  |          |
|             |                        |      |              |            |               |       |             | 25            | 0         | 24.0          | 23.0  | 0.094          | 0.118  |          |
|             |                        |      |              |            | Right Tilt    | 23095 | 707.5       | 1             | 0         | 25.0          | 24.1  | 0.079          | 0.096  |          |
|             |                        |      |              |            |               |       |             | 25            | 0         | 24.0          | 23.0  | 0.062          | 0.078  |          |
|             | Body-worn              | QPSK | N/A          | 15         | Rear          | 23095 | 707.5       | 1             | 0         | 25.0          | 24.1  | 0.224          | 0.274  | 20       |
|             |                        |      |              |            |               |       |             | 25            | 0         | 24.0          | 23.0  | 0.176          | 0.219  |          |
|             |                        |      |              |            | Front         | 23095 | 707.5       | 1             | 0         | 25.0          | 24.1  | 0.186          | 0.228  |          |
|             |                        |      |              |            |               |       |             | 25            | 0         | 24.0          | 23.0  | 0.148          | 0.184  |          |
|             | Hotspot                | QPSK | N/A          | 10         | Rear          | 23095 | 707.5       | 1             | 0         | 25.0          | 24.1  | 0.279          | 0.342  | 21       |
|             |                        |      |              |            |               |       |             | 25            | 0         | 24.0          | 23.0  | 0.217          | 0.270  |          |
|             |                        |      |              |            | Front         | 23095 | 707.5       | 1             | 0         | 25.0          | 24.1  | 0.184          | 0.225  |          |
|             |                        |      |              |            |               |       |             | 25            | 0         | 24.0          | 23.0  | 0.150          | 0.187  |          |
|             |                        |      |              |            | Edge 2        | 23095 | 707.5       | 1             | 0         | 25.0          | 24.1  | 0.139          | 0.170  |          |
|             |                        |      |              |            |               |       |             | 25            | 0         | 24.0          | 23.0  | 0.111          | 0.138  |          |
|             |                        |      |              |            | Edge 3        | 23095 | 707.5       | 1             | 0         | 25.0          | 24.1  | 0.141          | 0.173  |          |
|             |                        |      |              |            |               |       |             | 25            | 0         | 24.0          | 23.0  | 0.110          | 0.137  |          |
|             |                        |      |              |            | Edge 4        | 23095 | 707.5       | 1             | 0         | 25.0          | 24.1  | 0.227          | 0.278  |          |
|             |                        |      |              |            |               |       |             | 25            | 0         | 24.0          | 23.0  | 0.184          | 0.229  |          |

**10.7. LTE Band 13 (10MHz Bandwidth)**

| Antenna     | RF Exposure Conditions | Mode | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm)   |       | 1-g SAR (W/kg) |        | Plot No. |
|-------------|------------------------|------|--------------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|----------------|--------|----------|
|             |                        |      |              |            |               |       |             |               |           | Tune-up limit | Meas. | Meas.          | Scaled |          |
| Main 1 Ant. | Head                   | QPSK | N/A          | 0          | Left Touch    | 23230 | 782.0       | 1             | 49        | 25.0          | 24.1  | 0.174          | 0.215  | 22       |
|             |                        |      |              |            |               |       |             | 25            | 25        | 24.0          | 23.1  | 0.141          | 0.173  |          |
|             |                        |      |              |            | Left Tilt     | 23230 | 782.0       | 1             | 49        | 25.0          | 24.1  | 0.084          | 0.103  |          |
|             |                        |      |              |            |               |       |             | 25            | 25        | 24.0          | 23.1  | 0.067          | 0.082  |          |
|             |                        |      |              |            | Right Touch   | 23230 | 782.0       | 1             | 49        | 25.0          | 24.1  | 0.123          | 0.152  |          |
|             |                        |      |              |            |               |       |             | 25            | 25        | 24.0          | 23.1  | 0.101          | 0.124  |          |
|             |                        |      |              |            | Right Tilt    | 23230 | 782.0       | 1             | 49        | 25.0          | 24.1  | 0.097          | 0.120  |          |
|             |                        |      |              |            |               |       |             | 25            | 25        | 24.0          | 23.1  | 0.073          | 0.090  |          |
|             | Body-worn              | QPSK | N/A          | 15         | Rear          | 23230 | 782.0       | 1             | 49        | 25.0          | 24.1  | 0.308          | 0.380  | 23       |
|             |                        |      |              |            |               |       |             | 25            | 25        | 24.0          | 23.1  | 0.244          | 0.299  |          |
|             |                        |      |              |            | Front         | 23230 | 782.0       | 1             | 49        | 25.0          | 24.1  | 0.246          | 0.303  |          |
|             |                        |      |              |            |               |       |             | 25            | 25        | 24.0          | 23.1  | 0.198          | 0.243  |          |
|             | Hotspot                | QPSK | N/A          | 10         | Rear          | 23230 | 782.0       | 1             | 49        | 25.0          | 24.1  | 0.461          | 0.569  | 24       |
|             |                        |      |              |            |               |       |             | 25            | 25        | 24.0          | 23.1  | 0.351          | 0.431  |          |
|             |                        |      |              |            | Front         | 23230 | 782.0       | 1             | 49        | 25.0          | 24.1  | 0.329          | 0.406  |          |
|             |                        |      |              |            |               |       |             | 25            | 25        | 24.0          | 23.1  | 0.263          | 0.323  |          |
|             |                        |      |              |            | Edge 2        | 23230 | 782.0       | 1             | 49        | 25.0          | 24.1  | 0.103          | 0.127  |          |
|             |                        |      |              |            |               |       |             | 25            | 25        | 24.0          | 23.1  | 0.083          | 0.102  |          |
|             |                        |      |              |            | Edge 3        | 23230 | 782.0       | 1             | 49        | 25.0          | 24.1  | 0.273          | 0.337  |          |
|             |                        |      |              |            |               |       |             | 25            | 25        | 24.0          | 23.1  | 0.217          | 0.266  |          |
|             |                        |      |              |            | Edge 4        | 23230 | 782.0       | 1             | 49        | 25.0          | 24.1  | 0.271          | 0.334  |          |
|             |                        |      |              |            |               |       |             | 25            | 25        | 24.0          | 23.1  | 0.216          | 0.265  |          |

**10.8. LTE Band 25 (20MHz Bandwidth)**

| Antenna     | RF Exposure Conditions | Mode | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm)   |       | 1-g SAR (W/kg)  |        | Plot No. |
|-------------|------------------------|------|--------------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|-----------------|--------|----------|
|             |                        |      |              |            |               |       |             |               |           | Tune-up limit | Meas. | Meas.           | Scaled |          |
| Main 1 Ant. | Head                   | QPSK | Off          | 0          | Left Touch    | 26590 | 1905.0      | 1             | 0         | 23.0          | 22.0  | 0.058           | 0.073  | 25       |
|             |                        |      |              |            |               |       |             | 50            | 0         | 22.0          | 21.0  | 0.045           | 0.056  |          |
|             |                        |      |              |            | Left Tilt     | 26590 | 1905.0      | 1             | 0         | 23.0          | 22.0  | 0.058           | 0.073  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 22.0          | 21.0  | 0.045           | 0.057  |          |
|             |                        |      |              |            | Right Touch   | 26590 | 1905.0      | 1             | 0         | 23.0          | 22.0  | 0.086           | 0.109  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 22.0          | 21.0  | 0.065           | 0.082  |          |
|             |                        |      |              |            | Right Tilt    | 26590 | 1905.0      | 1             | 0         | 23.0          | 22.0  | 0.040           | 0.050  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 22.0          | 21.0  | 0.029           | 0.037  |          |
|             | Body-w orn             | QPSK | Off          | 15         | Rear          | 26590 | 1905.0      | 1             | 0         | 23.0          | 22.0  | 0.597           | 0.757  | 26       |
|             |                        |      |              |            |               |       |             | 50            | 0         | 22.0          | 21.0  | 0.468           | 0.590  |          |
|             |                        |      |              |            | Front         | 26590 | 1905.0      | 1             | 0         | 23.0          | 22.0  | 0.433           | 0.549  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 22.0          | 21.0  | 0.336           | 0.424  |          |
|             | Hotspot                | QPSK | On           | 10         | Rear          | 26590 | 1905.0      | 1             | 0         | 19.0          | 18.5  | 0.523           | 0.583  | 27       |
|             |                        |      |              |            |               |       |             | 50            | 0         | 19.0          | 18.5  | 0.519           | 0.589  |          |
|             |                        |      |              |            | Front         | 26590 | 1905.0      | 1             | 0         | 19.0          | 18.5  | 0.377           | 0.420  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 19.0          | 18.5  | 0.368           | 0.418  |          |
|             |                        |      |              |            | Edge 2        | 26590 | 1905.0      | 1             | 0         | 19.0          | 18.5  | 0.062           | 0.069  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 19.0          | 18.5  | 0.062           | 0.070  |          |
|             |                        |      |              |            | Edge 3        | 26140 | 1860.0      | 1             | 0         | 19.0          | 18.3  | 0.977           | 1.140  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 19.0          | 18.4  | 0.971           | 1.128  |          |
|             |                        |      |              |            |               | 26365 | 1882.5      | 1             | 0         | 19.0          | 18.0  | 0.924           | 1.153  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 19.0          | 18.0  | 0.916           | 1.153  |          |
|             |                        |      |              |            |               | 26590 | 1905.0      | 1             | 0         | 19.0          | 18.5  | 1.070           | 1.192  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 19.0          | 18.5  | 1.040           | 1.180  |          |
|             |                        |      |              |            |               |       |             | 100           | 0         | 19.0          | 18.3  | 1.060           | 1.232  |          |
|             |                        |      |              |            |               |       |             | 1             | 0         | 19.0          | 18.5  | 0.035           | 0.039  |          |
|             |                        |      |              |            | Edge 4        | 26590 | 1905.0      | 1             | 0         | 19.0          | 18.5  | 0.035           | 0.040  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 19.0          | 18.5  | 0.035           | 0.040  |          |
| Antenna     | RF Exposure Conditions | Mode | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm)   |       | 10-g SAR (W/kg) |        | Plot No. |
|             |                        |      |              |            |               |       |             |               |           | Tune-up limit | Meas. | Meas.           | Scaled |          |
| Main 1 Ant. | Product Specific 10-g  | QPSK | Off          | 8          | Rear          | 26590 | 1905.0      | 1             | 0         | 23.0          | 22.0  | 0.863           | 1.094  | 28       |
|             |                        |      |              |            |               |       |             | 50            | 0         | 22.0          | 21.0  | 0.671           | 0.846  |          |
|             |                        |      |              | 11         | Edge 3        | 26590 | 1905.0      | 1             | 0         | 23.0          | 22.0  | 1.050           | 1.331  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 22.0          | 21.0  | 0.817           | 1.030  |          |
|             |                        |      | On           | 0          | Rear          | 26590 | 1905.0      | 1             | 0         | 19.0          | 18.5  | 1.390           | 1.552  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 19.0          | 18.4  | 1.380           | 1.584  |          |
|             |                        |      |              | 0          | Edge 3        | 26590 | 1905.0      | 1             | 0         | 19.0          | 18.5  | 1.600           | 1.787  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 19.0          | 18.4  | 1.560           | 1.791  |          |

**Additional Test (LTE Band 2, Proximity Sensor back-off)**

| Antenna     | RF Exposure Conditions | Mode | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm)   |       | 10-g SAR (W/kg) |        | Plot No |
|-------------|------------------------|------|--------------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|-----------------|--------|---------|
|             |                        |      |              |            |               |       |             |               |           | Tune-up limit | Meas. | Meas.           | Scaled |         |
| Main 1 Ant. | Product Specific 10-g  | QPSK | On           | 0          | Rear          | 18700 | 1860.0      | 1             | 0         | 19.5          | 18.4  | 1.040           | 1.325  |         |
|             |                        |      |              |            |               |       |             | 50            | 0         | 19.5          | 18.4  | 1.040           | 1.331  |         |
|             |                        |      |              | 0          | Edge 3        | 18700 | 1860.0      | 1             | 0         | 19.5          | 18.4  | 1.820           | 2.319  |         |
|             |                        |      |              |            |               |       |             | 50            | 0         | 19.5          | 18.4  | 1.820           | 2.330  |         |
|             |                        |      |              |            |               |       |             | 100           | 0         | 19.5          | 18.4  | 1.820           | 2.343  |         |
|             |                        |      |              |            |               |       |             | 1             | 0         | 19.5          | 18.1  | 1.860           | 2.565  |         |
|             |                        |      |              |            |               | 18900 | 1880.0      | 50            | 0         | 19.5          | 18.0  | 1.870           | 2.618  | 29      |
|             |                        |      |              |            |               |       |             | 1             | 0         | 19.5          | 18.4  | 1.820           | 2.365  |         |
|             |                        |      |              |            |               | 19100 | 1900.0      | 50            | 0         | 19.5          | 18.3  | 1.820           | 2.375  |         |
|             |                        |      |              |            |               |       |             |               |           |               |       |                 |        |         |

**Note(s):**

LTE Band 2 could be covered by LTE Band 25 in Head/Body-worn/Hotspot exposure because LTE Band 2 and LTE Band 25 have the same target power. For Proximity Sensor back-off mode, LTE Band 2 has higher target power than LTE Band 25, therefore required SAR test in Product Specific 10-g SAR with 0mm for LTE Band 2 was performed.

**10.9. LTE Band 26 (15MHz Bandwidth)**

| Antenna     | RF Exposure Conditions | Mode | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm)   |       | 1-g SAR (W/kg) |        | Plot No. |
|-------------|------------------------|------|--------------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|----------------|--------|----------|
|             |                        |      |              |            |               |       |             |               |           | Tune-up limit | Meas. | Meas.          | Scaled |          |
| Main 1 Ant. | Head                   | QPSK | NA           | 0          | Left Touch    | 26865 | 831.5       | 1             | 0         | 25.0          | 24.3  | 0.139          | 0.165  | 30       |
|             |                        |      |              |            |               |       |             | 36            | 0         | 24.0          | 23.2  | 0.112          | 0.135  |          |
|             |                        |      |              |            | Left Tilt     | 26865 | 831.5       | 1             | 0         | 25.0          | 24.3  | 0.081          | 0.096  |          |
|             |                        |      |              |            |               |       |             | 36            | 0         | 24.0          | 23.2  | 0.068          | 0.082  |          |
|             |                        |      |              |            | Right Touch   | 26865 | 831.5       | 1             | 0         | 25.0          | 24.3  | 0.085          | 0.100  |          |
|             |                        |      |              |            |               |       |             | 36            | 0         | 24.0          | 23.2  | 0.070          | 0.084  |          |
|             |                        |      |              |            | Right Tilt    | 26865 | 831.5       | 1             | 0         | 25.0          | 24.3  | 0.083          | 0.098  |          |
|             |                        |      |              |            |               |       |             | 36            | 0         | 24.0          | 23.2  | 0.068          | 0.082  |          |
|             | Body-worn              | QPSK | NA           | 15         | Rear          | 26865 | 831.5       | 1             | 0         | 25.0          | 24.3  | 0.236          | 0.280  | 31       |
|             |                        |      |              |            |               |       |             | 36            | 0         | 24.0          | 23.2  | 0.211          | 0.254  |          |
|             |                        |      |              |            | Front         | 26865 | 831.5       | 1             | 0         | 25.0          | 24.3  | 0.208          | 0.246  |          |
|             |                        |      |              |            |               |       |             | 36            | 0         | 24.0          | 23.2  | 0.176          | 0.212  |          |
|             | Hotspot                | QPSK | NA           | 10         | Rear          | 26865 | 831.5       | 1             | 0         | 25.0          | 24.3  | 0.546          | 0.647  | 32       |
|             |                        |      |              |            |               |       |             | 36            | 0         | 24.0          | 23.2  | 0.455          | 0.548  |          |
|             |                        |      |              |            | Front         | 26865 | 831.5       | 1             | 0         | 25.0          | 24.3  | 0.356          | 0.422  |          |
|             |                        |      |              |            |               |       |             | 36            | 0         | 24.0          | 23.2  | 0.304          | 0.366  |          |
|             |                        |      |              |            | Edge 2        | 26865 | 831.5       | 1             | 0         | 25.0          | 24.3  | 0.058          | 0.069  |          |
|             |                        |      |              |            |               |       |             | 36            | 0         | 24.0          | 23.2  | 0.051          | 0.062  |          |
|             |                        |      |              |            | Edge 3        | 26865 | 831.5       | 1             | 0         | 25.0          | 24.3  | 0.311          | 0.369  |          |
|             |                        |      |              |            |               |       |             | 36            | 0         | 24.0          | 23.2  | 0.259          | 0.312  |          |
|             |                        |      |              |            | Edge 4        | 26865 | 831.5       | 1             | 0         | 25.0          | 24.3  | 0.156          | 0.185  |          |
|             |                        |      |              |            |               |       |             | 36            | 0         | 24.0          | 23.2  | 0.127          | 0.153  |          |

**10.10. LTE Band 41 (20MHz Bandwidth)****LTE Band 41 Power Class 3**

| Antenna     | RF Exposure Conditions | Mode | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm)   |       | 1-g SAR (W/kg)  |        | Plot No. |
|-------------|------------------------|------|--------------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|-----------------|--------|----------|
|             |                        |      |              |            |               |       |             |               |           | Tune-up limit | Meas. | Meas.           | Scaled |          |
| Main 2 Ant. | Head                   | QPSK | Off          | 0          | Left Touch    | 40185 | 2549.5      | 1             | 0         | 24.0          | 22.8  | 0.039           | 0.051  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 23.0          | 21.8  | 0.030           | 0.039  |          |
|             |                        |      |              |            | Left Tilt     | 40185 | 2549.5      | 1             | 0         | 24.0          | 22.8  | 0.054           | 0.070  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 23.0          | 21.8  | 0.042           | 0.056  |          |
|             |                        |      |              |            | Right Touch   | 40185 | 2549.5      | 1             | 0         | 24.0          | 22.8  | 0.059           | 0.078  | 33       |
|             |                        |      |              |            |               |       |             | 50            | 0         | 23.0          | 21.8  | 0.043           | 0.057  |          |
|             |                        |      |              |            | Right Tilt    | 40185 | 2549.5      | 1             | 0         | 24.0          | 22.8  | 0.039           | 0.051  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 23.0          | 21.8  | 0.032           | 0.043  |          |
|             | Body-worn              | QPSK | Off          | 15         | Rear          | 40185 | 2549.5      | 1             | 0         | 24.0          | 22.8  | 0.394           | 0.518  | 34       |
|             |                        |      |              |            |               |       |             | 50            | 0         | 23.0          | 21.8  | 0.309           | 0.408  |          |
|             |                        |      |              |            | Front         | 40185 | 2549.5      | 1             | 0         | 24.0          | 22.8  | 0.321           | 0.422  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 23.0          | 21.8  | 0.251           | 0.332  |          |
|             | Hotspot                | QPSK | On           | 10         | Rear          | 40185 | 2549.5      | 1             | 0         | 21.0          | 19.9  | 0.276           | 0.358  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 21.0          | 19.9  | 0.273           | 0.356  |          |
|             |                        |      |              |            | Front         | 40185 | 2549.5      | 1             | 0         | 21.0          | 19.9  | 0.249           | 0.323  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 21.0          | 19.9  | 0.249           | 0.324  |          |
|             |                        |      |              |            | Edge 2        | 40185 | 2549.5      | 1             | 0         | 21.0          | 19.9  | 0.076           | 0.099  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 21.0          | 19.9  | 0.077           | 0.100  |          |
|             |                        |      |              |            | Edge 3        | 39750 | 2506.0      | 1             | 0         | 21.0          | 19.7  | 0.743           | 1.005  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 21.0          | 19.7  | 0.770           | 1.034  | 35       |
|             |                        |      |              |            |               | 40185 | 2549.5      | 1             | 0         | 21.0          | 19.9  | 0.734           | 0.952  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 21.0          | 19.9  | 0.729           | 0.950  |          |
|             |                        |      |              |            |               |       |             | 100           | 0         | 21.0          | 20.2  | 0.636           | 0.763  |          |
|             |                        |      |              |            |               | 40620 | 2593.0      | 1             | 0         | 21.0          | 19.8  | 0.552           | 0.725  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 21.0          | 19.8  | 0.517           | 0.685  |          |
|             |                        |      |              |            |               | 41055 | 2636.5      | 1             | 0         | 21.0          | 19.7  | 0.431           | 0.580  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 21.0          | 19.6  | 0.433           | 0.600  |          |
|             |                        |      |              |            |               | 41490 | 2680.0      | 1             | 0         | 21.0          | 19.8  | 0.394           | 0.523  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 21.0          | 19.6  | 0.389           | 0.532  |          |
| Antenna     | RF Exposure Conditions | Mode | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm)   |       | 10-g SAR (W/kg) |        | Plot No. |
|             |                        |      |              |            |               |       |             |               |           | Tune-up limit | Meas. | Meas.           | Scaled |          |
| Main 2 Ant. | Product Specific 10-g  | QPSK | Off          | 11         | Edge 3        | 40185 | 2549.5      | 1             | 0         | 24.0          | 22.8  | 0.600           | 0.788  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 23.0          | 21.8  | 0.481           | 0.636  |          |
|             |                        |      | On           | 0          | Edge 3        | 39750 | 2506.0      | 1             | 0         | 21.0          | 19.8  | 1.360           | 1.804  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 21.0          | 19.8  | 1.390           | 1.826  |          |
|             |                        |      |              |            |               | 40185 | 2549.5      | 1             | 0         | 21.0          | 19.9  | 1.390           | 1.808  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 21.0          | 19.9  | 1.430           | 1.859  | 36       |
|             |                        |      |              |            |               |       |             | 100           | 0         | 21.0          | 19.9  | 1.200           | 1.562  |          |
|             |                        |      |              |            |               | 40620 | 2593.0      | 1             | 0         | 21.0          | 19.8  | 0.792           | 1.036  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 21.0          | 19.8  | 0.793           | 1.057  |          |
|             |                        |      |              |            |               | 41055 | 2636.5      | 1             | 0         | 21.0          | 19.6  | 0.766           | 1.054  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 21.0          | 19.6  | 0.775           | 1.075  |          |
|             |                        |      |              |            |               | 41490 | 2680.0      | 1             | 0         | 21.0          | 19.8  | 0.812           | 1.064  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 21.0          | 19.7  | 0.822           | 1.119  |          |

**LTE Band 41 Power Class 2**

| Antenna     | RF Exposure Conditions | Mode | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm)   |       | 1-g SAR (W/kg) |        | 10-g SAR (W/kg) |        | Plot No. |
|-------------|------------------------|------|--------------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|----------------|--------|-----------------|--------|----------|
|             |                        |      |              |            |               |       |             |               |           | Tune-up limit | Meas. | Meas.          | Scaled | Meas.           | Scaled |          |
| Main 2 Ant. | Head                   | QPSK | Off          | 0          | Left Touch    | 40185 | 2549.5      | 1             | 0         | 25.5          | 24.4  | 0.050          | 0.064  |                 |        |          |
|             | Body-worn              | QPSK | Off          | 15         | Rear          | 40185 | 2549.5      | 1             | 0         | 25.5          | 24.4  | 0.376          | 0.484  |                 |        |          |
|             | Product Specific 10-g  | QPSK | Off          | 11         | Edge 3        | 40185 | 2549.5      | 1             | 0         | 25.5          | 24.4  |                |        | 0.571           | 0.734  |          |

From May 2017 TCB Workshop, SAR tested were performed using Power Class 3. SAR test for Power Class 2 is tested using the highest SAR test configuration in Power Class 3 for each LTE configuration and exposure condition combination. According to the highest time average power for UL-DL configurations, configuration # 1 with duty cycle 43.3% is used for Power Class 2 SAR test.

Additional SAR testing for Power Class 2 is not required when;

- The reported SAR vs. output power can be linearly scaled with < 10% discrepancy between power classes and all reported SAR are < 1.4 W/kg

**Reported SAR vs. Output Power linearly scaled**

| Antenna     | RF Exposure Conditions | Power Class 2  |                     |                       |                     | Power Class 3  |                     |                       |                     | PC 2 linearly Scaled Reported SAR (W/kg) | Linearly scaled (%) |
|-------------|------------------------|----------------|---------------------|-----------------------|---------------------|----------------|---------------------|-----------------------|---------------------|------------------------------------------|---------------------|
|             |                        | Duty Cycle (%) | Tune-up Power (dBm) | Frame Avg. Power (mW) | Reported SAR (W/kg) | Duty Cycle (%) | Tune-up Power (dBm) | Frame Avg. Power (mW) | Reported SAR (W/kg) |                                          |                     |
| Main 2 Ant. | Head                   | 43.3           | 25.5                | 153.6                 | 0.064               | 63.3           | 24.0                | 159.0                 | 0.070               | 0.066                                    | -5.4                |
|             | Body-worn              | 43.3           | 25.5                | 153.6                 | 0.484               | 63.3           | 24.0                | 159.0                 | 0.465               | 0.501                                    | 7.7                 |
|             | Product Specific 10-g  | 43.3           | 25.5                | 153.6                 | 0.734               | 63.3           | 24.0                | 159.0                 | 0.708               | 0.760                                    | 7.3                 |

**Conclusion:**

Simultaneous SAR test for Power Class 2 is not required base on the reported SAR < 1.4 W/kg and reported SAR vs. output power linearly scaled < 10%.

**10.11. LTE Band 66 (20MHz Bandwidth)**

| Antenna       | RF Exposure Conditions | Mode                   | PWR Back-off | Dist. (mm)   | Test Position | Ch #.         | Freq. (MHz) | RB Allocation | RB offset     | Power (dBm)   |             | 1-g SAR (W/kg) |                 | Plot No. |
|---------------|------------------------|------------------------|--------------|--------------|---------------|---------------|-------------|---------------|---------------|---------------|-------------|----------------|-----------------|----------|
|               |                        |                        |              |              |               |               |             |               |               | Tune-up limit | Meas.       | Meas.          | Scaled          |          |
| Main 1 Ant.   | Head                   | QPSK                   | Off          | 0            | Left Touch    | 132072        | 1720.0      | 1             | 0             | 23.0          | 22.1        | 0.095          | 0.116           |          |
|               |                        |                        |              |              |               |               |             | 50            | 0             | 22.0          | 21.1        | 0.073          | 0.090           |          |
|               |                        |                        |              |              | Left Tilt     | 132072        | 1720.0      | 1             | 0             | 23.0          | 22.1        | 0.097          | 0.118           |          |
|               |                        |                        |              |              |               |               |             | 50            | 0             | 22.0          | 21.1        | 0.070          | 0.086           |          |
|               |                        |                        |              |              | Right Touch   | 132072        | 1720.0      | 1             | 0             | 23.0          | 22.1        | 0.103          | 0.126           | 37       |
|               |                        |                        |              |              |               |               |             | 50            | 0             | 22.0          | 21.1        | 0.081          | 0.100           |          |
|               |                        |                        |              |              | Right Tilt    | 132072        | 1720.0      | 1             | 0             | 23.0          | 22.1        | 0.063          | 0.077           |          |
|               |                        |                        |              |              |               |               |             | 50            | 0             | 22.0          | 21.1        | 0.051          | 0.063           |          |
|               | Body-w orn             | QPSK                   | Off          | 15           | Rear          | 132072        | 1720.0      | 1             | 0             | 23.0          | 22.1        | 0.847          | 1.032           | 38       |
|               |                        |                        |              |              |               |               |             | 50            | 0             | 22.0          | 21.1        | 0.673          | 0.827           |          |
|               |                        |                        |              |              |               |               |             | 100           | 0             | 22.0          | 21.1        | 0.567          | 0.700           |          |
|               |                        |                        |              |              |               | 132322        | 1745.0      | 1             | 0             | 23.0          | 21.9        | 0.736          | 0.944           |          |
|               |                        |                        |              |              |               |               |             | 50            | 0             | 22.0          | 20.9        | 0.582          | 0.751           |          |
|               |                        |                        |              |              | 132572        | 1770.0        | 1           | 0             | 23.0          | 21.8          | 0.625       | 0.831          |                 |          |
|               |                        |                        |              |              |               |               | 50          | 0             | 22.0          | 20.7          | 0.476       | 0.635          |                 |          |
|               |                        |                        |              |              | Front         | 132072        | 1720.0      | 1             | 0             | 23.0          | 22.1        | 0.627          | 0.764           |          |
|               |                        |                        |              |              |               |               |             | 50            | 0             | 22.0          | 21.1        | 0.497          | 0.610           |          |
|               |                        |                        |              |              |               |               |             | Hotspot       | QPSK          | On            | 10          | Rear           | 132072          | 1720.0   |
|               | 50                     | 0                      | 19.5         | 18.6         | 0.552         | 0.671         |             |               |               |               |             |                |                 |          |
|               | Front                  | 132072                 | 1720.0       | 1            | 0             | 19.5          | 18.7        |               |               |               |             | 0.471          | 0.568           |          |
|               |                        |                        |              | 50           | 0             | 19.5          | 18.6        |               |               |               |             | 0.466          | 0.567           |          |
|               | Edge 2                 | 132072                 | 1720.0       | 1            | 0             | 19.5          | 18.7        |               |               |               |             | 0.133          | 0.160           |          |
|               |                        |                        |              | 50           | 0             | 19.5          | 18.6        |               |               |               |             | 0.130          | 0.158           |          |
|               | Edge 3                 | 132072                 | 1720.0       | 1            | 0             | 19.5          | 18.7        |               |               |               |             | 1.000          | 1.205           |          |
|               |                        |                        |              | 50           | 0             | 19.5          | 18.6        |               |               |               |             | 1.020          | 1.241           |          |
|               |                        |                        |              | 100          | 0             | 19.5          | 18.6        |               |               |               |             | 1.020          | 1.247           |          |
|               |                        | 132322                 | 1745.0       | 1            | 0             | 19.5          | 18.5        |               |               |               |             | 0.994          | 1.261           |          |
|               |                        |                        |              | 50           | 0             | 19.5          | 18.4        |               |               |               |             | 0.992          | 1.289           |          |
|               | 132572                 | 1770.0                 | 1            | 0            | 19.5          | 18.3          | 0.983       |               |               |               |             | 1.283          |                 |          |
|               |                        |                        | 50           | 0            | 19.5          | 18.2          | 0.966       |               |               |               |             | 1.291          | 39              |          |
|               | Edge 4                 | 132072                 | 1720.0       | 1            | 0             | 19.5          | 18.7        |               |               |               |             | 0.077          | 0.093           |          |
|               |                        |                        |              | 50           | 0             | 19.5          | 18.6        |               |               |               |             | 0.079          | 0.096           |          |
|               | Antenna                | RF Exposure Conditions | Mode         | PWR Back-off | Dist. (mm)    | Test Position | Ch #.       | Freq. (MHz)   | RB Allocation | RB offset     | Power (dBm) |                | 10-g SAR (W/kg) |          |
| Tune-up limit | Meas.                  | Meas.                  | Scaled       |              |               |               |             |               |               |               |             |                |                 |          |
| Main 1 Ant.   | Product Specific 10-g  | QPSK                   | Off          | 8            | Rear          | 132072        | 1720.0      | 1             | 0             | 23.0          | 22.1        | 0.995          | 1.213           |          |
|               |                        |                        |              |              |               |               |             | 50            | 0             | 22.0          | 21.1        | 0.795          | 0.976           |          |
|               |                        |                        |              | 7            | Front         | 132072        | 1720.0      | 1             | 0             | 23.0          | 22.1        | 0.889          | 1.084           |          |
|               |                        |                        |              |              |               |               |             | 50            | 0             | 22.0          | 21.1        | 0.710          | 0.872           |          |
|               |                        |                        |              | 11           | Edge 3        | 132072        | 1720.0      | 1             | 0             | 23.0          | 22.1        | 1.100          | 1.341           |          |
|               |                        |                        |              |              |               |               |             | 50            | 0             | 22.0          | 21.1        | 0.874          | 1.073           |          |
|               |                        |                        | On           | 0            | Rear          | 132072        | 1720.0      | 1             | 0             | 19.5          | 18.7        | 1.410          | 1.713           |          |
|               |                        |                        |              |              |               |               |             | 50            | 0             | 19.5          | 18.7        | 1.400          | 1.700           |          |
|               |                        |                        |              | 0            | Front         | 132072        | 1720.0      | 1             | 0             | 19.5          | 18.7        | 1.220          | 1.482           |          |
|               |                        |                        |              |              |               |               |             | 50            | 0             | 19.5          | 18.7        | 1.210          | 1.469           |          |
|               |                        |                        |              | 0            | Edge 3        | 132072        | 1720.0      | 1             | 0             | 19.5          | 18.7        | 1.560          | 1.895           | 40       |
|               |                        |                        |              |              |               |               |             | 50            | 0             | 19.5          | 18.7        | 1.550          | 1.882           |          |

**Additional Test (LTE Band 4, Proximity Sensor back-off)**

| Antenna     | RF Exposure Conditions | Mode | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm)   |       | 10-g SAR (W/kg) |        | Plot No. |
|-------------|------------------------|------|--------------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|-----------------|--------|----------|
|             |                        |      |              |            |               |       |             |               |           | Tune-up limit | Meas. | Meas.           | Scaled |          |
| Main 1 Ant. | Product Specific 10-g  | QPSK | On           | 0          | Rear          | 20175 | 1732.5      | 1             | 0         | 20.0          | 18.9  | 1.390           | 1.775  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 20.0          | 19.0  | 1.380           | 1.747  |          |
|             |                        |      |              | 0          | Front         | 20175 | 1732.5      | 1             | 0         | 20.0          | 18.9  | 1.460           | 1.864  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 20.0          | 19.0  | 1.450           | 1.835  |          |
|             |                        |      |              | 0          | Edge 3        | 20175 | 1732.5      | 1             | 0         | 20.0          | 18.9  | 1.960           | 2.503  |          |
|             |                        |      |              |            |               |       |             | 50            | 0         | 20.0          | 19.0  | 1.960           | 2.481  |          |
|             |                        |      |              |            |               |       |             | 100           | 0         | 20.0          | 18.8  | 1.930           | 2.523  | 41       |
|             |                        |      |              |            |               |       |             |               |           |               |       |                 |        |          |

**Note(s):**

LTE Band 4 could be covered by LTE Band 66 in Head/Body-worn/Hotspot exposure because LTE Band 4 and LTE Band 66 have the same target power. For Proximity Sensor back-off mode, LTE Band 4 has higher target power than LTE Band 66, therefore required SAR test in Product Specific 10-g SAR with 0mm for LTE Band 4 was performed.

**10.12. Wi-Fi (DTS Band)**

| Antenna           | Frequency Band | Mode           | RF Exposure Conditions | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Area Scan Max. SAR (W/kg) | Duty Cycle (%) | Power (dBm)   |       | 1-g SAR (W/kg) |        | Note | Plot No. |
|-------------------|----------------|----------------|------------------------|--------------|------------|---------------|-------|-------------|---------------------------|----------------|---------------|-------|----------------|--------|------|----------|
|                   |                |                |                        |              |            |               |       |             |                           |                | Tune-up limit | Meas. | Meas.          | Scaled |      |          |
| SISO (WiFi Ant.1) | 2.4GHz         | 802.11b 1 Mbps | Head                   | On           | 0          | Left Touch    | 6     | 2437.0      | 0.274                     | 99.5%          | 17.0          | 16.7  |                |        |      |          |
|                   |                |                |                        |              |            | Left Tilt     | 6     | 2437.0      | 0.345                     | 99.5%          | 17.0          | 16.7  |                |        |      |          |
|                   |                |                |                        |              |            | Right Touch   | 6     | 2437.0      | 0.475                     | 99.5%          | 17.0          | 16.7  | 0.343          | 0.370  | 1    | 42       |
|                   |                |                |                        |              |            | Right Tilt    | 6     | 2437.0      | 0.390                     | 99.5%          | 17.0          | 16.7  |                |        |      |          |
|                   |                |                | Body-worn              | Off          | 15         | Rear          | 6     | 2437.0      | 0.185                     | 99.5%          | 21.0          | 20.7  | 0.145          | 0.157  | 1    | 43       |
|                   |                |                |                        |              |            | Front         | 6     | 2437.0      | 0.097                     | 99.5%          | 21.0          | 20.7  |                |        |      |          |
|                   |                |                |                        |              |            | Rear          | 6     | 2437.0      | 0.341                     | 99.5%          | 21.0          | 20.7  | 0.235          | 0.254  |      |          |
|                   |                |                |                        |              |            | Front         | 6     | 2437.0      | 0.165                     | 99.5%          | 21.0          | 20.7  |                |        |      |          |
|                   |                |                | Hotspot                | Off          | 10         | Edge 1        | 6     | 2437.0      | 0.431                     | 99.5%          | 21.0          | 20.7  | 0.404          | 0.437  | 2    | 44       |
|                   |                |                |                        |              |            | Edge 4        | 6     | 2437.0      | 0.035                     | 99.5%          | 21.0          | 20.7  |                |        |      |          |
|                   |                |                |                        |              |            |               |       |             |                           |                |               |       |                |        |      |          |
|                   |                |                |                        |              |            |               |       |             |                           |                |               |       |                |        |      |          |
| SISO (WiFi Ant.2) | 2.4GHz         | 802.11b 1 Mbps | Head                   | On           | 0          | Left Touch    | 6     | 2437.0      | 0.006                     | 99.5%          | 17.0          | 15.9  |                |        |      |          |
|                   |                |                |                        |              |            | Left Tilt     | 6     | 2437.0      | 0.009                     | 99.5%          | 17.0          | 15.9  |                |        |      |          |
|                   |                |                |                        |              |            | Right Touch   | 6     | 2437.0      | 0.015                     | 99.5%          | 17.0          | 15.9  | 0.011          | 0.014  | 1    |          |
|                   |                |                |                        |              |            | Right Tilt    | 6     | 2437.0      | 0.010                     | 99.5%          | 17.0          | 15.9  |                |        |      |          |
|                   |                |                | Body-worn              | Off          | 15         | Rear          | 6     | 2437.0      | 0.136                     | 99.5%          | 21.0          | 20.4  | 0.093          | 0.108  | 1    |          |
|                   |                |                |                        |              |            | Front         | 6     | 2437.0      | 0.012                     | 99.5%          | 21.0          | 20.4  |                |        |      |          |
|                   |                |                |                        |              |            | Rear          | 6     | 2437.0      | 0.351                     | 99.5%          | 21.0          | 20.4  | 0.226          | 0.263  | 1    |          |
|                   |                |                |                        |              |            | Front         | 6     | 2437.0      | 0.022                     | 99.5%          | 21.0          | 20.4  |                |        |      |          |
|                   |                |                | Hotspot                | Off          | 10         | Edge 1        | 6     | 2437.0      | 0.034                     | 99.5%          | 21.0          | 20.4  |                |        |      |          |
|                   |                |                |                        |              |            | Edge 4        | 6     | 2437.0      | 0.077                     | 99.5%          | 21.0          | 20.4  |                |        |      |          |
|                   |                |                |                        |              |            |               |       |             |                           |                |               |       |                |        |      |          |
|                   |                |                |                        |              |            |               |       |             |                           |                |               |       |                |        |      |          |

**Note(s):**

- When the Highest reported SAR is  $\leq 0.4$  or  $1.0$  W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
- Highest reported SAR is  $> 0.4$  or  $1.0$  W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR  $\leq 0.8$  or  $2.0$  W/kg (1-g or 10-g respectively) was reported.
- Testing for a second channel was required because the reported SAR for this test position was  $> 0.8$  or  $2.0$  W/kg (1-g or 10-g respectively).
- Additional testing required in order satisfying FCC simultaneous transmission limit criteria.
- SAR testing is not required for OFDM mode(s) when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2$  W/kg.

**10.13. Wi-Fi (DTS Band) of RSDB operation**

| Antenna           | Frequency Band | Mode           | RF Exposure Conditions | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Area Scan Max. SAR (W/kg) | Duty Cycle (%) | Power (dBm)   |       | 1-g SAR (W/kg) |        | Note | Plot No. |
|-------------------|----------------|----------------|------------------------|--------------|------------|---------------|-------|-------------|---------------------------|----------------|---------------|-------|----------------|--------|------|----------|
|                   |                |                |                        |              |            |               |       |             |                           |                | Tune-up limit | Meas. | Meas.          | Scaled |      |          |
| SISO (WiFi Ant.1) | 2.4GHz         | 802.11b 1 Mbps | Body-worn              | Off          | 15         | Rear          | 6     | 2437.0      | 0.052                     | 99.5%          | 17.0          | 16.7  | 0.037          | 0.040  | 1,3  |          |
|                   |                |                |                        |              |            | Rear          | 6     | 2437.0      | 0.123                     | 99.5%          | 17.0          | 16.7  | 0.084          | 0.091  | 2    |          |
|                   |                |                | Hotspot                | Off          | 10         | Front         | 6     | 2437.0      | 0.072                     | 99.5%          | 17.0          | 16.7  |                |        |      |          |
|                   |                |                |                        |              |            | Edge 1        | 6     | 2437.0      | 0.216                     | 99.5%          | 17.0          | 16.7  | 0.188          | 0.203  | 1    | 45       |
|                   |                |                |                        |              |            | Edge 4        | 6     | 2437.0      | 0.113                     | 99.5%          | 17.0          | 16.7  |                |        |      |          |
| SISO (WiFi Ant.2) | 2.4GHz         | 802.11b 1 Mbps | Body-worn              | Off          | 15         | Rear          | 6     | 2437.0      | 0.046                     | 99.5%          | 17.0          | 15.9  | 0.032          | 0.041  | 1,3  |          |
|                   |                |                |                        |              |            | Rear          | 6     | 2437.0      | 0.136                     | 99.5%          | 17.0          | 15.9  | 0.086          | 0.112  | 2    |          |
|                   |                |                | Hotspot                | Off          | 10         | Edge 1        | 6     | 2437.0      | 0.011                     | 99.5%          | 17.0          | 15.9  | 0.011          | 0.014  | 1,3  |          |
|                   |                |                |                        |              |            |               |       |             |                           |                |               |       |                |        |      |          |
| MIMO (WiFi Ant.1) | 2.4GHz         | 802.11g 6Mbps  | Body-worn              | Off          | 15         | Rear          | 11    | 2462.0      | 0.107                     | 96.5%          | 16.0          | 15.5  | 0.079          | 0.092  | 2    |          |
|                   |                |                |                        |              |            | Front         | 11    | 2462.0      | 0.032                     | 96.5%          | 16.0          | 15.5  |                |        | 1,3  |          |
|                   |                |                | Hotspot                | Off          | 10         | Rear          | 11    | 2462.0      | 0.178                     | 96.5%          | 16.0          | 15.5  | 0.145          | 0.169  | 2    |          |
|                   |                |                |                        |              |            | Front         | 11    | 2462.0      | 0.069                     | 96.5%          | 16.0          | 15.5  |                |        |      |          |
|                   |                |                |                        |              |            | Edge 1        | 11    | 2462.0      | 0.212                     | 96.5%          | 16.0          | 15.5  | 0.174          | 0.203  | 1    |          |
|                   |                |                |                        |              |            | Edge 4        | 11    | 2462.0      | 0.064                     | 96.5%          | 16.0          | 15.5  |                |        |      |          |
| MIMO (WiFi Ant.2) | 2.4GHz         | 802.11g 6Mbps  | Body-worn              | Off          | 15         | Rear          | 11    | 2462.0      | 0.107                     | 99.5%          | 17.0          | 15.6  |                |        |      |          |
|                   |                |                |                        |              |            | Front         | 11    | 2462.0      | 0.032                     | 99.5%          | 17.0          | 15.6  |                |        |      |          |
|                   |                |                | Hotspot                | Off          | 10         | Rear          | 11    | 2462.0      | 0.178                     | 96.5%          | 16.0          | 15.6  |                |        |      |          |
|                   |                |                |                        |              |            | Front         | 11    | 2462.0      | 0.069                     | 96.5%          | 16.0          | 15.6  |                |        |      |          |
|                   |                |                |                        |              |            | Edge 1        | 11    | 2462.0      | 0.212                     | 96.5%          | 16.0          | 15.6  |                |        |      |          |
|                   |                |                |                        |              |            | Edge 4        | 11    | 2462.0      | 0.064                     | 96.5%          | 16.0          | 15.6  |                |        |      |          |

**Note(s):**

- When the Highest reported SAR is  $\leq 0.4$  or  $1.0$  W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
- Additional testing required in order satisfying FCC simultaneous transmission limit criteria.
- When reported SAR for SISO operation is lower than highest reported SAR for MIMO operation at the same position, other test positions in this exposure condition were not evaluated for SISO operation.

## 10.14. Wi-Fi (U-NII Bands)

### U-NII 2A Results

| Antenna           | Frequency Band   | Mode                      | RF Exposure Conditions | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Area Scan Max. SAR (W/kg) | Duty Cycle (%) | Power (dBm)   |       | 1-g SAR (W/kg) |        | 10-g SAR (W/kg) |        | Note | Plot No. |
|-------------------|------------------|---------------------------|------------------------|--------------|------------|---------------|-------|-------------|---------------------------|----------------|---------------|-------|----------------|--------|-----------------|--------|------|----------|
|                   |                  |                           |                        |              |            |               |       |             |                           |                | Tune-up limit | Meas. | Meas.          | Scaled | Meas.           | Scaled |      |          |
| SISO (WiFi Ant.1) | 5.3 GHz U-NII 2A | 802.11ac VHT 80 29.3 Mbps | Head                   | On           | 0          | Left Touch    | 58    | 5290.0      | 0.023                     | 96.6%          | 14.0          | 12.8  |                |        |                 |        |      |          |
|                   |                  |                           |                        |              |            | Left Tilt     | 58    | 5290.0      | 0.029                     | 96.6%          | 14.0          | 12.8  |                |        |                 |        |      |          |
|                   |                  |                           |                        |              |            | Right Touch   | 58    | 5290.0      | 0.084                     | 96.6%          | 14.0          | 12.8  | 0.024          | 0.033  |                 |        | 1    | 46       |
|                   |                  |                           |                        |              |            | Right Tilt    | 58    | 5290.0      | 0.074                     | 96.6%          | 14.0          | 12.8  |                |        |                 |        |      |          |
|                   |                  | 802.11a 6 Mbps            | Body-worn              | Off          | 15         | Rear          | 56    | 5280.0      | 0.076                     | 95.8%          | 16.5          | 14.9  | 0.025          | 0.039  |                 |        | 1    |          |
|                   |                  |                           |                        |              |            | Front         | 56    | 5280.0      | 0.009                     | 95.8%          | 16.5          | 14.9  |                |        |                 |        |      |          |
|                   |                  |                           | Product Specific 10-g  | Off          | 0          | Rear          | 56    | 5280.0      | 0.888                     | 95.8%          | 16.5          | 14.9  |                |        | 0.110           | 0.167  | 4    |          |
|                   |                  |                           |                        |              |            | Front         | 56    | 5280.0      | 0.150                     | 95.8%          | 16.5          | 14.9  |                |        |                 |        |      |          |
| SISO (WiFi Ant.2) | 5.3 GHz U-NII 2A | 802.11ac VHT 80 29.3 Mbps | Head                   | On           | 0          | Right Touch   | 58    | 5290.0      | 0.048                     | 96.6%          | 14.0          | 12.9  |                |        |                 |        |      |          |
|                   |                  |                           |                        |              |            | Right Tilt    | 58    | 5290.0      | 0.048                     | 96.6%          | 14.0          | 12.9  |                |        |                 |        |      |          |
|                   |                  |                           |                        |              |            | Right Touch   | 58    | 5290.0      | 0.057                     | 96.6%          | 14.0          | 12.9  | 0.019          | 0.025  |                 |        | 1    |          |
|                   |                  |                           |                        |              |            | Right Tilt    | 58    | 5290.0      | 0.057                     | 96.6%          | 14.0          | 12.9  |                |        |                 |        |      |          |
|                   |                  | 802.11a 6 Mbps            | Body-worn              | Off          | 15         | Rear          | 56    | 5280.0      | 0.391                     | 95.8%          | 16.5          | 14.8  | 0.217          | 0.339  |                 |        | 1    |          |
|                   |                  |                           |                        |              |            | Front         | 56    | 5280.0      | 0.007                     | 95.8%          | 16.5          | 14.8  |                |        |                 |        |      |          |
|                   |                  |                           | Product Specific 10-g  | Off          | 0          | Rear          | 56    | 5280.0      | 2.726                     | 95.8%          | 16.5          | 14.8  |                |        | 0.458           | 0.715  | 1    | 47       |
|                   |                  |                           |                        |              |            | Front         | 56    | 5280.0      | 0.056                     | 95.8%          | 16.5          | 14.8  |                |        |                 |        |      |          |
| MIMO (WiFi Ant.1) | 5.3 GHz U-NII 2A | 802.11a 6 Mbps            | Body-worn              | Off          | 15         | Edge 1        | 56    | 5280.0      | 0.197                     | 95.8%          | 16.5          | 14.8  |                |        |                 |        |      |          |
|                   |                  |                           |                        |              |            | Edge 4        | 56    | 5280.0      | 0.880                     | 95.8%          | 16.5          | 14.8  |                |        |                 |        |      |          |
| MIMO (WiFi Ant.2) | 5.3 GHz U-NII 2A | 802.11a 6 Mbps            | Body-worn              | Off          | 15         | Rear          | 52    | 5260.0      | 0.418                     | 96.6%          | 16.5          | 14.7  | 0.220          | 0.342  |                 |        | 1    | 48       |
|                   |                  |                           |                        |              |            | Front         | 52    | 5260.0      | 0.023                     | 96.6%          | 16.5          | 14.7  |                |        |                 |        |      |          |

### U-NII 2C Results

| Antenna           | Frequency Band   | Mode                      | RF Exposure Conditions | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Area Scan Max. SAR (W/kg) | Duty Cycle (%) | Power (dBm)   |       | 1-g SAR (W/kg) |        | 10-g SAR (W/kg) |        | Note | Plot No. |
|-------------------|------------------|---------------------------|------------------------|--------------|------------|---------------|-------|-------------|---------------------------|----------------|---------------|-------|----------------|--------|-----------------|--------|------|----------|
|                   |                  |                           |                        |              |            |               |       |             |                           |                | Tune-up limit | Meas. | Meas.          | Scaled | Meas.           | Scaled |      |          |
| SISO (WiFi Ant.1) | 5.5 GHz U-NII 2C | 802.11ac VHT 80 29.3 Mbps | Head                   | On           | 0          | Left Touch    | 122   | 5610.0      | 0.068                     | 96.6%          | 14.0          | 12.9  |                |        |                 |        |      |          |
|                   |                  |                           |                        |              |            | Left Tilt     | 122   | 5610.0      | 0.071                     | 96.6%          | 14.0          | 12.9  |                |        |                 |        |      |          |
|                   |                  |                           |                        |              |            | Right Touch   | 122   | 5610.0      | 0.182                     | 96.6%          | 14.0          | 12.9  | 0.073          | 0.097  |                 |        | 1    | 49       |
|                   |                  |                           |                        |              |            | Right Tilt    | 122   | 5610.0      | 0.177                     | 96.6%          | 14.0          | 12.9  |                |        |                 |        |      |          |
|                   |                  | 802.11a 6 Mbps            | Body-worn              | Off          | 15         | Rear          | 120   | 5600.0      | 0.548                     | 95.8%          | 17.0          | 15.7  | 0.245          | 0.347  |                 |        | 1    |          |
|                   |                  |                           |                        |              |            | Front         | 120   | 5600.0      | 0.061                     | 95.8%          | 17.0          | 15.7  |                |        |                 |        |      |          |
|                   |                  |                           | Product Specific 10-g  | Off          | 0          | Rear          | 120   | 5600.0      | 2.935                     | 95.8%          | 17.0          | 15.7  |                |        | 0.452           | 0.641  | 4    |          |
|                   |                  |                           |                        |              |            | Front         | 120   | 5600.0      | 0.450                     | 95.8%          | 17.0          | 15.7  |                |        |                 |        |      |          |
| SISO (WiFi Ant.2) | 5.5 GHz U-NII 2C | 802.11ac VHT 80 29.3 Mbps | Head                   | On           | 0          | Edge 1        | 120   | 5600.0      | 0.685                     | 95.8%          | 17.0          | 15.7  |                |        |                 |        |      |          |
|                   |                  |                           |                        |              |            | Edge 4        | 120   | 5600.0      | 6.816                     | 95.8%          | 17.0          | 15.7  |                |        | 0.667           | 0.945  | 1    | 50       |
|                   |                  | 802.11a 6 Mbps            | Body-worn              | Off          | 15         | Rear          | 100   | 5500.0      | 0.254                     | 95.8%          | 17.0          | 15.5  | 0.115          | 0.171  |                 |        | 1    |          |
|                   |                  |                           |                        |              |            | Front         | 100   | 5500.0      | 0.017                     | 95.8%          | 17.0          | 15.5  |                |        |                 |        |      |          |
|                   |                  |                           | Product Specific 10-g  | Off          | 0          | Rear          | 100   | 5500.0      | 2.920                     | 95.8%          | 17.0          | 15.5  |                |        | 0.378           | 0.561  | 1    |          |
|                   |                  |                           |                        |              |            | Front         | 100   | 5500.0      | 0.357                     | 95.8%          | 17.0          | 15.5  |                |        |                 |        |      |          |
|                   |                  | 802.11a 6 Mbps            | Product Specific 10-g  | Off          | 0          | Edge 1        | 100   | 5500.0      | 1.955                     | 95.8%          | 17.0          | 15.5  |                |        |                 |        |      |          |
|                   |                  |                           |                        |              |            | Edge 4        | 100   | 5500.0      | 0.798                     | 95.8%          | 17.0          | 15.5  |                |        |                 |        |      |          |
| MIMO (WiFi Ant.1) | 5.5 GHz U-NII 2C | 802.11a 6 Mbps            | Body-worn              | Off          | 15         | Rear          | 100   | 5500.0      | 0.774                     | 96.6%          | 17.0          | 15.7  | 0.347          | 0.482  |                 |        |      | 51       |
|                   |                  |                           |                        |              |            | Front         | 100   | 5500.0      | 0.056                     | 96.6%          | 17.0          | 15.7  | 0.028          | 0.039  |                 |        | 2    |          |
| MIMO (WiFi Ant.2) | 5.5 GHz U-NII 2C | 802.11a 6 Mbps            | Body-worn              | Off          | 15         | Rear          | 100   | 5500.0      | 0.774                     | 96.6%          | 17.0          | 15.5  |                |        |                 |        |      |          |
|                   |                  |                           |                        |              |            | Front         | 100   | 5500.0      | 0.056                     | 96.6%          | 17.0          | 15.5  |                |        |                 |        |      |          |

#### Note(s):

- When the Highest reported SAR is  $\leq 0.4$  or  $1.0$  W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
- Highest reported SAR is  $> 0.4$  or  $1.0$  W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR  $\leq 0.8$  or  $2.0$  W/kg (1-g or 10-g respectively) was reported.
- Testing for a second channel was required because the reported SAR for this test position was  $> 0.8$  or  $2.0$  W/kg (1-g or 10-g respectively).
- Additional testing required in order satisfying FCC simultaneous transmission limit criteria.

**U-NII 3 Results**

| Antenna           | Frequency Band  | Mode                      | RF Exposure Conditions | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Area Scan Max. SAR (W/kg) | Duty Cycle (%) | Power (dBm)   |       | 1-g SAR (W/kg) |        | Note | Plot No. |
|-------------------|-----------------|---------------------------|------------------------|--------------|------------|---------------|-------|-------------|---------------------------|----------------|---------------|-------|----------------|--------|------|----------|
|                   |                 |                           |                        |              |            |               |       |             |                           |                | Tune-up limit | Meas. | Meas.          | Scaled |      |          |
| SISO (WiFi Ant.1) | 5.8 GHz U-NII 3 | 802.11ac VHT 80 29.3 Mbps | Head                   | On           | 0          | Left Touch    | 155   | 5775.0      | 0.044                     | 96.6%          | 14.0          | 13.5  |                |        |      |          |
|                   |                 |                           |                        |              |            | Left Tilt     | 155   | 5775.0      | 0.028                     | 96.6%          | 14.0          | 13.5  |                |        |      |          |
|                   |                 |                           |                        |              |            | Right Touch   | 155   | 5775.0      | 0.118                     | 96.6%          | 14.0          | 13.5  | 0.060          | 0.070  | 1    | 52       |
|                   |                 |                           |                        |              |            | Right Tilt    | 155   | 5775.0      | 0.071                     | 96.6%          | 14.0          | 13.5  |                |        |      |          |
|                   |                 | 802.11a 6 Mbps            | Body-worn              | Off          | 15         | Rear          | 157   | 5785.0      | 1.252                     | 95.8%          | 18.0          | 17.3  | 0.583          | 0.713  | 1    |          |
|                   |                 |                           |                        |              |            | Front         | 157   | 5785.0      | 0.059                     | 95.8%          | 18.0          | 17.3  | 0.022          | 0.027  |      |          |
|                   |                 |                           | Hotsopt                | Off          | 10         | Rear          | 149   | 5745.0      | 1.346                     | 95.8%          | 18.0          | 17.2  | 0.622          | 0.784  | 1    |          |
|                   |                 |                           |                        |              |            | Front         | 149   | 5745.0      | 0.089                     | 95.8%          | 18.0          | 17.2  |                |        |      |          |
|                   |                 |                           |                        |              |            | Edge 1        | 149   | 5745.0      | 0.172                     | 95.8%          | 18.0          | 17.2  |                |        |      |          |
|                   |                 |                           |                        |              |            | Edge 4        | 149   | 5745.0      | 0.481                     | 95.8%          | 18.0          | 17.2  | 0.233          | 0.294  | 2    |          |
| SISO (WiFi Ant.2) | 5.8 GHz U-NII 3 | 802.11ac VHT 80 29.3 Mbps | Head                   | On           | 0          | Left Touch    | 155   | 5775.0      | 0.061                     | 96.6%          | 14.0          | 12.5  |                |        |      |          |
|                   |                 |                           |                        |              |            | Left Tilt     | 155   | 5775.0      | 0.060                     | 96.6%          | 14.0          | 12.5  |                |        |      |          |
|                   |                 |                           |                        |              |            | Right Touch   | 155   | 5775.0      | 0.150                     | 96.6%          | 14.0          | 12.5  |                |        |      |          |
|                   |                 |                           |                        |              |            | Right Tilt    | 155   | 5775.0      | 0.174                     | 96.6%          | 14.0          | 12.5  | 0.050          | 0.073  | 1    |          |
|                   |                 | 802.11a 6 Mbps            | Body-worn              | Off          | 15         | Rear          | 149   | 5745.0      | 0.638                     | 95.8%          | 18.0          | 17.0  | 0.293          | 0.388  | 1    |          |
|                   |                 |                           |                        |              |            | Front         | 149   | 5745.0      | 0.020                     | 95.8%          | 18.0          | 17.0  |                |        |      |          |
|                   |                 |                           | Hotsopt                | Off          | 10         | Rear          | 149   | 5745.0      | 0.927                     | 95.8%          | 18.0          | 17.0  | 0.414          | 0.548  |      |          |
|                   |                 |                           |                        |              |            | Front         | 149   | 5745.0      | 0.027                     | 95.8%          | 18.0          | 17.0  |                |        |      |          |
|                   |                 |                           |                        |              |            | Edge 1        | 149   | 5745.0      | 0.133                     | 95.8%          | 18.0          | 17.0  |                |        |      |          |
|                   |                 |                           |                        |              |            | Edge 4        | 149   | 5745.0      | 0.154                     | 95.8%          | 18.0          | 17.0  | 0.071          | 0.093  | 2    |          |
| MIMO (WiFi Ant.1) | 5.8 GHz U-NII 3 | 802.11a 6 Mbps            | Body-worn              | Off          | 15         | Rear          | 157   | 5785.0      | 1.860                     | 96.6%          | 18.0          | 17.2  | 0.844          | 1.053  | 3    |          |
|                   |                 |                           |                        |              |            |               | 165   | 5825.0      | 1.961                     | 96.6%          | 18.0          | 17.3  | 0.957          | 1.178  |      | 53       |
|                   |                 |                           |                        |              |            | Front         | 165   | 5825.0      | 0.098                     | 96.6%          | 18.0          | 17.3  | 0.038          | 0.047  | 2    |          |
|                   |                 |                           | Hotsopt                | Off          | 10         | Rear          | 149   | 5745.0      | 1.921                     | 96.6%          | 18.0          | 17.2  | 0.953          | 1.197  |      | 54       |
|                   |                 |                           |                        |              |            | Front         | 149   | 5745.0      | 0.113                     | 96.6%          | 18.0          | 17.2  | 0.048          | 0.060  | 4    |          |
|                   |                 |                           |                        |              |            | Edge 1        | 149   | 5745.0      | 0.352                     | 96.6%          | 18.0          | 17.2  |                |        |      |          |
|                   |                 |                           |                        |              |            | Edge 4        | 149   | 5745.0      | 0.613                     | 96.6%          | 18.0          | 17.2  | 0.285          | 0.358  | 2    |          |
|                   |                 |                           |                        |              |            |               |       |             |                           |                |               |       |                |        |      |          |
| MIMO (WiFi Ant.2) | 5.8 GHz U-NII 3 | 802.11a 6 Mbps            | Body-worn              | Off          | 15         | Rear          | 157   | 5785.0      | 1.860                     | 96.6%          | 18.0          | 16.6  |                |        |      |          |
|                   |                 |                           |                        |              |            |               | 165   | 5825.0      | 1.961                     | 96.6%          | 18.0          | 16.3  |                |        |      |          |
|                   |                 |                           |                        |              |            | Front         | 165   | 5825.0      | 0.098                     | 96.6%          | 18.0          | 16.3  |                |        |      |          |
|                   |                 |                           | Hotsopt                | Off          | 10         | Rear          | 149   | 5745.0      | 1.921                     | 96.6%          | 18.0          | 16.9  |                |        |      |          |
|                   |                 |                           |                        |              |            | Front         | 149   | 5745.0      | 0.113                     | 96.6%          | 18.0          | 16.9  | 0.021          | 0.028  | 1    |          |
|                   |                 |                           |                        |              |            | Edge 1        | 149   | 5745.0      | 0.352                     | 96.6%          | 18.0          | 16.9  |                |        |      |          |
|                   |                 |                           |                        |              |            | Edge 4        | 149   | 5745.0      | 0.613                     | 96.6%          | 18.0          | 16.9  |                |        |      |          |
|                   |                 |                           |                        |              |            |               |       |             |                           |                |               |       |                |        |      |          |

**Note(s):**

1. When the Highest reported SAR is  $\leq 0.4$  or  $1.0$  W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest reported SAR is  $> 0.4$  or  $1.0$  W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR  $\leq 0.8$  or  $2.0$  W/kg (1-g or 10-g respectively) was reported.
3. Testing for a second channel was required because the reported SAR for this test position was  $> 0.8$  or  $2.0$  W/kg (1-g or 10-g respectively).
4. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.

## 10.15. Wi-Fi (U-NII Band) of RSDB operation

### U-NII 2A Results

| Antenna           | Frequency Band   | Mode                      | RF Exposure Conditions | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Area Scan Max. SAR (W/kg) | Duty Cycle (%) | Power (dBm)   |       | 1-g SAR (W/kg) |        | Note | Plot No. |
|-------------------|------------------|---------------------------|------------------------|--------------|------------|---------------|-------|-------------|---------------------------|----------------|---------------|-------|----------------|--------|------|----------|
|                   |                  |                           |                        |              |            |               |       |             |                           |                | Tune-up limit | Meas. | Meas.          | Scaled |      |          |
| SISO (WiFi Ant.1) | 5.3 GHz U-NII 2A | 802.11ac VHT 80 29.3 Mbps | Body-worn              | Off          | 15         | Rear          | 58    | 5290.0      | 0.046                     | 96.6%          | 14.0          | 12.8  | 0.015          | 0.021  | 1,3  |          |
| SISO (WiFi Ant.2) | 5.3 GHz U-NII 2A | 802.11ac VHT 80 29.3 Mbps | Body-worn              | Off          | 15         | Rear          | 58    | 5290.0      | 0.260                     | 96.6%          | 14.0          | 12.9  | 0.118          | 0.159  | 1,3  |          |
| MIMO (WiFi Ant.1) | 5.3 GHz U-NII 2A | 802.11ac VHT 80 29.3 Mbps | Body-worn              | Off          | 15         | Rear          | 58    | 5290.0      | 0.258                     | 95.5%          | 14.0          | 12.6  | 0.131          | 0.188  | 1    | 55       |
|                   |                  |                           |                        |              |            | Front         | 58    | 5290.0      | 0.161                     | 95.5%          | 14.0          | 12.6  |                |        |      |          |
| MIMO (WiFi Ant.2) | 5.3 GHz U-NII 2A | 802.11ac VHT 80 29.3 Mbps | Body-worn              | Off          | 15         | Rear          | 58    | 5290.0      | 0.258                     | 95.5%          | 14.0          | 12.9  |                |        |      |          |
|                   |                  |                           |                        |              |            | Front         | 58    | 5290.0      | 0.161                     | 95.5%          | 14.0          | 12.9  |                |        |      |          |

### U-NII 2C Results

| Antenna           | Frequency Band   | Mode                      | RF Exposure Conditions | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Area Scan Max. SAR (W/kg) | Duty Cycle (%) | Power (dBm)   |       | 1-g SAR (W/kg) |        | Note | Plot No. |
|-------------------|------------------|---------------------------|------------------------|--------------|------------|---------------|-------|-------------|---------------------------|----------------|---------------|-------|----------------|--------|------|----------|
|                   |                  |                           |                        |              |            |               |       |             |                           |                | Tune-up limit | Meas. | Meas.          | Scaled |      |          |
| SISO (WiFi Ant.1) | 5.5 GHz U-NII 2C | 802.11ac VHT 80 29.3 Mbps | Body-worn              | Off          | 15         | Rear          | 122   | 5610.0      | 0.259                     | 96.6%          | 14.0          | 12.9  | 0.102          | 0.136  | 1    |          |
|                   |                  |                           |                        |              |            | Front         | 122   | 5610.0      | 0.012                     | 96.6%          | 14.0          | 12.9  |                |        |      |          |
| SISO (WiFi Ant.2) | 5.5 GHz U-NII 2C | 802.11ac VHT 80 29.3 Mbps | Body-worn              | Off          | 15         | Rear          | 106   | 5530.0      | 0.093                     | 96.6%          | 14.0          | 13.3  | 0.029          | 0.036  | 1,3  |          |
| MIMO (WiFi Ant.1) | 5.5 GHz U-NII 2C | 802.11ac VHT 80 29.3 Mbps | Body-worn              | Off          | 15         | Rear          | 106   | 5530.0      | 0.188                     | 95.5%          | 14.0          | 12.2  | 0.076          | 0.121  | 1    | 56       |
|                   |                  |                           |                        |              |            | Front         | 106   | 5530.0      | 0.019                     | 95.5%          | 14.0          | 12.2  |                |        |      |          |
| MIMO (WiFi Ant.2) | 5.5 GHz U-NII 2C | 802.11ac VHT 80 29.3 Mbps | Body-worn              | Off          | 15         | Rear          | 106   | 5530.0      | 0.188                     | 95.5%          | 14.0          | 13.7  |                |        |      |          |
|                   |                  |                           |                        |              |            | Front         | 106   | 5530.0      | 0.019                     | 95.5%          | 14.0          | 13.7  |                |        |      |          |

### U-NII 3 Results

| Antenna           | Frequency Band  | Mode                      | RF Exposure Conditions | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Area Scan Max. SAR (W/kg) | Duty Cycle (%) | Power (dBm)   |       | 1-g SAR (W/kg) |        | Note | Plot No. |
|-------------------|-----------------|---------------------------|------------------------|--------------|------------|---------------|-------|-------------|---------------------------|----------------|---------------|-------|----------------|--------|------|----------|
|                   |                 |                           |                        |              |            |               |       |             |                           |                | Tune-up limit | Meas. | Meas.          | Scaled |      |          |
| SISO (WiFi Ant.1) | 5.8 GHz U-NII 3 | 802.11ac VHT 80 29.3 Mbps | Body-worn              | Off          | 15         | Rear          | 155   | 5775.0      | 0.429                     | 96.6%          | 14.0          | 13.5  | 0.179          | 0.210  | 1,3  |          |
|                   |                 |                           | Hotsopt                | Off          | 10         | Rear          | 155   | 5775.0      | 0.586                     | 96.6%          | 14.0          | 13.5  | 0.247          | 0.290  | 1,3  |          |
| SISO (WiFi Ant.2) | 5.8 GHz U-NII 3 | 802.11ac VHT 80 29.3 Mbps | Body-worn              | Off          | 15         | Rear          | 155   | 5775.0      | 0.275                     | 96.6%          | 14.0          | 12.5  | 0.123          | 0.180  | 1,3  |          |
|                   |                 |                           | Hotsopt                | Off          | 10         | Rear          | 155   | 5775.0      | 0.360                     | 96.6%          | 14.0          | 12.5  | 0.173          | 0.253  | 1,3  |          |
| MIMO (WiFi Ant.1) | 5.8 GHz U-NII 3 | 802.11ac VHT 80 29.3 Mbps | Body-worn              | Off          | 15         | Rear          | 155   | 5775.0      | 0.677                     | 95.5%          | 14.0          | 13.4  | 0.287          | 0.345  | 1    | 57       |
|                   |                 |                           |                        |              |            | Front         | 155   | 5775.0      | 0.041                     | 95.5%          | 14.0          | 13.4  |                |        |      |          |
|                   |                 |                           | Hotsopt                | Off          | 10         | Rear          | 155   | 5775.0      | 1.036                     | 95.5%          | 14.0          | 13.4  | 0.429          | 0.516  |      | 58       |
|                   |                 |                           |                        |              |            | Front         | 155   | 5775.0      | 0.041                     | 95.5%          | 14.0          | 13.4  |                |        |      |          |
|                   |                 |                           |                        |              |            | Edge 1        | 155   | 5775.0      | 0.087                     | 95.5%          | 14.0          | 13.4  |                |        |      |          |
|                   |                 |                           |                        |              |            | Edge 4        | 155   | 5775.0      | 0.207                     | 95.5%          | 14.0          | 13.4  | 0.093          | 0.111  | 2    |          |
| MIMO (WiFi Ant.2) | 5.8 GHz U-NII 3 | 802.11ac VHT 80 29.3 Mbps | Body-worn              | Off          | 15         | Rear          | 155   | 5775.0      | 0.677                     | 95.5%          | 14.0          | 12.5  |                |        |      |          |
|                   |                 |                           |                        |              |            | Front         | 155   | 5775.0      | 0.041                     | 95.5%          | 14.0          | 12.5  |                |        |      |          |
|                   |                 |                           | Hotsopt                | Off          | 10         | Rear          | 155   | 5775.0      | 1.306                     | 95.5%          | 14.0          | 12.5  |                |        |      |          |
|                   |                 |                           |                        |              |            | Front         | 155   | 5775.0      | 0.041                     | 95.5%          | 14.0          | 12.5  |                |        |      |          |
|                   |                 |                           |                        |              |            | Edge 1        | 155   | 5775.0      | 0.087                     | 95.5%          | 14.0          | 12.5  |                |        |      |          |
|                   |                 |                           |                        |              |            | Edge 4        | 155   | 5775.0      | 0.207                     | 95.5%          | 14.0          | 12.5  |                |        |      |          |

#### Note(s):

- When the Highest reported SAR is  $\leq 0.4$  or  $1.0$  W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
- Additional testing required in order satisfying FCC simultaneous transmission limit criteria.
- When reported SAR for SISO operation is lower than highest reported SAR for MIMO operation at the same position, other test positions in this exposure condition were not evaluated for SISO operation.

**10.16. Bluetooth**

| Antenna | Frequency Band | Mode | RF Exposure Conditions | PWR Back-off | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Duty Cycle (%) | Power (dBm)   |       | 1-g SAR (W/kg) |        | Plot No. |
|---------|----------------|------|------------------------|--------------|------------|---------------|-------|-------------|----------------|---------------|-------|----------------|--------|----------|
|         |                |      |                        |              |            |               |       |             |                | Tune-up limit | Meas. | Meas.          | Scaled |          |
| BT      | 2.4 GHz        | GFSK | Head                   | N/A          | 0          | Left Touch    | 78    | 2480.0      | 76.9%          | 17.5          | 16.7  | 0.343          | 0.538  |          |
|         |                |      |                        |              |            | Left Tilt     | 78    | 2480.0      | 76.9%          | 17.5          | 16.7  | 0.398          | 0.625  |          |
|         |                |      |                        |              |            | Right Touch   | 78    | 2480.0      | 76.9%          | 17.5          | 16.7  | 0.411          | 0.645  |          |
|         |                |      |                        |              |            | Right Tilt    | 78    | 2480.0      | 76.9%          | 17.5          | 16.7  | 0.449          | 0.705  | 59       |
|         |                | GFSK | Body-worn              | N/A          | 15         | Rear          | 78    | 2480.0      | 76.9%          | 17.5          | 16.7  | 0.048          | 0.076  | 60       |
|         |                |      |                        |              |            | Front         | 78    | 2480.0      | 76.9%          | 17.5          | 16.7  | 0.038          | 0.059  |          |
|         |                | GFSK | Hotspot                | N/A          | 10         | Rear          | 78    | 2480.0      | 76.9%          | 17.5          | 16.7  | 0.105          | 0.165  |          |
|         |                |      |                        |              |            | Front         | 78    | 2480.0      | 76.9%          | 17.5          | 16.7  | 0.072          | 0.112  |          |
|         |                |      |                        |              |            | Edge 1        | 78    | 2480.0      | 76.9%          | 17.5          | 16.7  | 0.126          | 0.198  | 61       |
|         |                |      |                        |              |            | Edge 4        | 78    | 2480.0      | 76.9%          | 17.5          | 16.7  | 0.021          | 0.033  |          |

## 11. SAR Measurement Variability

In accordance with published RF Exposure KDB 865664 D01 SAR measurement 100 MHz to 6 GHz. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

- 1) Repeated measurement is not required when the original highest measured SAR is  $<0.8$  or 2 W/kg (1-g or 10-g respectively); steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is  $\geq 0.8$  or 2 W/kg (1-g or 10-g respectively), repeat that measurement once.
- 3) Perform a second repeated measurement only if the **ratio of largest to smallest SAR** for the original and first repeated measurements is  $> 1.20$  or when the original or repeated measurement is  $\geq 1.45$  or 3.6 W/kg (~ 10% from the 1-g or 10-g respective SAR limit).
- 4) Perform a third repeated measurement only if the original, first, or second repeated measurement is  $\geq 1.5$  or 3.75 W/kg (1-g or 10-g respectively) and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .

### Peak spatial-average (1g of tissue)

| Frequency Band (MHz) | Air Interface     | RF Exposure Conditions | Test Position | Repeated SAR (Yes/No) | Highest Measured SAR (W/kg) | Repeated Measured SAR (W/kg) | Largest to Smallest SAR Ratio |
|----------------------|-------------------|------------------------|---------------|-----------------------|-----------------------------|------------------------------|-------------------------------|
| 700                  | LTE Band 12       | Hotspot                | Rear          | No                    | 0.279                       | N/A                          | N/A                           |
|                      | LTE Band 13       | Hotspot                | Rear          | No                    | 0.461                       | N/A                          | N/A                           |
| 835                  | GSM 850           | Hotspot                | Rear          | No                    | 0.737                       | N/A                          | N/A                           |
|                      | WCDMA Band V      | Hotspot                | Rear          | No                    | 0.613                       | N/A                          | N/A                           |
|                      | LTE Band 26       | Hotspot                | Rear          | No                    | 0.546                       | N/A                          | N/A                           |
| 1750                 | WCDMA Band IV     | Hotspot                | Edge 3        | Yes                   | 1.020                       | 1.010                        | 1.01                          |
|                      | LTE Band 66       | Hotspot                | Edge 3        | Yes                   | 1.020                       | 1.020                        | 1.00                          |
| 1900                 | GSM 1900          | Hotspot                | Edge 3        | No                    | 0.873                       | N/A                          | N/A                           |
|                      | WCDMA Band II     | Hotspot                | Edge 3        | No                    | 0.876                       | N/A                          | N/A                           |
|                      | LTE Band 25       | Hotspot                | Edge 3        | Yes                   | 1.070                       | 1.090                        | 1.02                          |
| 2400                 | Wi-Fi 802.11b/g/n | Hotspot                | Edge 1        | No                    | 0.404                       | N/A                          | N/A                           |
|                      | Bluetooth         | Head                   | Right Tilt    | No                    | 0.449                       | N/A                          | N/A                           |
| 2600                 | LTE Band 41       | Hotspot                | Edge 3        | No                    | 0.770                       | N/A                          | N/A                           |
| 5250                 | Wi-Fi 802.11a/ac  | Body                   | Rear          | No                    | 0.220                       | N/A                          | N/A                           |
| 5500                 | Wi-Fi 802.11a/ac  | Body                   | Rear          | No                    | 0.347                       | N/A                          | N/A                           |
| 5800                 | Wi-Fi 802.11a/ac  | Body                   | Rear          | Yes                   | 0.957                       | 0.993                        | 1.04                          |

### Peak spatial-average (10g of tissue)

| Frequency Band (MHz) | Air Interface    | RF Exposure Conditions | Test Position | Repeated SAR (Yes/No) | Highest Measured SAR (W/kg) | Repeated Measured SAR (W/kg) | Largest to Smallest SAR Ratio |
|----------------------|------------------|------------------------|---------------|-----------------------|-----------------------------|------------------------------|-------------------------------|
| 1750                 | WCDMA Band IV    | Product Specific 10g   | Edge 3        | No                    | 1.550                       | N/A                          | N/A                           |
|                      | LTE Band 4       | Product Specific 10g   | Edge 3        | No                    | 1.960                       | N/A                          | N/A                           |
|                      | LTE Band 66      | Product Specific 10g   | Edge 3        | No                    | 1.560                       | N/A                          | N/A                           |
| 1900                 | GSM 1900         | Product Specific 10g   | Edge 3        | No                    | 1.600                       | N/A                          | N/A                           |
|                      | WCDMA Band II    | Product Specific 10g   | Edge 3        | No                    | 1.580                       | N/A                          | N/A                           |
|                      | LTE Band 2       | Product Specific 10g   | Edge 3        | No                    | 1.870                       | N/A                          | N/A                           |
|                      | LTE Band 25      | Product Specific 10g   | Edge 3        | No                    | 1.600                       | N/A                          | N/A                           |
| 2600                 | LTE Band 41      | Product Specific 10g   | Edge 3        | No                    | 1.430                       | N/A                          | N/A                           |
| 5250                 | Wi-Fi 802.11a/ac | Product Specific 10g   | Rear          | No                    | 0.458                       | N/A                          | N/A                           |
| 5500                 | Wi-Fi 802.11a/ac | Product Specific 10g   | Edge 4        | No                    | 0.667                       | N/A                          | N/A                           |

### Note(s):

Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not  $> 1.20$ .

## 12. Simultaneous Transmission SAR Analysis

### Simultaneous Transmission Condition

| RF Exposure Condition                | Item | Capable Transmit Configurations |   |               |   |            |
|--------------------------------------|------|---------------------------------|---|---------------|---|------------|
| Head &<br>Body-worn &<br>Phablet-10g | 1    | GSM(Voice/GPRS)                 | + | DTS_Ant.1     | + | DTS_Ant.2  |
|                                      | 2    | GSM(Voice/GPRS)                 | + | UNII_Ant.1    | + | UNII_Ant.2 |
|                                      | 3    | GSM(Voice/GPRS)                 | + | BT            |   |            |
|                                      | 4    | GSM(Voice/GPRS)                 | + | UNII_Ant.1    | + | BT         |
|                                      | 5    | GSM(Voice/GPRS)                 | + | UNII_Ant.2    | + | BT         |
|                                      | 6    | GSM(Voice/GPRS)                 | + | UNII MIMO     | + | BT         |
|                                      | 7    | GSM(Voice/GPRS)                 | + | RSDB scenario |   |            |
|                                      | 8    | WCDMA or LTE                    | + | DTS_Ant.1     | + | DTS_Ant.2  |
|                                      | 9    | WCDMA or LTE                    | + | UNII_Ant.1    | + | UNII_Ant.2 |
|                                      | 10   | WCDMA or LTE                    | + | BT            |   |            |
|                                      | 11   | WCDMA or LTE                    | + | UNII_Ant.1    | + | BT         |
|                                      | 12   | WCDMA or LTE                    | + | UNII_Ant.2    | + | BT         |
|                                      | 13   | WCDMA or LTE                    | + | UNII MIMO     | + | BT         |
|                                      | 14   | WCDMA or LTE                    | + | RSDB scenario |   |            |
| Hotspot                              | 15   | GSM(GPRS)                       | + | DTS_Ant.1     | + | DTS_Ant.2  |
|                                      | 16   | GSM(GPRS)                       | + | UNII_Ant.1    | + | UNII_Ant.2 |
|                                      | 17   | GSM(GPRS)                       | + | BT            |   |            |
|                                      | 18   | GSM(GPRS)                       | + | UNII_Ant.1    | + | BT         |
|                                      | 19   | GSM(GPRS)                       | + | UNII_Ant.2    | + | BT         |
|                                      | 20   | GSM(GPRS)                       | + | UNII MIMO     | + | BT         |
|                                      | 21   | GSM(GPRS)                       | + | RSDB scenario |   |            |
|                                      | 22   | WCDMA or LTE                    | + | DTS_Ant.1     | + | DTS_Ant.2  |
|                                      | 23   | WCDMA or LTE                    | + | UNII_Ant.1    | + | UNII_Ant.2 |
|                                      | 24   | WCDMA or LTE                    | + | BT            |   |            |
|                                      | 25   | WCDMA or LTE                    | + | UNII_Ant.1    | + | BT         |
|                                      | 26   | WCDMA or LTE                    | + | UNII_Ant.2    | + | BT         |
|                                      | 27   | WCDMA or LTE                    | + | UNII MIMO     | + | BT         |
|                                      | 28   | WCDMA or LTE                    | + | RSDB scenario |   |            |

Notes:

1. DTS supports Wi-Fi Direct, Hotspot and VoIP.
2. U-NII supports Wi-Fi Direct, Hotspot and VoIP.
3. GPRS, W-CDMA, LTE supports Hotspot and VoIP.
4. U-NII Radio can transmit simultaneously with Bluetooth Radio.
5. DTS Radio cannot transmit simultaneously with Bluetooth Radio.
6. DTS Radio can only transmit simultaneously with U-NII Radio in RSDB scenarios.
7. DTS and U-NII Radio can operating both SISO and MIMO modes.
8. BT tethering is consider about each RF exposure conditions

#### RSDB scenarios

| Mode                         | Scenario | # of TX | 5GHz |      | 2.4GHz |      |
|------------------------------|----------|---------|------|------|--------|------|
|                              |          |         | Ant1 | Ant2 | Ant1   | Ant2 |
| 2.4GHz + 5GHz<br>RSDB Only   | 1        | 2       | On   | -    | On     | -    |
|                              | 2        | 2       | On   | -    | -      | On   |
|                              | 3        | 2       | -    | On   | On     | -    |
|                              | 4        | 2       | -    | On   | -      | On   |
| 2.4GHz + 5GHz<br>RSDB & MIMO | 5        | 3       | On   | On   | On     | -    |
|                              | 6        | 3       | On   | On   | -      | On   |
|                              | 7        | 3       | On   | -    | On     | On   |
|                              | 8        | 3       | -    | On   | On     | On   |
| 2.4GHz + 5GHz<br>RSDB MIMO   | 9        | 4       | On   | On   | On     | On   |

## Simultaneous transmission SAR test exclusion considerations

KDB 447498 D01 General RF Exposure Guidance provides two procedures for determining simultaneous transmission SAR test exclusion: Sum of SAR and SAR to Peak Location Ratio (SPLSR)

### Sum of SAR

To qualify for simultaneous transmission SAR test exclusion based upon Sum of SAR the sum of the reported standalone SARs for all simultaneously transmitting antennas shall be below the applicable standalone SAR limit. If the sum of the SARs is above the applicable limit then simultaneous transmission SAR test exclusion may still apply if the requirements of the SAR to Peak Location Ratio (SPLSR) evaluation are met.

### SAR to Peak Location Ratio (SPLSR)

KDB 447498 D01 General RF Exposure Guidance explains how to calculate the SAR to Peak Location Ratio (SPLSR) between pairs of simultaneously transmitting antennas:

$$SPLSR = (SAR_1 + SAR_2)^{1.5} / Ri$$

Where:

**SAR<sub>1</sub>** is the highest reported or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition

**SAR<sub>2</sub>** is the highest reported or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

**Ri** is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of

$$[(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2]$$

In order for a pair of simultaneous transmitting antennas with the sum of 1-g SAR > 1.6 W/kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$$(SAR_1 + SAR_2)^{1.5} / Ri \leq 0.04$$

When an individual antenna transmits at on two bands simultaneously, the sum of the highest *reported* SAR for the frequency bands should be used to determine **SAR<sub>1</sub>** or **SAR<sub>2</sub>**. When SPLSR is necessary, the smallest distance between the peak SAR locations for the antenna pair with respect to the peaks from each antenna should be used.

The antennas in all antenna pairs that do not qualify for simultaneous transmission SAR test exclusion must be tested for SAR compliance, according to the enlarged zoom scan and volume scan post-processing procedures in KDB Publication 865664 D01

The antennas for the unlicensed transmitters are closely situated. As a result, the associated SAR hotspots are also closely situated. Some of the sum of SAR calculations yielded results over 1.6 W/kg. The SPLSR calculations for these situations were performed by treating the unlicensed SAR values as a single transmitter. The most conservative distance between all the unlicensed hotspots to the licensed hotspot was used for the value of *d* in the SPLSR calculation.

## Simultaneous transmission SAR measurement

When simultaneous transmission SAR measurements are required in different frequency bands not covered by a single probe calibration point then separate tests for each frequency band are performed. The tests are performed using enlarged zoom scans which are processed, by means of superposition, using the DASY5 volume scan postprocessing procedures to determine the 1-g SAR for the aggregate SAR distribution.

The spatial resolution used for all enlarged zoom scans is the same as used for the most stringent zoom scans. I.E. the scan parameters required for the highest frequency assessed are used for all enlarged zoom scans. The scans cover the complete area of the device to ensure all transmitting antennas and radiating structures are assessed.

DASY5 provides the ability to perform Multiband Evaluations according to the latest standards using the Volume Scan job as well as appropriate routines for the Post-processing.

In order to extract and process measurements within different frequency bands, the SEMCAD X Post-processor performs the combination and subsequent superposition of these measurement data via DASY5= Combined MultiBand Averaged SAR.

Combined Multi Band Averaged SAR allows - in addition to the data extraction - an evaluation of the 1 g, 10 g and/or arbitrary averaged mass SAR.

Power Scaling Factor is used to allow the volume scans to be scaled by a value other than "1", this is important when the results need to be scaled to different maximum power levels. The Power Scaling Factor is applied to each individual point of the scan. When power scaling is used in multi-band combinations the scaling factor is applied to each individual point of the first scan, the second factor is then applied to each individual point of the second scan and so on. The scans are then combined.

## SPLSR Hotspot Combination

Per November 2019 TCB Workshop Notes, SPLSR Hotspot Combination procedure can be applied to evaluate to simultaneous transmission SAR analysis.

Hybrid SPLSR and enlarged zoom scan (Volume scan) can be applied when Simultaneous transmission SAR is over 1.6 or 4.0 W/kg (1-g or 10-g respectively), it does not meet SPLSR criteria, and antenna pair is co-located. Antenna co-location means that SAR distributions overlap because the antennas are not significantly spatially separated.

## Test procedure

**Step.1** Perform enlarged zoom scan (Volume scan) on the co-located antenna pair to determine 1g/10g aggregate SAR.

**Step.2** Apply SPLSR procedure for the spatially separated antenna and aggregate SAR distribution of the co-located antenna pair.

## 12.1. Sum of the SAR for GSM 850 & Wi-Fi & BT

| RF Exposure            | Test Position | Standalone SAR (W/kg) |           |           |            |            |           |       | Σ SAR (W/kg)     |                  |                 |                   |                   |                        |                        |                        |                       |
|------------------------|---------------|-----------------------|-----------|-----------|------------|------------|-----------|-------|------------------|------------------|-----------------|-------------------|-------------------|------------------------|------------------------|------------------------|-----------------------|
|                        |               | WWAN                  | DTS Ant.1 | DTS Ant.2 | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    | WWAN + DTS Ant.1 | WWAN + DTS Ant.2 | WWAN + DTS MIMO | WWAN + UNII Ant.1 | WWAN + UNII Ant.2 | WWAN + BT              | WWAN + BT + UNII Ant.1 | WWAN + BT + UNII Ant.2 | WWAN + BT + UNII MIMO |
|                        |               | 1                     | 2         | 3         | 4          | 5          | 6         | 7     | 1+2              | 1+3              | 1+2+3           | 1+4               | 1+5               | A.D: 1+4+5<br>B.C: 1+6 | 1+7                    | 1+4+7                  | 1+5+7                 |
| A: Head (1-g SAR)      | All Position  | 0.283                 | 0.370     | 0.014     | 0.097      | 0.073      |           | 0.705 | 0.653            | 0.297            | 0.667           | 0.380             | 0.356             | 0.453                  | 0.988                  | 1.085                  | 1.061                 |
| B: Body-worn (1-g SAR) | Rear          | 0.445                 | 0.157     | 0.108     | 0.713      | 0.388      | 1.178     | 0.076 | 0.602            | 0.553            | 0.709           | 1.158             | 0.832             | 1.622                  | 0.521                  | 1.234                  | 0.908                 |
|                        | Front         | 0.385                 | 0.157     | 0.108     | 0.027      | 0.388      | 0.047     | 0.059 | 0.542            | 0.492            | 0.649           | 0.412             | 0.773             | 0.432                  | 0.444                  | 0.471                  | 0.832                 |
| C: Hotspot (1-g SAR)   | Rear          | 0.908                 | 0.254     | 0.263     | 0.784      | 0.548      | 1.197     | 0.165 | 1.162            | 1.170            | 1.425           | 1.691             | 1.455             | 2.105                  | 1.072                  | 1.856                  | 1.620                 |
|                        | Front         | 0.574                 | 0.437     | 0.263     | 0.784      | 0.548      | 0.061     | 0.112 | 1.011            | 0.836            | 1.274           | 1.358             | 1.121             | 0.634                  | 0.686                  | 1.470                  | 1.234                 |
|                        | Edge 1        |                       |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |                        |                        |                       |
|                        | Edge 2        | 0.093                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |                        |                        |                       |
|                        | Edge 3        | 0.537                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |                        |                        |                       |
|                        | Edge 4        | 0.282                 | 0.437     | 0.263     | 0.294      | 0.093      | 0.361     | 0.033 | 0.719            | 0.545            | 0.982           | 0.576             | 0.375             | 0.643                  | 0.315                  | 0.608                  | 0.408                 |

### SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure         | Test Position | Standalone SAR (W/kg) |            |            |           |       | Σ SAR (W/kg) | Calculated distance (mm) | SPLSR (≤ 0.04) | Volume Scan (Yes/No) | Figure |
|---------------------|---------------|-----------------------|------------|------------|-----------|-------|--------------|--------------------------|----------------|----------------------|--------|
|                     |               | WWAN                  | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    |              |                          |                |                      |        |
|                     |               | 1                     | 2          | 3          | 4         | 5     |              |                          |                |                      |        |
| Body-worn (1-g SAR) | Rear          | 0.445                 |            |            | 1.178     | 0.076 | 1+4+5        | 1.698                    |                |                      | 1      |
|                     |               | 0.445                 |            |            | 1.178     |       | 1+4          | 1.622                    | 147.4          | 0.01                 |        |
|                     |               | 0.445                 |            |            |           | 0.076 | 1+4          | 0.521                    | 148.5          | 0.00                 |        |
|                     |               |                       |            |            | 1.178     | 0.076 | 4+5          | 1.254                    | 11.8           | 0.12                 |        |
| Hotspot (1-g SAR)   | Rear          | 0.908                 | 0.784      |            |           | 0.165 | 1+2+5        | 1.856                    |                |                      | 2      |
|                     |               | 0.908                 | 0.784      |            |           |       | 1+2          | 1.691                    | 163.8          | 0.01                 |        |
|                     |               | 0.908                 |            |            |           | 0.165 | 1+5          | 1.072                    | 165.2          | 0.01                 |        |
|                     |               |                       | 0.784      |            |           | 0.165 | 2+5          | 0.949                    | 13.4           | 0.07                 |        |
| Hotspot (1-g SAR)   | Rear          | 0.908                 |            | 0.548      |           | 0.165 | 1+3+5        | 1.620                    |                |                      | 3      |
|                     |               | 0.908                 |            | 0.548      |           |       | 1+3          | 1.455                    | 172.4          | 0.01                 |        |
|                     |               | 0.908                 |            |            |           | 0.165 | 1+5          | 1.072                    | 165.2          | 0.01                 |        |
|                     |               |                       |            | 0.548      |           | 0.165 | 3+5          | 0.712                    | 9.7            | 0.06                 |        |
| Hotspot (1-g SAR)   | Rear          | 0.908                 |            |            | 1.197     | 0.165 | 1+4+5        | 2.269                    |                |                      | 4      |
|                     |               | 0.908                 |            |            | 1.197     |       | 1+4          | 2.105                    | 164.4          | 0.02                 |        |
|                     |               | 0.908                 |            |            |           | 0.165 | 1+4          | 1.072                    | 165.2          | 0.01                 |        |
|                     |               |                       |            |            | 1.197     | 0.165 | 4+5          | 1.362                    | 6.9            | 0.23                 |        |

## 12.2. Sum of the SAR for GSM 1900 & Wi-Fi & BT

| RF Exposure                    | Test Position | Standalone SAR (W/kg) |           |           |            |            |           |       | Σ SAR (W/kg)     |                  |                 |                   |                   |                        |                        |                        |                       |
|--------------------------------|---------------|-----------------------|-----------|-----------|------------|------------|-----------|-------|------------------|------------------|-----------------|-------------------|-------------------|------------------------|------------------------|------------------------|-----------------------|
|                                |               | WWAN                  | DTS Ant.1 | DTS Ant.2 | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    | WWAN + DTS Ant.1 | WWAN + DTS Ant.2 | WWAN + DTS MIMO | WWAN + UNII Ant.1 | WWAN + UNII Ant.2 | WWAN + BT              | WWAN + BT + UNII Ant.1 | WWAN + BT + UNII Ant.2 | WWAN + BT + UNII MIMO |
|                                |               | 1                     | 2         | 3         | 4          | 5          | 6         | 7     | 1+2              | 1+3              | 1+2+3           | 1+4               | 1+5               | A.D: 1+4+5<br>B.C: 1+6 | 1+7                    | 1+4+7                  | 1+5+7                 |
| A: Head (1-g SAR)              | All Position  | 0.098                 | 0.370     | 0.014     | 0.097      | 0.073      |           | 0.705 | 0.469            | 0.112            | 0.482           | 0.195             | 0.171             | 0.268                  | 0.803                  | 0.900                  | 0.876                 |
| B: Body-worn (1-g SAR)         | Rear          | 0.575                 | 0.157     | 0.108     | 0.713      | 0.388      | 1.178     | 0.076 | 0.732            | 0.683            | 0.840           | 1.288             | 0.963             | 1.753                  | 0.651                  | 1.364                  | 1.039                 |
|                                | Front         | 0.360                 | 0.157     | 0.108     | 0.027      | 0.388      | 0.047     | 0.059 | 0.517            | 0.468            | 0.625           | 0.387             | 0.748             | 0.407                  | 0.419                  | 0.446                  | 0.807                 |
| C: Hotspot (1-g SAR)           | Rear          | 0.480                 | 0.254     | 0.263     | 0.784      | 0.548      | 1.197     | 0.165 | 0.735            | 0.743            | 0.997           | 1.264             | 1.028             | 1.677                  | 0.645                  | 1.429                  | 1.193                 |
|                                | Front         | 0.332                 | 0.437     | 0.263     | 0.784      | 0.548      | 0.061     | 0.112 | 0.770            | 0.595            | 1.032           | 1.116             | 0.880             | 0.393                  | 0.445                  | 1.229                  | 0.992                 |
|                                | Edge 1        |                       | 0.437     | 0.263     | 0.784      | 0.548      | 1.197     | 0.198 |                  |                  |                 |                   |                   |                        |                        |                        |                       |
|                                | Edge 2        | 0.058                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |                        |                        |                       |
|                                | Edge 3        | 1.080                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |                        |                        |                       |
|                                | Edge 4        | 0.051                 | 0.437     | 0.263     | 0.294      | 0.093      | 0.361     | 0.033 | 0.488            | 0.314            | 0.751           | 0.345             | 0.145             | 0.413                  | 0.084                  | 0.378                  | 0.177                 |
| D: Product Specific (10-g SAR) | Rear          |                       |           |           | 0.641      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |                        |                        |                       |
|                                | Front         |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |                        |                        |                       |
|                                | Edge 1        |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |                        |                        |                       |
|                                | Edge 2        |                       |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |                        |                        |                       |
|                                | Edge 3        | 2.005                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |                        |                        |                       |
|                                | Edge 4        |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |                        |                        |                       |

### SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure         | Test Position | Standalone SAR (W/kg) |            |            |           |       | Σ SAR (W/kg) | Calculated distance (mm) | SPLSR (≤ 0.04) | Volume Scan (Yes/No) | Figure |
|---------------------|---------------|-----------------------|------------|------------|-----------|-------|--------------|--------------------------|----------------|----------------------|--------|
|                     |               | WWAN                  | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    |              |                          |                |                      |        |
|                     |               | 1                     | 2          | 3          | 4         | 5     |              |                          |                |                      |        |
| Body-worn (1-g SAR) | Rear          | 0.575                 |            |            | 1.178     | 0.076 | 1+4+5        | 1.829                    |                |                      | 5      |
|                     |               | 0.575                 |            |            | 1.178     |       | 1+4          | 1.753                    | 157.6          | 0.01                 |        |
|                     |               | 0.575                 |            |            |           | 0.076 | 1+4          | 0.651                    | 160.7          | 0.00                 |        |
|                     |               |                       |            |            | 1.178     | 0.076 | 4+5          | 1.254                    | 11.8           | 0.12                 |        |
| Hotspot (1-g SAR)   | Rear          | 0.480                 |            |            | 1.197     | 0.165 | 1+4+5        | 1.842                    |                |                      | 6      |
|                     |               | 0.480                 |            |            | 1.197     |       | 1+4          | 1.677                    | 158.4          | 0.01                 |        |
|                     |               | 0.480                 |            |            |           | 0.165 | 1+4          | 0.645                    | 159.7          | 0.00                 |        |
|                     |               |                       |            |            | 1.197     | 0.165 | 4+5          | 1.362                    | 6.9            | 0.23                 |        |

### Note(s):

- Blue values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.

2. For UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

### 12.3. Sum of the SAR for WCDMA Band II & Wi-Fi & BT

| RF Exposure                    | Test Position | Standalone SAR (W/kg) |           |           |            |            |           |       | Σ SAR (W/kg)     |                  |                 |                   |                   |                        |           |                        |                        |                            |
|--------------------------------|---------------|-----------------------|-----------|-----------|------------|------------|-----------|-------|------------------|------------------|-----------------|-------------------|-------------------|------------------------|-----------|------------------------|------------------------|----------------------------|
|                                |               | WWAN                  | DTS Ant.1 | DTS Ant.2 | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    | WWAN + DTS Ant.1 | WWAN + DTS Ant.2 | WWAN + DTS MIMO | WWAN + UNII Ant.1 | WWAN + UNII Ant.2 | WWAN + UNII MIMO       | WWAN + BT | WWAN + BT + UNII Ant.1 | WWAN + BT + UNII Ant.2 | WWAN + BT + UNII MIMO      |
|                                |               | 1                     | 2         | 3         | 4          | 5          | 6         | 7     | 1+2              | 1+3              | 1+2+3           | 1+4               | 1+5               | A.D: 1+4+5<br>B.C: 1+6 | 1+7       | 1+4+7                  | 1+5+7                  | A.D: 1+4+5+7<br>B.C: 1+6+7 |
| A: Head (1-g SAR)              | All Position  | 0.048                 | 0.370     | 0.014     | 0.097      | 0.073      |           | 0.705 | 0.418            | 0.062            | 0.432           | 0.145             | 0.121             | 0.218                  | 0.753     | 0.850                  | 0.825                  | 0.922                      |
| B: Body-worn (1-g SAR)         | Rear          | 0.697                 | 0.157     | 0.108     | 0.713      | 0.388      | 1.178     | 0.076 | 0.854            | 0.805            | 0.962           | 1.410             | 1.085             | 1.875                  | 0.773     | 1.486                  | 1.161                  | 1.951                      |
|                                | Front         | 0.604                 | 0.157     | 0.108     | 0.027      | 0.388      | 0.047     | 0.059 | 0.761            | 0.712            | 0.869           | 0.631             | 0.992             | 0.651                  | 0.663     | 0.690                  | 1.051                  | 0.710                      |
| C: Hotspot (1-g SAR)           | Rear          | 0.510                 | 0.254     | 0.263     | 0.784      | 0.548      | 1.197     | 0.165 | 0.764            | 0.773            | 1.027           | 1.294             | 1.057             | 1.707                  | 0.675     | 1.459                  | 1.222                  | 1.872                      |
|                                | Front         | 0.416                 | 0.437     | 0.263     | 0.784      | 0.548      | 0.061     | 0.112 | 0.853            | 0.678            | 1.116           | 1.199             | 0.963             | 0.476                  | 0.528     | 1.312                  | 1.076                  | 0.589                      |
|                                | Edge 1        |                       | 0.437     | 0.263     | 0.784      | 0.548      | 1.197     | 0.198 |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 2        | 0.075                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 3        | 1.174                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 4        | 0.044                 | 0.437     | 0.263     | 0.294      | 0.093      | 0.361     | 0.033 | 0.481            | 0.306            | 0.744           | 0.337             | 0.137             | 0.405                  | 0.076     | 0.370                  | 0.170                  | 0.438                      |
| D: Product Specific (10-g SAR) | Rear          | 1.241                 |           |           | 0.641      | 0.715      |           |       |                  |                  |                 | 1.882             | 1.956             | 2.597                  |           |                        |                        |                            |
|                                | Front         |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 1        |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 2        |                       |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 3        | 2.242                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 4        |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |

#### SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure         | Test Position | Standalone SAR (W/kg) |            |            |           |       | Σ SAR (W/kg)   | Calculated distance (mm) | SPLSR (≤ 0.04) | Volume Scan (Yes/ No) | Figure |
|---------------------|---------------|-----------------------|------------|------------|-----------|-------|----------------|--------------------------|----------------|-----------------------|--------|
|                     |               | WWAN                  | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    |                |                          |                |                       |        |
|                     |               | 1                     | 2          | 3          | 4         | 5     |                |                          |                |                       |        |
| Body-worn (1-g SAR) | Rear          | 0.697                 |            |            | 1.178     | 0.076 | 1+4+5<br>1.951 |                          |                |                       | 7      |
|                     |               | 0.697                 |            |            | 1.178     |       | 1+4<br>0.773   | 161.8                    | 0.02           | No                    |        |
|                     |               | 0.697                 |            |            |           | 0.076 | 1+4<br>0.773   | 164.8                    | 0.00           | No                    |        |
|                     |               |                       |            |            | 1.178     | 0.076 | 4+5<br>1.254   | 11.8                     | 0.12           | Yes                   |        |
| Hotspot (1-g SAR)   | Rear          | 0.510                 |            |            | 1.197     | 0.165 | 1+4+5<br>1.872 |                          |                |                       | 8      |
|                     |               | 0.510                 |            |            | 1.197     |       | 1+4<br>1.707   | 163.9                    | 0.01           | No                    |        |
|                     |               | 0.510                 |            |            |           | 0.165 | 1+4<br>0.675   | 165.2                    | 0.00           | No                    |        |
|                     |               |                       |            |            | 1.197     | 0.165 | 4+5<br>1.362   | 6.9                      | 0.23           | Yes                   |        |

#### Note(s):

- Blue values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.
- For UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

## 12.4. Sum of the SAR for WCDMA Band IV & Wi-Fi & BT

| RF Exposure                    | Test Position | Standalone SAR (W/kg) |           |           |            |            |           |       | Σ SAR (W/kg)     |                  |                 |                   |                   |                        |           |                        |                        |                            |
|--------------------------------|---------------|-----------------------|-----------|-----------|------------|------------|-----------|-------|------------------|------------------|-----------------|-------------------|-------------------|------------------------|-----------|------------------------|------------------------|----------------------------|
|                                |               | WWAN                  | DTS Ant.1 | DTS Ant.2 | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    | WWAN + DTS Ant.1 | WWAN + DTS Ant.2 | WWAN + DTS MIMO | WWAN + UNII Ant.1 | WWAN + UNII Ant.2 | WWAN + UNII MIMO       | WWAN + BT | WWAN + BT + UNII Ant.1 | WWAN + BT + UNII Ant.2 | WWAN + BT + UNII MIMO      |
|                                |               | 1                     | 2         | 3         | 4          | 5          | 6         | 7     | 1+2              | 1+3              | 1+2+3           | 1+4               | 1+5               | A.D: 1+4+5<br>B.C: 1+6 | 1+7       | 1+4+7                  | 1+5+7                  | A.D: 1+4+5+7<br>B.C: 1+6+7 |
| A: Head (1-g SAR)              | All Position  | 0.133                 | 0.370     | 0.014     | 0.097      | 0.073      |           | 0.705 | 0.503            | 0.147            | 0.517           | 0.230             | 0.206             | 0.303                  | 0.838     | 0.935                  | 0.911                  | 1.008                      |
| B: Body-worn (1-g SAR)         | Rear          | 0.976                 | 0.157     | 0.108     | 0.713      | 0.388      | 1.178     | 0.076 | 1.133            | 1.084            | 1.241           | 1.689             | 1.364             | 2.154                  | 1.052     | 1.765                  | 1.440                  | 2.230                      |
|                                | Front         | 0.701                 | 0.157     | 0.108     | 0.027      | 0.388      | 0.047     | 0.059 | 0.858            | 0.809            | 0.966           | 0.728             | 1.089             | 0.748                  | 0.760     | 0.787                  | 1.148                  | 0.807                      |
| C: Hotspot (1-g SAR)           | Rear          | 0.740                 | 0.254     | 0.263     | 0.784      | 0.548      | 1.197     | 0.165 | 0.995            | 1.003            | 1.257           | 1.524             | 1.288             | 1.937                  | 0.905     | 1.689                  | 1.453                  | 2.102                      |
|                                | Front         | 0.589                 | 0.437     | 0.263     | 0.784      | 0.548      | 0.061     | 0.112 | 1.026            | 0.851            | 1.288           | 1.372             | 1.136             | 0.649                  | 0.701     | 1.485                  | 1.248                  | 0.762                      |
|                                | Edge 1        |                       |           |           |            |            | 1.197     | 0.198 |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 2        | 0.144                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 3        | 1.238                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
| D: Product Specific (10-g SAR) | Edge 4        | 0.087                 | 0.437     | 0.263     | 0.294      | 0.093      | 0.361     | 0.033 | 0.525            | 0.350            | 0.787           | 0.381             | 0.181             | 0.449                  | 0.120     | 0.414                  | 0.214                  | 0.482                      |
|                                | Rear          | 1.635                 |           |           | 0.641      | 0.715      |           |       |                  |                  |                 | 2.276             | 2.350             | 2.991                  |           |                        |                        |                            |
|                                | Front         | 1.451                 |           |           | 0.945      | 0.715      |           |       |                  |                  |                 | 2.396             | 2.166             | 3.111                  |           |                        |                        |                            |
|                                | Edge 1        |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 2        |                       |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 3        | 1.940                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 4        |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |

### SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure         | Test Position | Standalone SAR (W/kg) |            |            |           |       | Σ SAR (W/kg) | Calculated distance (mm) | SPLSR (≤ 0.04) | Volume Scan (Yes/ No) | Figure |
|---------------------|---------------|-----------------------|------------|------------|-----------|-------|--------------|--------------------------|----------------|-----------------------|--------|
|                     |               | WWAN                  | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    |              |                          |                |                       |        |
|                     |               | 1                     | 2          | 3          | 4         | 5     |              |                          |                |                       |        |
| Body-worn (1-g SAR) | Rear          | 0.976                 | 0.713      |            |           | 0.076 | 1+2+5        | 1.765                    |                |                       | 9      |
|                     |               | 0.976                 | 0.713      |            |           |       | 1+2          | 1.689                    | 156.9          | 0.01                  |        |
|                     |               | 0.976                 |            |            |           | 0.076 | 1+5          | 1.052                    | 160.7          | 0.01                  |        |
|                     |               |                       | 0.713      |            |           | 0.076 | 2+5          | 0.789                    | 13.1           | 0.05                  |        |
| Body-worn (1-g SAR) | Rear          | 0.976                 |            |            | 1.178     | 0.076 | 1+4+5        | 2.230                    |                |                       | 10     |
|                     |               | 0.976                 |            |            | 1.178     |       | 1+4          | 2.154                    | 158.1          | 0.02                  |        |
|                     |               | 0.976                 |            |            |           | 0.076 | 1+4          | 1.052                    | 160.7          | 0.01                  |        |
|                     |               |                       |            |            | 1.178     | 0.076 | 4+5          | 1.254                    | 11.8           | 0.12                  |        |
| Hotspot (1-g SAR)   | Rear          | 0.740                 | 0.784      |            |           | 0.165 | 1+2+5        | 1.689                    |                |                       | 11     |
|                     |               | 0.740                 | 0.784      |            |           |       | 1+2          | 1.524                    | 158.7          | 0.01                  |        |
|                     |               | 0.740                 |            |            |           | 0.165 | 1+5          | 0.905                    | 160.8          | 0.01                  |        |
|                     |               |                       | 0.784      |            |           | 0.165 | 2+5          | 0.949                    | 13.4           | 0.07                  |        |
| Hotspot (1-g SAR)   | Rear          | 0.740                 |            |            | 1.197     | 0.165 | 1+4+5        | 2.102                    |                |                       | 12     |
|                     |               | 0.740                 |            |            | 1.197     |       | 1+4          | 1.937                    | 159.7          | 0.02                  |        |
|                     |               | 0.740                 |            |            |           | 0.165 | 1+4          | 0.905                    | 160.8          | 0.01                  |        |
|                     |               |                       |            |            | 1.197     | 0.165 | 4+5          | 1.362                    | 6.9            | 0.23                  |        |

### Note(s):

- Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.
- For UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

## 12.5. Sum of the SAR for WCDMA Band V & Wi-Fi & BT

| RF Exposure            | Test Position | Standalone SAR (W/kg) |           |           |            |            |           |       | Σ SAR (W/kg)     |                  |                 |                   |                   |                        |           |                        |                        |                            |
|------------------------|---------------|-----------------------|-----------|-----------|------------|------------|-----------|-------|------------------|------------------|-----------------|-------------------|-------------------|------------------------|-----------|------------------------|------------------------|----------------------------|
|                        |               | WWAN                  | DTS Ant.1 | DTS Ant.2 | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    | WWAN + DTS Ant.1 | WWAN + DTS Ant.2 | WWAN + DTS MIMO | WWAN + UNII Ant.1 | WWAN + UNII Ant.2 | WWAN + UNII MIMO       | WWAN + BT | WWAN + BT + UNII Ant.1 | WWAN + BT + UNII Ant.2 | WWAN + BT + UNII MIMO      |
|                        |               | 1                     | 2         | 3         | 4          | 5          | 6         | 7     | 1+2              | 1+3              | 1+2+3           | 1+4               | 1+5               | A.D: 1+4+5<br>B.C: 1+6 | 1+7       | 1+4+7                  | 1+5+7                  | A.D: 1+4+5+7<br>B.C: 1+6+7 |
| A: Head (1-g SAR)      | All Position  | 0.217                 | 0.370     | 0.014     | 0.097      | 0.073      |           | 0.705 | 0.587            | 0.231            | 0.601           | 0.314             | 0.290             | 0.387                  | 0.922     | 1.019                  | 0.995                  | 1.092                      |
| B: Body-worn (1-g SAR) | Rear          | 0.383                 | 0.157     | 0.108     | 0.713      | 0.388      | 1.178     | 0.076 | 0.540            | 0.491            | 0.648           | 1.096             | 0.771             | 1.561                  | 0.459     | 1.172                  | 0.847                  | 1.637                      |
|                        | Front         | 0.303                 | 0.157     | 0.108     | 0.027      | 0.388      | 0.047     | 0.059 | 0.460            | 0.411            | 0.568           | 0.330             | 0.691             | 0.350                  | 0.362     | 0.389                  | 0.750                  | 0.409                      |
| C: Hotspot (1-g SAR)   | Rear          | 0.734                 | 0.254     | 0.263     | 0.784      | 0.548      | 1.197     | 0.165 | 0.989            | 0.997            | 1.251           | 1.518             | 1.282             | 1.931                  | 0.899     | 1.683                  | 1.447                  | 2.096                      |
|                        | Front         | 0.516                 | 0.437     | 0.263     | 0.784      | 0.548      | 0.061     | 0.112 | 0.954            | 0.779            | 1.216           | 1.300             | 1.064             | 0.577                  | 0.629     | 1.413                  | 1.176                  | 0.689                      |
|                        | Edge 1        |                       | 0.437     | 0.263     | 0.784      | 0.548      | 1.197     | 0.198 |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                        | Edge 2        | 0.113                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                        | Edge 3        | 0.458                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                        | Edge 4        | 0.234                 | 0.437     | 0.263     | 0.294      | 0.093      | 0.361     | 0.033 | 0.671            | 0.496            | 0.934           | 0.527             | 0.327             | 0.595                  | 0.266     | 0.560                  | 0.360                  | 0.628                      |

### SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure         | Test Position | Standalone SAR (W/kg) |            |            |           |       | Σ SAR (W/kg) | Calculated distance (mm) | SPLSR (≤ 0.04) | Volume Scan (Yes/ No) | Figure |
|---------------------|---------------|-----------------------|------------|------------|-----------|-------|--------------|--------------------------|----------------|-----------------------|--------|
|                     |               | WWAN                  | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    |              |                          |                |                       |        |
|                     |               | 1                     | 2          | 3          | 4         | 5     |              |                          |                |                       |        |
| Body-worn (1-g SAR) | Rear          | 0.383                 |            |            | 1.178     | 0.076 | 1+4+5        | 1.637                    |                |                       | 13     |
|                     |               | 0.383                 |            |            | 1.178     |       | 1+4          | 1.561                    | 159.4          | 0.01                  |        |
|                     |               | 0.383                 |            |            |           | 0.076 | 1+4          | 0.459                    | 160.7          | 0.00                  |        |
|                     |               |                       |            |            | 1.178     | 0.076 | 4+5          | 1.254                    | 11.8           | 0.12                  |        |
| Hotspot (1-g SAR)   | Rear          | 0.734                 | 0.784      |            |           | 0.165 | 1+2+5        | 1.683                    |                |                       | 14     |
|                     |               | 0.734                 | 0.784      |            |           |       | 1+2          | 1.518                    | 165.6          | 0.01                  |        |
|                     |               | 0.734                 |            |            |           | 0.165 | 1+5          | 0.899                    | 166.9          | 0.01                  |        |
|                     |               |                       | 0.784      |            |           | 0.165 | 2+5          | 0.949                    | 13.4           | 0.07                  |        |
| Hotspot (1-g SAR)   | Rear          | 0.734                 |            |            | 1.197     | 0.165 | 1+4+5        | 2.096                    |                |                       | 15     |
|                     |               | 0.734                 |            |            | 1.197     |       | 1+4          | 1.931                    | 166.1          | 0.02                  |        |
|                     |               | 0.734                 |            |            |           | 0.165 | 1+4          | 0.899                    | 166.9          | 0.01                  |        |
|                     |               |                       |            |            | 1.197     | 0.165 | 4+5          | 1.362                    | 6.9            | 0.23                  |        |

## 12.6. Sum of the SAR for LTE Band 12 & Wi-Fi & BT

| RF Exposure            | Test Position | Standalone SAR (W/kg) |           |           |            |            |           |       | Σ SAR (W/kg)     |                  |                 |                   |                   |                        |           |                        |                        |                            |
|------------------------|---------------|-----------------------|-----------|-----------|------------|------------|-----------|-------|------------------|------------------|-----------------|-------------------|-------------------|------------------------|-----------|------------------------|------------------------|----------------------------|
|                        |               | WWAN                  | DTS Ant.1 | DTS Ant.2 | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    | WWAN + DTS Ant.1 | WWAN + DTS Ant.2 | WWAN + DTS MIMO | WWAN + UNII Ant.1 | WWAN + UNII Ant.2 | WWAN + UNII MIMO       | WWAN + BT | WWAN + BT + UNII Ant.1 | WWAN + BT + UNII Ant.2 | WWAN + BT + UNII MIMO      |
|                        |               | 1                     | 2         | 3         | 4          | 5          | 6         | 7     | 1+2              | 1+3              | 1+2+3           | 1+4               | 1+5               | A.D: 1+4+5<br>B.C: 1+6 | 1+7       | 1+4+7                  | 1+5+7                  | A.D: 1+4+5+7<br>B.C: 1+6+7 |
| A: Head (1-g SAR)      | All Position  | 0.162                 | 0.370     | 0.014     | 0.097      | 0.073      |           | 0.705 | 0.532            | 0.176            | 0.546           | 0.259             | 0.235             | 0.332                  | 0.867     | 0.964                  | 0.940                  | 1.037                      |
| B: Body-worn (1-g SAR) | Rear          | 0.274                 | 0.157     | 0.108     | 0.713      | 0.388      | 1.178     | 0.076 | 0.431            | 0.382            | 0.539           | 0.987             | 0.662             | 1.452                  | 0.350     | 1.063                  | 0.738                  | 1.528                      |
|                        | Front         | 0.228                 | 0.157     | 0.108     | 0.027      | 0.388      | 0.047     | 0.059 | 0.385            | 0.336            | 0.493           | 0.255             | 0.616             | 0.275                  | 0.287     | 0.314                  | 0.675                  | 0.334                      |
| C: Hotspot (1-g SAR)   | Rear          | 0.342                 | 0.254     | 0.263     | 0.784      | 0.548      | 1.197     | 0.165 | 0.596            | 0.604            | 0.859           | 1.125             | 0.889             | 1.539                  | 0.506     | 1.290                  | 1.054                  | 1.703                      |
|                        | Front         | 0.225                 | 0.437     | 0.263     | 0.784      | 0.548      | 0.061     | 0.112 | 0.663            | 0.488            | 0.925           | 1.009             | 0.773             | 0.286                  | 0.338     | 1.122                  | 0.885                  | 0.398                      |
|                        | Edge 1        |                       | 0.437     | 0.263     | 0.784      | 0.548      | 1.197     | 0.198 |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                        | Edge 2        | 0.170                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                        | Edge 3        | 0.173                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                        | Edge 4        | 0.278                 | 0.437     | 0.263     | 0.294      | 0.093      | 0.361     | 0.033 | 0.715            | 0.541            | 0.978           | 0.572             | 0.371             | 0.639                  | 0.311     | 0.604                  | 0.404                  | 0.672                      |

### SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure       | Test Position | Standalone SAR (W/kg) |            |            |           |       | Σ SAR (W/kg) | Calculated distance (mm) | SPLSR (≤ 0.04) | Volume Scan (Yes/ No) | Figure |
|-------------------|---------------|-----------------------|------------|------------|-----------|-------|--------------|--------------------------|----------------|-----------------------|--------|
|                   |               | WWAN                  | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    |              |                          |                |                       |        |
|                   |               | 1                     | 2          | 3          | 4         | 5     |              |                          |                |                       |        |
| Hotspot (1-g SAR) | Rear          | 0.342                 |            |            | 1.197     | 0.165 | 1+4+5        | 1.703                    |                |                       | 16     |
|                   |               | 0.342                 |            |            | 1.197     |       | 1+4          | 1.539                    | 164.2          | 0.01                  |        |
|                   |               | 0.342                 |            |            |           | 0.165 | 1+4          | 0.506                    | 164.7          | 0.00                  |        |
|                   |               |                       |            |            | 1.197     | 0.165 | 4+5          | 1.362                    | 6.9            | 0.23                  |        |

### Note(s):

- Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.
- For UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

## 12.7. Sum of the SAR for LTE Band 13 & Wi-Fi & BT

| RF Exposure            | Test Position | Standalone SAR (W/kg) |           |           |            |            |           |       | Σ SAR (W/kg)     |                  |                 |                   |                   |                        |           |                        |                        |                            |
|------------------------|---------------|-----------------------|-----------|-----------|------------|------------|-----------|-------|------------------|------------------|-----------------|-------------------|-------------------|------------------------|-----------|------------------------|------------------------|----------------------------|
|                        |               | WWAN                  | DTS Ant.1 | DTS Ant.2 | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    | WWAN + DTS Ant.1 | WWAN + DTS Ant.2 | WWAN + DTS MIMO | WWAN + UNII Ant.1 | WWAN + UNII Ant.2 | WWAN + UNII MIMO       | WWAN + BT | WWAN + BT + UNII Ant.1 | WWAN + BT + UNII Ant.2 | WWAN + BT + UNII MIMO      |
|                        |               | 1                     | 2         | 3         | 4          | 5          | 6         | 7     | 1+2              | 1+3              | 1+2+3           | 1+4               | 1+5               | A.D: 1+4+5<br>B.C: 1+6 | 1+7       | 1+4+7                  | 1+5+7                  | A.D: 1+4+5+7<br>B.C: 1+6+7 |
| A: Head (1-g SAR)      | All Position  | 0.215                 | 0.370     | 0.014     | 0.097      | 0.073      |           | 0.705 | 0.585            | 0.228            | 0.599           | 0.312             | 0.288             | 0.384                  | 0.919     | 1.016                  | 0.992                  | 1.089                      |
| B: Body-worn (1-g SAR) | Rear          | 0.380                 | 0.157     | 0.108     | 0.713      | 0.388      | 1.178     | 0.076 | 0.537            | 0.488            | 0.645           | 1.093             | 0.767             | 1.558                  | 0.456     | 1.169                  | 0.843                  | 1.634                      |
|                        | Front         | 0.303                 | 0.157     | 0.108     | 0.027      | 0.388      | 0.047     | 0.059 | 0.460            | 0.411            | 0.568           | 0.330             | 0.691             | 0.350                  | 0.362     | 0.389                  | 0.750                  | 0.409                      |
| C: Hotspot (1-g SAR)   | Rear          | 0.569                 | 0.254     | 0.263     | 0.784      | 0.548      | 1.197     | 0.165 | 0.823            | 0.832            | 1.086           | 1.353             | 1.117             | 1.766                  | 0.734     | 1.518                  | 1.282                  | 1.931                      |
|                        | Front         | 0.406                 | 0.437     | 0.263     | 0.784      | 0.548      | 0.061     | 0.112 | 0.843            | 0.669            | 1.106           | 1.190             | 0.954             | 0.467                  | 0.518     | 1.302                  | 1.066                  | 0.579                      |
|                        | Edge 1        |                       | 0.437     | 0.263     | 0.784      | 0.548      | 1.197     | 0.198 |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                        | Edge 2        | 0.127                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                        | Edge 3        | 0.337                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                        | Edge 4        | 0.334                 | 0.437     | 0.263     | 0.294      | 0.093      | 0.361     | 0.033 | 0.771            | 0.597            | 1.034           | 0.628             | 0.427             | 0.695                  | 0.367     | 0.661                  | 0.460                  | 0.728                      |

### SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure         | Test Position | Standalone SAR (W/kg) |            |            |           |       | Σ SAR (W/kg) | Calculated distance (mm) | SPLSR (≤ 0.04) | Volume Scan (Yes/ No) | Figure |
|---------------------|---------------|-----------------------|------------|------------|-----------|-------|--------------|--------------------------|----------------|-----------------------|--------|
|                     |               | WWAN                  | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    |              |                          |                |                       |        |
|                     |               | 1                     | 2          | 3          | 4         | 5     |              |                          |                |                       |        |
| Body-worn (1-g SAR) | Rear          | 0.380                 |            |            | 1.178     | 0.076 | 1+4+5        | 1.634                    |                |                       | 17     |
|                     |               | 0.380                 |            |            | 1.178     |       | 1+4          | 1.558                    | 126.6          | 0.02                  |        |
|                     |               | 0.380                 |            |            | 0.076     | 1+4   | 0.456        | 130.0                    | 0.00           | No                    |        |
|                     |               |                       |            |            | 1.178     | 0.076 | 4+5          | 1.254                    | 11.8           | 0.12                  |        |
| Hotspot (1-g SAR)   | Rear          | 0.569                 |            |            | 1.197     | 0.165 | 1+4+5        | 1.931                    |                |                       | 18     |
|                     |               | 0.569                 |            |            | 1.197     |       | 1+4          | 1.766                    | 162.3          | 0.01                  |        |
|                     |               | 0.569                 |            |            | 0.165     | 1+4   | 0.734        | 163.2                    | 0.00           | No                    |        |
|                     |               |                       |            |            | 1.197     | 0.165 | 4+5          | 1.362                    | 6.9            | 0.23                  |        |

## 12.8. Sum of the SAR for LTE Band 25(Band 2) & Wi-Fi & BT

| RF Exposure                    | Test Position | Standalone SAR (W/kg) |           |           |            |            |           |       | Σ SAR (W/kg)     |                  |                 |                   |                   |                        |           |                        |                        |                            |
|--------------------------------|---------------|-----------------------|-----------|-----------|------------|------------|-----------|-------|------------------|------------------|-----------------|-------------------|-------------------|------------------------|-----------|------------------------|------------------------|----------------------------|
|                                |               | WWAN                  | DTS Ant.1 | DTS Ant.2 | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    | WWAN + DTS Ant.1 | WWAN + DTS Ant.2 | WWAN + DTS MIMO | WWAN + UNII Ant.1 | WWAN + UNII Ant.2 | WWAN + UNII MIMO       | WWAN + BT | WWAN + BT + UNII Ant.1 | WWAN + BT + UNII Ant.2 | WWAN + BT + UNII MIMO      |
|                                |               | 1                     | 2         | 3         | 4          | 5          | 6         | 7     | 1+2              | 1+3              | 1+2+3           | 1+4               | 1+5               | A.D: 1+4+5<br>B.C: 1+6 | 1+7       | 1+4+7                  | 1+5+7                  | A.D: 1+4+5+7<br>B.C: 1+6+7 |
| A: Head (1-g SAR)              | All Position  | 0.109                 | 0.370     | 0.014     | 0.097      | 0.073      |           | 0.705 | 0.479            | 0.123            | 0.493           | 0.206             | 0.182             | 0.279                  | 0.814     | 0.911                  | 0.887                  | 0.984                      |
| B: Body-worn (1-g SAR)         | Rear          | 0.757                 | 0.157     | 0.108     | 0.713      | 0.388      | 1.178     | 0.076 | 0.913            | 0.864            | 1.021           | 1.470             | 1.144             | 1.934                  | 0.832     | 1.545                  | 1.220                  | 2.010                      |
|                                | Front         | 0.549                 | 0.157     | 0.108     | 0.027      | 0.388      | 0.047     | 0.059 | 0.706            | 0.656            | 0.813           | 0.576             | 0.937             | 0.596                  | 0.608     | 0.635                  | 0.996                  | 0.655                      |
| C: Hotspot (1-g SAR)           | Rear          | 0.589                 | 0.254     | 0.263     | 0.784      | 0.548      | 1.197     | 0.165 | 0.843            | 0.852            | 1.106           | 1.373             | 1.137             | 1.786                  | 0.754     | 1.538                  | 1.301                  | 1.951                      |
|                                | Front         | 0.420                 | 0.437     | 0.263     | 0.784      | 0.548      | 0.061     | 0.112 | 0.857            | 0.683            | 1.120           | 1.204             | 0.968             | 0.481                  | 0.532     | 1.316                  | 1.080                  | 0.593                      |
|                                | Edge 1        |                       | 0.437     | 0.263     | 0.784      | 0.548      | 1.197     | 0.198 |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 2        | 0.070                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 3        | 1.232                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 4        | 0.040                 | 0.437     | 0.263     | 0.294      | 0.093      | 0.361     | 0.033 | 0.477            | 0.303            | 0.740           | 0.333             | 0.133             | 0.401                  | 0.072     | 0.366                  | 0.166                  | 0.434                      |
| D: Product Specific (10-g SAR) | Rear          | 1.584                 |           |           | 0.641      | 0.715      |           |       |                  |                  |                 | 2.225             | 2.299             | 2.940                  |           |                        |                        |                            |
|                                | Front         |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 1        |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 2        |                       |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 3        | 2.618                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 4        |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |

### SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure         | Test Position | Standalone SAR (W/kg) |            |            |           |       | Σ SAR (W/kg) | Calculated distance (mm) | SPLSR (≤ 0.04) | Volume Scan (Yes/ No) | Figure |
|---------------------|---------------|-----------------------|------------|------------|-----------|-------|--------------|--------------------------|----------------|-----------------------|--------|
|                     |               | WWAN                  | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    |              |                          |                |                       |        |
|                     |               | 1                     | 2          | 3          | 4         | 5     |              |                          |                |                       |        |
| Body-worn (1-g SAR) | Rear          | 0.757                 |            |            | 1.178     | 0.076 | 1+4+5        | 2.010                    |                |                       | 19     |
|                     |               | 0.757                 |            |            | 1.178     |       | 1+4          | 1.934                    | 160.4          | 0.02                  |        |
|                     |               | 0.757                 |            |            | 0.076     | 1+4   | 0.832        | 163.4                    | 0.00           | No                    |        |
|                     |               |                       |            |            | 1.178     | 0.076 | 4+5          | 1.254                    | 11.8           | 0.12                  |        |
| Hotspot (1-g SAR)   | Rear          | 0.589                 |            |            | 1.197     | 0.165 | 1+4+5        | 1.951                    |                |                       | 20     |
|                     |               | 0.589                 |            |            | 1.197     |       | 1+4          | 1.786                    | 163.1          | 0.01                  |        |
|                     |               | 0.589                 |            |            | 0.165     | 1+4   | 0.754        | 164.6                    | 0.00           | No                    |        |
|                     |               |                       |            |            | 1.197     | 0.165 | 4+5          | 1.362                    | 6.9            | 0.23                  |        |

### Note(s):

- Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.
- For UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

## 12.9. Sum of the SAR for LTE Band 26 & Wi-Fi & BT

| RF Exposure            | Test Position | Standalone SAR (W/kg) |           |           |            |            |           |       | Σ SAR (W/kg)     |                  |                 |                   |                   |                        |           |                        |                        |                            |
|------------------------|---------------|-----------------------|-----------|-----------|------------|------------|-----------|-------|------------------|------------------|-----------------|-------------------|-------------------|------------------------|-----------|------------------------|------------------------|----------------------------|
|                        |               | WWAN                  | DTS Ant.1 | DTS Ant.2 | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    | WWAN + DTS Ant.1 | WWAN + DTS Ant.2 | WWAN + DTS MIMO | WWAN + UNII Ant.1 | WWAN + UNII Ant.2 | WWAN + UNII MIMO       | WWAN + BT | WWAN + BT + UNII Ant.1 | WWAN + BT + UNII Ant.2 | WWAN + BT + UNII MIMO      |
|                        |               | 1                     | 2         | 3         | 4          | 5          | 6         | 7     | 1+2              | 1+3              | 1+2+3           | 1+4               | 1+5               | A.D: 1+4+5<br>B.C: 1+6 | 1+7       | 1+4+7                  | 1+5+7                  | A.D: 1+4+5+7<br>B.C: 1+6+7 |
| A: Head (1-g SAR)      | All Position  | 0.165                 | 0.370     | 0.014     | 0.097      | 0.073      |           | 0.705 | 0.535            | 0.179            | 0.549           | 0.262             | 0.238             | 0.335                  | 0.869     | 0.966                  | 0.942                  | 1.039                      |
| B: Body-worn (1-g SAR) | Rear          | 0.280                 | 0.157     | 0.108     | 0.713      | 0.388      | 1.178     | 0.076 | 0.437            | 0.387            | 0.544           | 0.993             | 0.667             | 1.457                  | 0.356     | 1.069                  | 0.743                  | 1.533                      |
|                        | Front         | 0.246                 | 0.157     | 0.108     | 0.027      | 0.388      | 0.047     | 0.059 | 0.403            | 0.354            | 0.511           | 0.273             | 0.634             | 0.293                  | 0.305     | 0.332                  | 0.693                  | 0.352                      |
| C: Hotspot (1-g SAR)   | Rear          | 0.647                 | 0.254     | 0.263     | 0.784      | 0.548      | 1.197     | 0.165 | 0.901            | 0.910            | 1.164           | 1.431             | 1.195             | 1.844                  | 0.812     | 1.596                  | 1.359                  | 2.009                      |
|                        | Front         | 0.422                 | 0.437     | 0.263     | 0.784      | 0.548      | 0.061     | 0.112 | 0.859            | 0.685            | 1.122           | 1.206             | 0.969             | 0.482                  | 0.534     | 1.318                  | 1.082                  | 0.595                      |
|                        | Edge 1        |                       | 0.437     | 0.263     | 0.784      | 0.548      | 1.197     | 0.198 |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                        | Edge 2        | 0.069                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                        | Edge 3        | 0.369                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                        | Edge 4        | 0.185                 | 0.437     | 0.263     | 0.294      | 0.093      | 0.361     | 0.033 | 0.622            | 0.448            | 0.885           | 0.478             | 0.278             | 0.546                  | 0.218     | 0.511                  | 0.311                  | 0.579                      |

### SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure       | Test Position | Standalone SAR (W/kg) |            |            |           |       | Σ SAR (W/kg) | Calculated distance (mm) | SPLSR (≤ 0.04) | Volume Scan (Yes/ No) | Figure |
|-------------------|---------------|-----------------------|------------|------------|-----------|-------|--------------|--------------------------|----------------|-----------------------|--------|
|                   |               | WWAN                  | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    |              |                          |                |                       |        |
|                   |               | 1                     | 2          | 3          | 4         | 5     |              |                          |                |                       |        |
| Hotspot (1-g SAR) | Rear          | 0.647                 |            |            | 1.197     | 0.165 | 1+4+5        | 2.009                    |                |                       | 21     |
|                   |               | 0.647                 |            |            | 1.197     |       | 1+4          | 1.844                    | 162.9          | 0.02                  |        |
|                   |               | 0.647                 |            |            |           | 0.165 | 1+4          | 0.812                    | 163.6          | 0.00                  |        |
|                   |               |                       |            |            | 1.197     | 0.165 | 4+5          | 1.362                    | 6.9            | 0.23                  |        |

## 12.10. Sum of the SAR for LTE Band 41 & Wi-Fi & BT

| RF Exposure                    | Test Position | Standalone SAR (W/kg) |           |           |            |            |           |       | Σ SAR (W/kg)     |                  |                 |                   |                   |                        |           |                        |                        |                            |
|--------------------------------|---------------|-----------------------|-----------|-----------|------------|------------|-----------|-------|------------------|------------------|-----------------|-------------------|-------------------|------------------------|-----------|------------------------|------------------------|----------------------------|
|                                |               | WWAN                  | DTS Ant.1 | DTS Ant.2 | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    | WWAN + DTS Ant.1 | WWAN + DTS Ant.2 | WWAN + DTS MIMO | WWAN + UNII Ant.1 | WWAN + UNII Ant.2 | WWAN + UNII MIMO       | WWAN + BT | WWAN + BT + UNII Ant.1 | WWAN + BT + UNII Ant.2 | WWAN + BT + UNII MIMO      |
|                                |               | 1                     | 2         | 3         | 4          | 5          | 6         | 7     | 1+2              | 1+3              | 1+2+3           | 1+4               | 1+5               | A.D: 1+4+5<br>B.C: 1+6 | 1+7       | 1+4+7                  | 1+5+7                  | A.D: 1+4+5+7<br>B.C: 1+6+7 |
| A: Head (1-g SAR)              | All Position  | 0.078                 | 0.370     | 0.014     | 0.097      | 0.073      |           | 0.705 | 0.448            | 0.092            | 0.462           | 0.175             | 0.151             | 0.248                  | 0.783     | 0.880                  | 0.855                  | 0.952                      |
| B: Body-worn (1-g SAR)         | Rear          | 0.518                 | 0.157     | 0.108     | 0.713      | 0.388      | 1.178     | 0.076 | 0.674            | 0.625            | 0.782           | 1.231             | 0.905             | 1.695                  | 0.594     | 1.307                  | 0.981                  | 1.771                      |
|                                | Front         | 0.422                 | 0.157     | 0.108     | 0.027      | 0.388      | 0.047     | 0.059 | 0.579            | 0.529            | 0.686           | 0.449             | 0.810             | 0.469                  | 0.481     | 0.508                  | 0.869                  | 0.528                      |
| C: Hotspot (1-g SAR)           | Rear          | 0.358                 | 0.254     | 0.263     | 0.784      | 0.548      | 1.197     | 0.165 | 0.612            | 0.621            | 0.875           | 1.142             | 0.905             | 1.555                  | 0.523     | 1.307                  | 1.070                  | 1.720                      |
|                                | Front         | 0.324                 | 0.437     | 0.263     | 0.784      | 0.548      | 0.061     | 0.112 | 0.762            | 0.587            | 1.024           | 1.108             | 0.872             | 0.385                  | 0.437     | 1.221                  | 0.984                  | 0.497                      |
|                                | Edge 1        |                       | 0.437     | 0.263     | 0.784      | 0.548      | 1.197     | 0.198 |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 2        | 0.100                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 3        | 1.034                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
| D: Product Specific (10-g SAR) | Edge 4        | 0.145                 | 0.437     | 0.263     | 0.294      | 0.093      | 0.361     | 0.033 | 0.582            | 0.408            | 0.845           | 0.439             | 0.239             | 0.507                  | 0.178     | 0.471                  | 0.271                  | 0.539                      |
|                                | Rear          |                       |           |           | 0.641      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Front         |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 1        |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 2        |                       |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 3        | 1.859                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |

### SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure         | Test Position | Standalone SAR (W/kg) |            |            |           |       | Σ SAR (W/kg) | Calculated distance (mm) | SPLSR (≤ 0.04) | Volume Scan (Yes/ No) | Figure |
|---------------------|---------------|-----------------------|------------|------------|-----------|-------|--------------|--------------------------|----------------|-----------------------|--------|
|                     |               | WWAN                  | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    |              |                          |                |                       |        |
|                     |               | 1                     | 2          | 3          | 4         | 5     |              |                          |                |                       |        |
| Body-worn (1-g SAR) | Rear          | 0.518                 |            |            | 1.178     | 0.076 | 1+4+5        | 1.771                    |                |                       | 22     |
|                     |               | 0.518                 |            |            | 1.178     |       | 1+4          | 1.695                    | 153.3          | 0.01                  |        |
|                     |               | 0.518                 |            |            |           | 0.076 | 1+4          | 0.594                    | 157.0          | 0.00                  |        |
|                     |               |                       |            |            | 1.178     | 0.076 | 4+5          | 1.254                    | 11.8           | 0.12                  |        |
| Hotspot (1-g SAR)   | Rear          | 0.358                 |            |            | 1.197     | 0.165 | 1+4+5        | 1.720                    |                |                       | 23     |
|                     |               | 0.358                 |            |            | 1.197     |       | 1+4          | 1.555                    | 156.5          | 0.01                  |        |
|                     |               | 0.358                 |            |            |           | 0.165 | 1+4          | 0.523                    | 158.2          | 0.00                  |        |
|                     |               |                       |            |            | 1.197     | 0.165 | 4+5          | 1.362                    | 6.9            | 0.23                  |        |

### Note(s):

- Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.
- For UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

## 12.11. Sum of the SAR for LTE Band 66(Band 4) & Wi-Fi & BT

| RF Exposure                    | Test Position | Standalone SAR (W/kg) |           |           |            |            |           |       | Σ SAR (W/kg)     |                  |                 |                   |                   |                        |           |                        |                        |                            |
|--------------------------------|---------------|-----------------------|-----------|-----------|------------|------------|-----------|-------|------------------|------------------|-----------------|-------------------|-------------------|------------------------|-----------|------------------------|------------------------|----------------------------|
|                                |               | WWAN                  | DTS Ant.1 | DTS Ant.2 | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    | WWAN + DTS Ant.1 | WWAN + DTS Ant.2 | WWAN + DTS MIMO | WWAN + UNII Ant.1 | WWAN + UNII Ant.2 | WWAN + UNII MIMO       | WWAN + BT | WWAN + BT + UNII Ant.1 | WWAN + BT + UNII Ant.2 | WWAN + BT + UNII MIMO      |
|                                |               | 1                     | 2         | 3         | 4          | 5          | 6         | 7     | 1+2              | 1+3              | 1+2+3           | 1+4               | 1+5               | A.D: 1+4+5<br>B.C: 1+6 | 1+7       | 1+4+7                  | 1+5+7                  | A.D: 1+4+5+7<br>B.C: 1+6+7 |
| A: Head (1-g SAR)              | All Position  | 0.126                 | 0.370     | 0.014     | 0.097      | 0.073      |           | 0.705 | 0.496            | 0.140            | 0.510           | 0.223             | 0.199             | 0.296                  | 0.831     | 0.928                  | 0.904                  | 1.001                      |
| B: Body-worn (1-g SAR)         | Rear          | 1.032                 | 0.157     | 0.108     | 0.713      | 0.388      | 1.178     | 0.076 | 1.189            | 1.140            | 1.297           | 1.745             | 1.420             | 2.210                  | 1.108     | 1.821                  | 1.496                  | 2.286                      |
|                                | Front         | 0.764                 | 0.157     | 0.108     | 0.027      | 0.388      | 0.047     | 0.059 | 0.921            | 0.872            | 1.029           | 0.791             | 1.152             | 0.811                  | 0.823     | 0.850                  | 1.211                  | 0.870                      |
| C: Hotspot (1-g SAR)           | Rear          | 0.795                 | 0.254     | 0.263     | 0.784      | 0.548      | 1.197     | 0.165 | 1.050            | 1.058            | 1.312           | 1.579             | 1.343             | 1.992                  | 0.960     | 1.744                  | 1.508                  | 2.157                      |
|                                | Front         | 0.568                 | 0.437     | 0.263     | 0.784      | 0.548      | 0.061     | 0.112 | 1.005            | 0.830            | 1.268           | 1.352             | 1.115             | 0.628                  | 0.680     | 1.464                  | 1.228                  | 0.741                      |
|                                | Edge 1        | 0.160                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 2        | 0.160                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 3        | 1.291                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 4        | 0.096                 | 0.437     | 0.263     | 0.294      | 0.093      | 0.361     | 0.033 | 0.533            | 0.358            | 0.796           | 0.389             | 0.189             | 0.457                  | 0.128     | 0.422                  | 0.222                  | 0.490                      |
| D: Product Specific (10-g SAR) | Rear          | 1.775                 |           |           | 0.641      | 0.715      |           |       |                  |                  |                 | 2.416             | 2.490             | 3.131                  |           |                        |                        |                            |
|                                | Front         | 1.864                 |           |           | 0.945      | 0.715      |           |       |                  |                  |                 | 2.809             | 2.579             | 3.524                  |           |                        |                        |                            |
|                                | Edge 1        |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 2        |                       |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 3        | 2.523                 |           |           |            |            |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |
|                                | Edge 4        |                       |           |           | 0.945      | 0.715      |           |       |                  |                  |                 |                   |                   |                        |           |                        |                        |                            |

### SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure         | Test Position | Standalone SAR (W/kg) |            |            |           |       | Σ SAR (W/kg) | Calculated distance (mm) | SPLSR (≤ 0.04) | Volume Scan (Yes/ No) | Figure |
|---------------------|---------------|-----------------------|------------|------------|-----------|-------|--------------|--------------------------|----------------|-----------------------|--------|
|                     |               | WWAN                  | UNII Ant.1 | UNII Ant.2 | UNII MIMO | BT    |              |                          |                |                       |        |
|                     |               | 1                     | 2          | 3          | 4         | 5     |              |                          |                |                       |        |
| Body-worn (1-g SAR) | Rear          | 1.032                 | 0.713      |            |           | 0.076 | 1+2+5        | 1.821                    |                |                       | 24     |
|                     |               | 1.032                 | 0.713      |            |           |       | 1+2          | 1.745                    | 155.7          | No                    |        |
|                     |               | 1.032                 |            |            |           | 0.076 | 1+5          | 1.108                    | 159.5          | No                    |        |
|                     |               |                       | 0.713      |            |           | 0.076 | 2+5          | 0.789                    | 13.1           | Yes                   |        |
| Body-worn (1-g SAR) | Rear          | 1.032                 |            |            | 1.178     | 0.076 | 1+4+5        | 2.286                    |                |                       | 25     |
|                     |               | 1.032                 |            |            | 1.178     |       | 1+4          | 2.210                    | 156.9          | No                    |        |
|                     |               | 1.032                 |            |            | 0.076     |       | 1+4          | 1.108                    | 159.5          | No                    |        |
|                     |               |                       |            |            | 1.178     | 0.076 | 4+5          | 1.254                    | 11.8           | Yes                   |        |
| Hotspot (1-g SAR)   | Rear          | 0.795                 | 0.784      |            |           | 0.165 | 1+2+5        | 1.744                    |                |                       | 26     |
|                     |               | 0.795                 | 0.784      |            |           |       | 1+2          | 1.579                    | 160.1          | No                    |        |
|                     |               | 0.795                 |            |            |           | 0.165 | 1+5          | 0.960                    | 162.3          | No                    |        |
|                     |               |                       | 0.784      |            |           | 0.165 | 2+5          | 0.949                    | 13.4           | Yes                   |        |
| Hotspot (1-g SAR)   | Rear          | 0.795                 |            |            | 1.197     | 0.165 | 1+4+5        | 2.157                    |                |                       | 27     |
|                     |               | 0.795                 |            |            | 1.197     |       | 1+4          | 1.992                    | 161.1          | No                    |        |
|                     |               | 0.795                 |            |            | 0.165     |       | 1+4          | 0.960                    | 162.3          | No                    |        |
|                     |               |                       |            |            | 1.197     | 0.165 | 4+5          | 1.362                    | 6.9            | Yes                   |        |

### Note(s):

- Blue values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.
- For UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

## 12.12. Sum of the SAR for WWAN & Wi-Fi (RSDB)

| RF Exposure            | Test Position | Standalone SAR (W/kg) |           |           |          |            |            |           | Σ SAR (W/kg)                |                             |                            |                             |                             |                            |                            |                            |                            |
|------------------------|---------------|-----------------------|-----------|-----------|----------|------------|------------|-----------|-----------------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|                        |               | WWAN                  | DTS Ant.1 | DTS Ant.2 | DTS MIMO | UNII Ant.1 | UNII Ant.2 | UNII MIMO | WWAN +DTS Ant.1 +UNII Ant.1 | WWAN +DTS Ant.1 +UNII Ant.2 | WWAN +DTS Ant.1 +UNII MIMO | WWAN +DTS Ant.2 +UNII Ant.1 | WWAN +DTS Ant.2 +UNII Ant.2 | WWAN +DTS Ant.2 +UNII MIMO | WWAN +DTS MIMO +UNII Ant.1 | WWAN +DTS MIMO +UNII Ant.2 | WWAN +DTS MIMO +UNII MIMO  |
|                        |               | 1                     | 2         | 3         | 4        | 5          | 6          | 7         | 1+2+5                       | 1+2+6                       | A: 1+2+5+6<br>B,C: 1+2+7   | 1+3+5                       | 1+3+6                       | A: 1+3+5+6<br>B,C: 1+3+7   | A: 1+2+3+5<br>B,C: 1+4+5   | A: 1+2+3+6<br>B,C: 1+4+6   | A: 1+2+3+5+6<br>B,C: 1+4+7 |
| A: Head (1-g SAR)      | All Position  | 0.283                 | 0.370     | 0.014     |          | 0.097      | 0.073      |           | 0.750                       | 0.726                       | 0.823                      | 0.394                       | 0.370                       | 0.467                      | 0.764                      | 0.740                      | 0.837                      |
| B: Body-worn (1-g SAR) | All Position  | 1.032                 | 0.040     | 0.041     | 0.092    | 0.210      | 0.180      | 0.345     | 1.282                       | 1.252                       | 1.417                      | 1.283                       | 1.253                       | 1.418                      | 1.334                      | 1.304                      | 1.469                      |
| C: Hotspot (1-g SAR)   | Rear          | 0.908                 | 0.091     | 0.112     | 0.169    | 0.290      | 0.253      | 0.516     | 1.289                       | 1.252                       | 1.515                      | 1.310                       | 1.273                       | 1.536                      | 1.367                      | 1.330                      | 1.593                      |
|                        | Front         | 0.589                 | 0.203     | 0.112     | 0.203    | 0.290      | 0.253      | 0.516     | 1.082                       | 1.045                       | 1.308                      | 0.991                       | 0.954                       | 1.217                      | 1.082                      | 1.045                      | 1.308                      |
|                        | Edge 1        |                       | 0.203     | 0.014     | 0.203    | 0.290      | 0.253      | 0.516     |                             |                             |                            |                             |                             |                            |                            |                            |                            |
|                        | Edge 2        | 0.170                 |           |           |          |            |            |           |                             |                             |                            |                             |                             |                            |                            |                            |                            |
|                        | Edge 3        | 1.291                 |           |           |          |            |            |           |                             |                             |                            |                             |                             |                            |                            |                            |                            |
|                        | Edge 4        | 0.334                 | 0.203     | 0.112     | 0.203    | 0.290      | 0.253      | 0.111     | 0.827                       | 0.790                       | 0.648                      | 0.736                       | 0.699                       | 0.557                      | 0.827                      | 0.790                      | 0.648                      |

### Note(s):

Blue values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.

## 12.13. SPLSR Hotspot Combination

SPLSR Hotspot Combination procedure has been applied to evaluate the simultaneous transmission SAR analysis.

### Volume Scan Results

| RF Exposure | Configuration   | Test Position | Band       | Original Measured SAR (W/kg) |       | Volume Scan Result | Plot No. | Multi-Band Combined factor | Multi-Band Combined Result | Plot No. |
|-------------|-----------------|---------------|------------|------------------------------|-------|--------------------|----------|----------------------------|----------------------------|----------|
| Body-worn   | UNII Ant.1 + BT | Rear 15mm     | UNII Ant.1 | 0.583                        |       | 0.476              |          | 1.223                      | 0.669                      | 7        |
|             |                 |               | BT         | 0.048                        |       | 0.060              |          | 1.570                      |                            |          |
|             | UNII MIMO + BT  | Rear 15mm     | UNII MIMO  | 0.957                        | 0.583 | 0.476              | 1        | 1.223                      | 0.852                      | 8-9      |
|             |                 |               |            |                              | 0.293 | 0.181              | 2        | 1.323                      |                            |          |
|             |                 |               | BT         | 0.048                        |       | 0.060              | 3        | 1.570                      |                            |          |
| Hotspot     | UNII Ant.1 + BT | Rear 10mm     | UNII Ant.1 | 0.622                        |       | 0.445              |          | 1.260                      | 0.710                      | 10       |
|             |                 |               | BT         | 0.105                        |       | 0.128              |          | 1.570                      |                            |          |
|             | UNII Ant.2 + BT | Rear 10mm     | UNII Ant.2 | 0.414                        |       | 0.313              |          | 1.323                      | 0.554                      | 11       |
|             |                 |               | BT         | 0.105                        |       | 0.128              |          | 1.570                      |                            |          |
|             | UNII MIMO + BT  | Rear 10mm     | UNII MIMO  | 0.953                        | 0.622 | 0.445              | 4        | 1.260                      | 1.080                      | 12-13    |
|             |                 |               |            |                              | 0.414 | 0.313              | 5        | 1.323                      |                            |          |
|             |                 |               | BT         | 0.105                        |       | 0.128              | 6        | 1.570                      |                            |          |

#### Note(s):

- Multi-band Combined factor is the compensation value of power and duty.
- For UNII MIMO mode, Volume scan proceeded to UNII SISO Ant.1 and UNII SISO Ant.2 respectively. Thereafter, Multi-Band Combined procedures was performed.  
Volume scan results for UNII MIMO was performed as combined result of UNII Ant.1 and UNII Ant.2.
- For Volume Scan plot number in this section, please refer to the Appendix G.

**SPLSR Calculation Results**

| RF Exposure | Test Position | Band                       | Standalone SAR (W/kg) | $\Sigma$ SAR (W/kg) | Calculated distance (mm) | SPLSR ( $\leq 0.04$ ) |
|-------------|---------------|----------------------------|-----------------------|---------------------|--------------------------|-----------------------|
| Body-w orn  | Rear          | GSM 850                    | 0.445                 | 1.297               | 153.8                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 0.852                 |                     |                          |                       |
| Hotspot     | Rear          | GSM 850                    | 0.908                 | 1.618               | 161.8                    | 0.01                  |
|             |               | UNII Ant.1+BT              | 0.710                 |                     |                          |                       |
| Hotspot     | Rear          | GSM 850                    | 0.908                 | 1.462               | 160.6                    | 0.01                  |
|             |               | UNII Ant.2+BT              | 0.554                 |                     |                          |                       |
| Hotspot     | Rear          | GSM 850                    | 0.908                 | 1.988               | 161.8                    | 0.02                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 1.080                 |                     |                          |                       |
| Body-w orn  | Rear          | GSM 1900                   | 0.575                 | 1.427               | 157.6                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 0.852                 |                     |                          |                       |
| Hotspot     | Rear          | GSM 1900                   | 0.480                 | 1.560               | 155.2                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 1.080                 |                     |                          |                       |
| Body-w orn  | Rear          | WCDMA Band II              | 0.697                 | 1.549               | 162.0                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 0.852                 |                     |                          |                       |
| Hotspot     | Rear          | WCDMA Band II              | 0.510                 | 1.590               | 163.6                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 1.080                 |                     |                          |                       |
| Body-w orn  | Rear          | WCDMA Band IV              | 0.976                 | 1.645               | 158.1                    | 0.01                  |
|             |               | UNII Ant.1+BT              | 0.669                 |                     |                          |                       |
| Body-w orn  | Rear          | WCDMA Band IV              | 0.976                 | 1.828               | 158.1                    | 0.02                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 0.852                 |                     |                          |                       |
| Hotspot     | Rear          | WCDMA Band IV              | 0.740                 | 1.450               | 156.6                    | 0.01                  |
|             |               | UNII Ant.1+BT              | 0.710                 |                     |                          |                       |
| Hotspot     | Rear          | WCDMA Band IV              | 0.740                 | 1.820               | 156.6                    | 0.02                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 1.080                 |                     |                          |                       |
| Body-w orn  | Rear          | WCDMA Band V               | 0.383                 | 1.235               | 154.1                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 0.852                 |                     |                          |                       |
| Hotspot     | Rear          | WCDMA Band V               | 0.734                 | 1.444               | 162.7                    | 0.01                  |
|             |               | UNII Ant.1+BT              | 0.710                 |                     |                          |                       |
| Hotspot     | Rear          | WCDMA Band V               | 0.734                 | 1.814               | 162.7                    | 0.02                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 1.080                 |                     |                          |                       |
| Hotspot     | Rear          | LTE Band 12                | 0.342                 | 1.422               | 162.7                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 1.080                 |                     |                          |                       |
| Body-w orn  | Rear          | LTE Band 13                | 0.380                 | 1.232               | 124.7                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 0.852                 |                     |                          |                       |
| Hotspot     | Rear          | LTE Band 13                | 0.569                 | 1.649               | 161.0                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 1.080                 |                     |                          |                       |
| Body-w orn  | Rear          | LTE Band 25                | 0.757                 | 1.609               | 158.6                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 0.852                 |                     |                          |                       |
| Hotspot     | Rear          | LTE Band 25                | 0.589                 | 1.669               | 159.3                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 1.080                 |                     |                          |                       |
| Hotspot     | Rear          | LTE Band 26                | 0.647                 | 1.727               | 158.9                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 1.080                 |                     |                          |                       |
| Body-w orn  | Rear          | LTE Band 41                | 0.518                 | 1.370               | 152.1                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 0.852                 |                     |                          |                       |
| Hotspot     | Rear          | LTE Band 41                | 0.358                 | 1.438               | 153.4                    | 0.01                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 1.080                 |                     |                          |                       |
| Body-w orn  | Rear          | LTE Band 66                | 1.032                 | 1.701               | 155.1                    | 0.01                  |
|             |               | UNII Ant.1+BT              | 0.669                 |                     |                          |                       |
| Body-w orn  | Rear          | LTE Band 66                | 1.032                 | 1.884               | 155.1                    | 0.02                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 0.852                 |                     |                          |                       |
| Hotspot     | Rear          | LTE Band 66                | 0.795                 | 1.505               | 158.0                    | 0.01                  |
|             |               | UNII Ant.1+BT              | 0.710                 |                     |                          |                       |
| Hotspot     | Rear          | LTE Band 66                | 0.795                 | 1.875               | 158.0                    | 0.02                  |
|             |               | UNIII Ant.1+UNIII Ant.2+BT | 1.080                 |                     |                          |                       |

**Note(s):**

SPLSR procedure was applied for the spatially separated main antenna and Multi-band Combined results.

**Conclusion:**

Simultaneous Transmission SAR analysis results is satisfied the FCC Limit requirement according to follow procedures with "Sum of SAR" or "SPLSR" or "SPLSR Hotspot combination".

Figure (1)

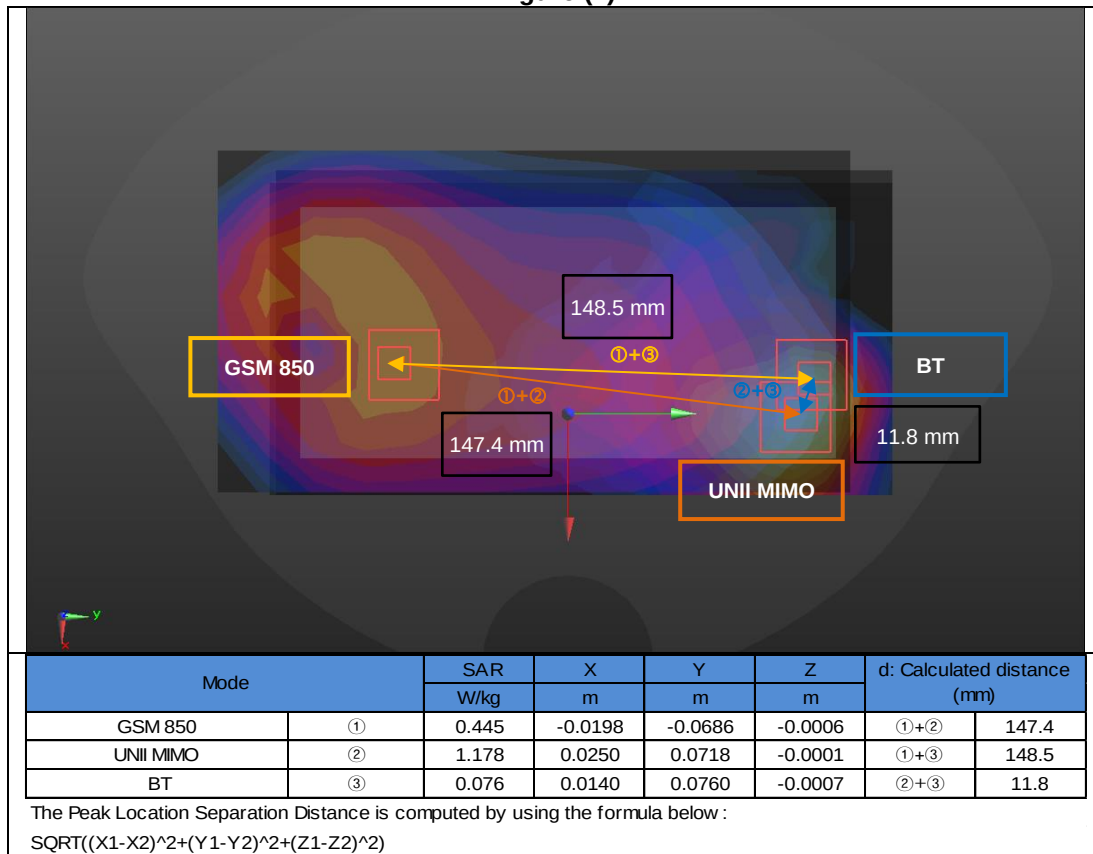


Figure (2)

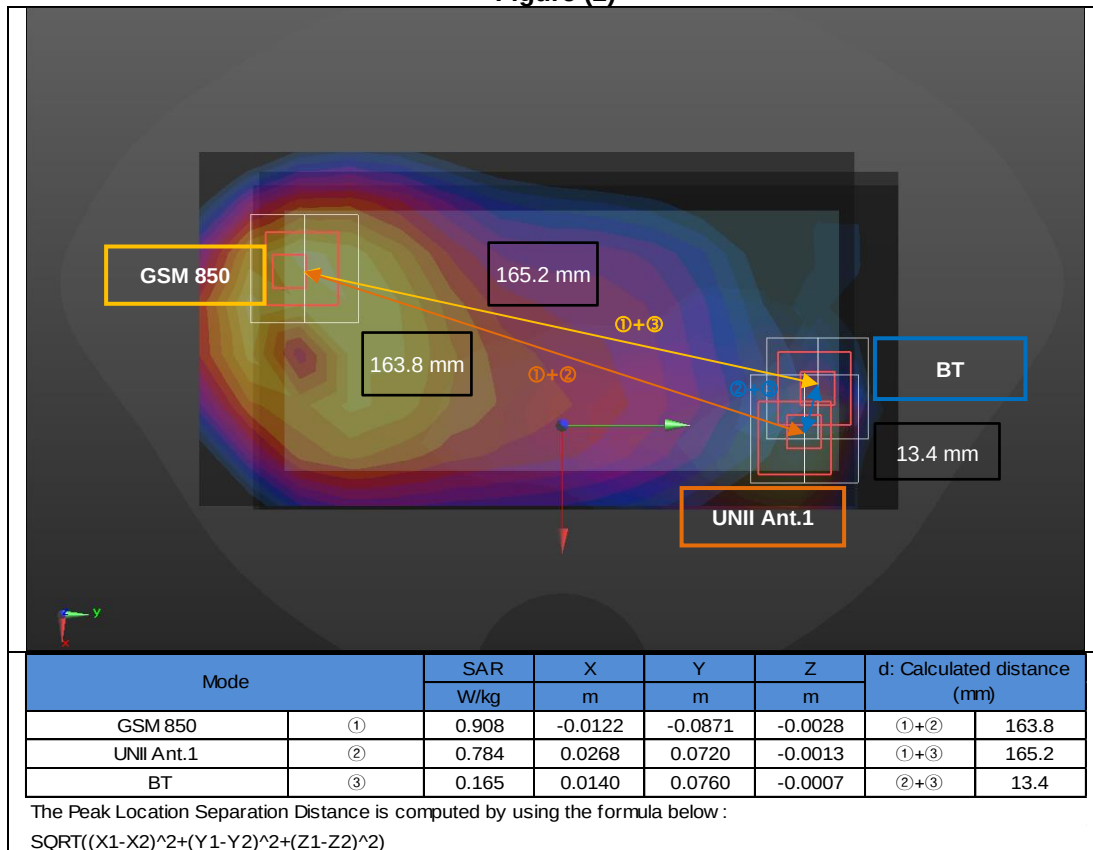


Figure (3)

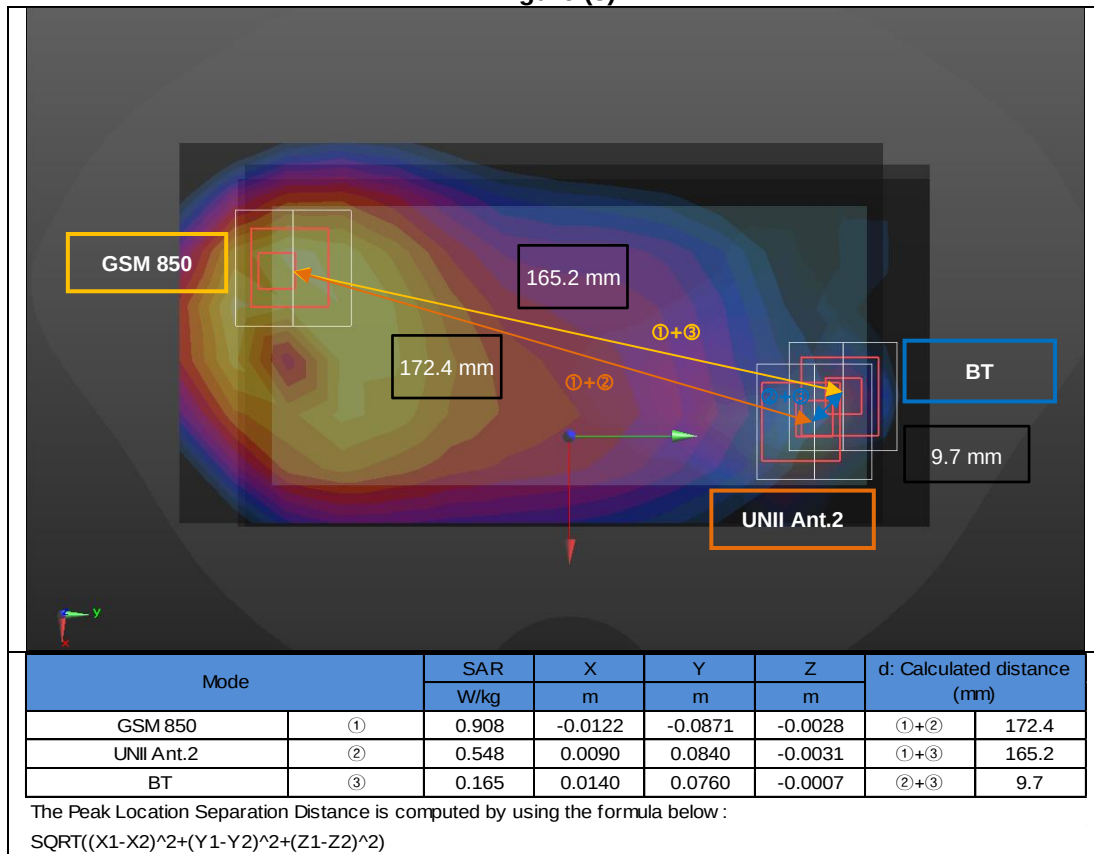


Figure (4)

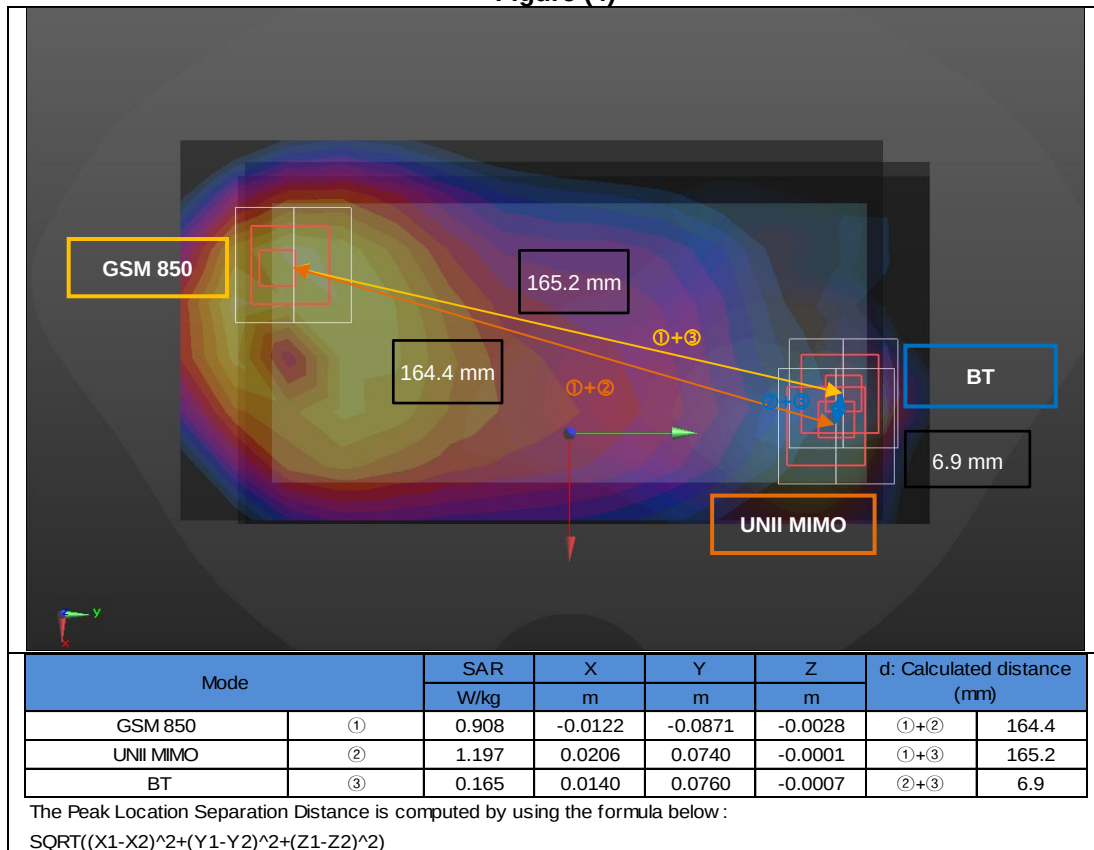


Figure (5)

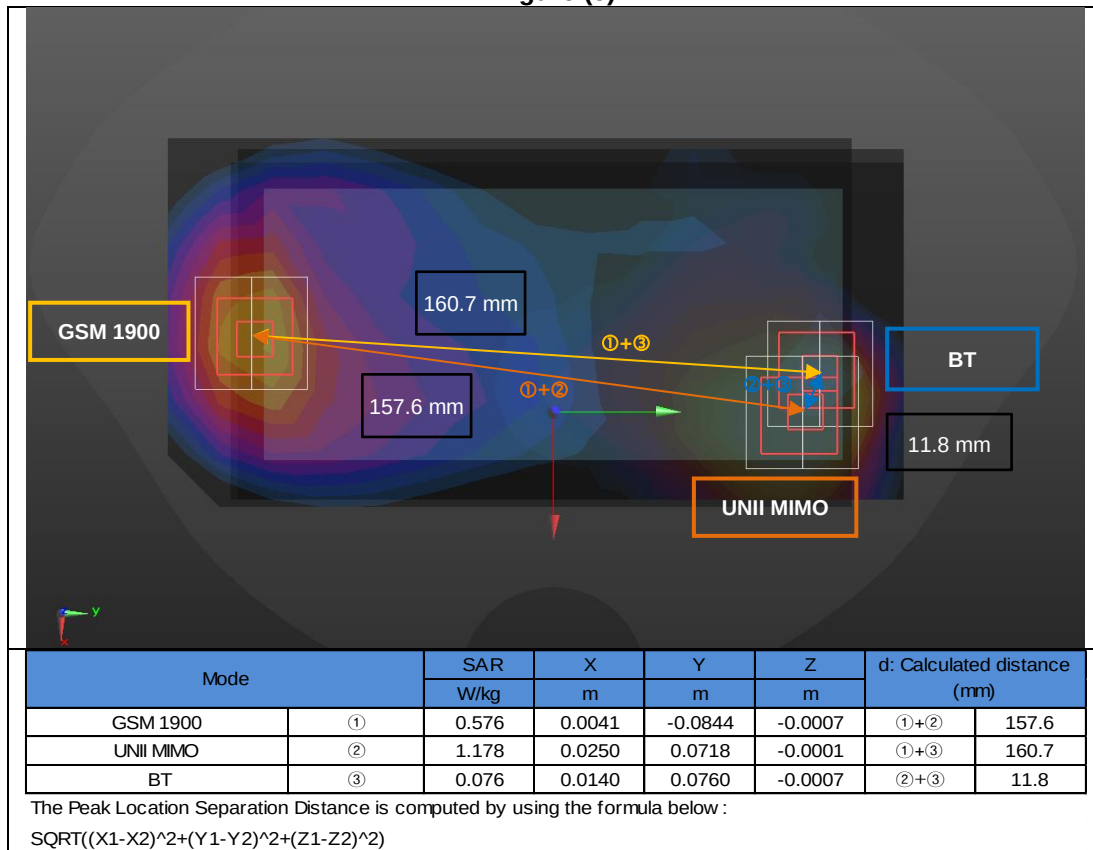


Figure (6)

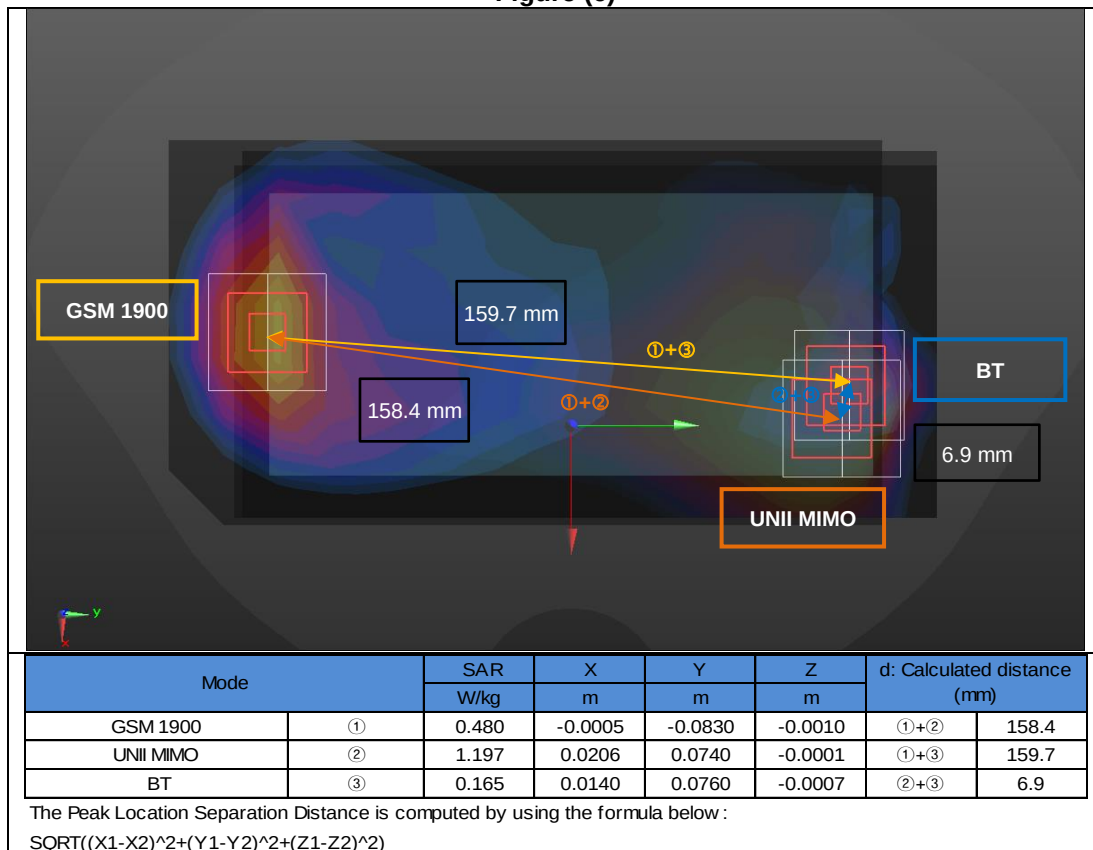


Figure (7)

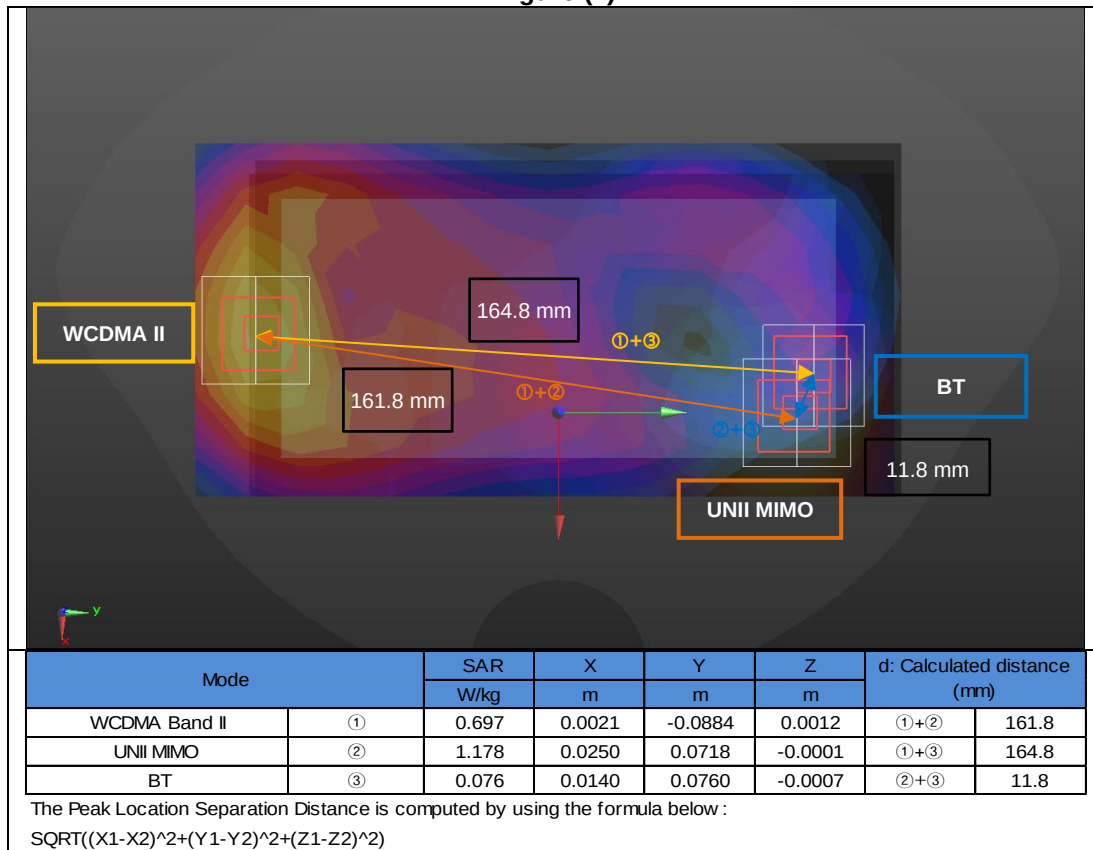


Figure (8)

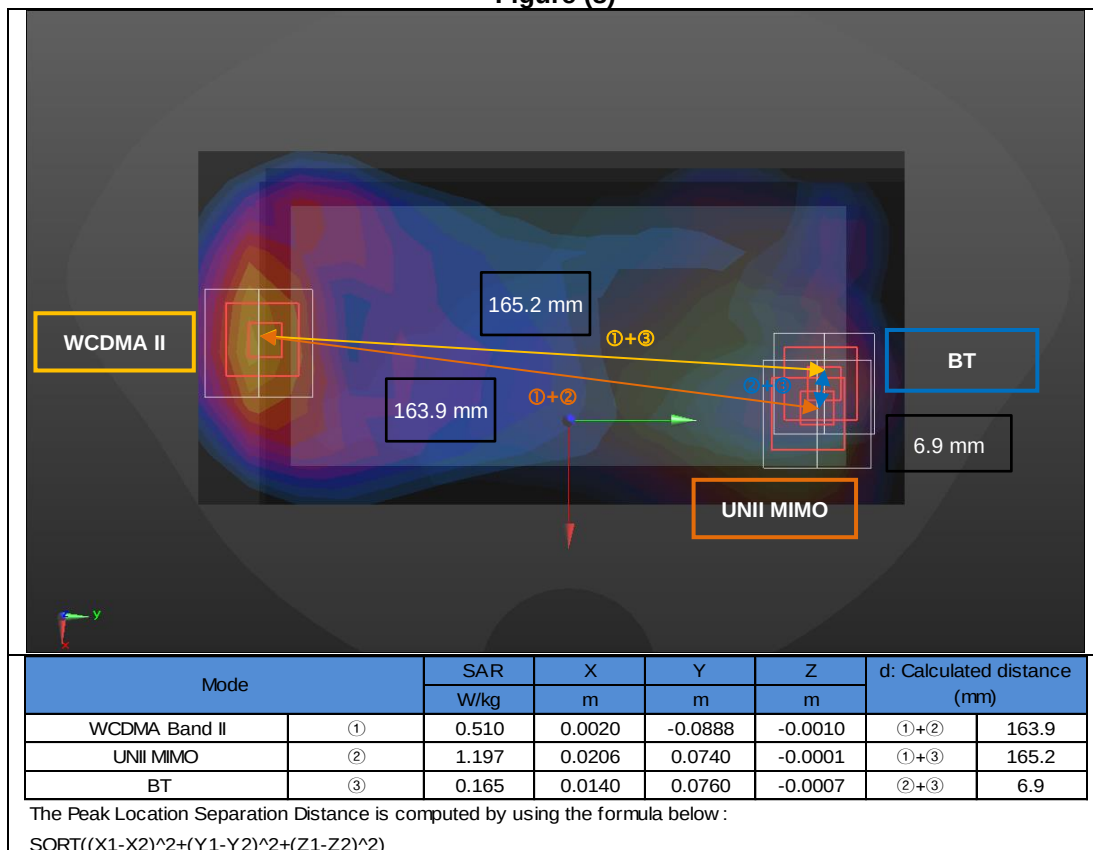


Figure (9)

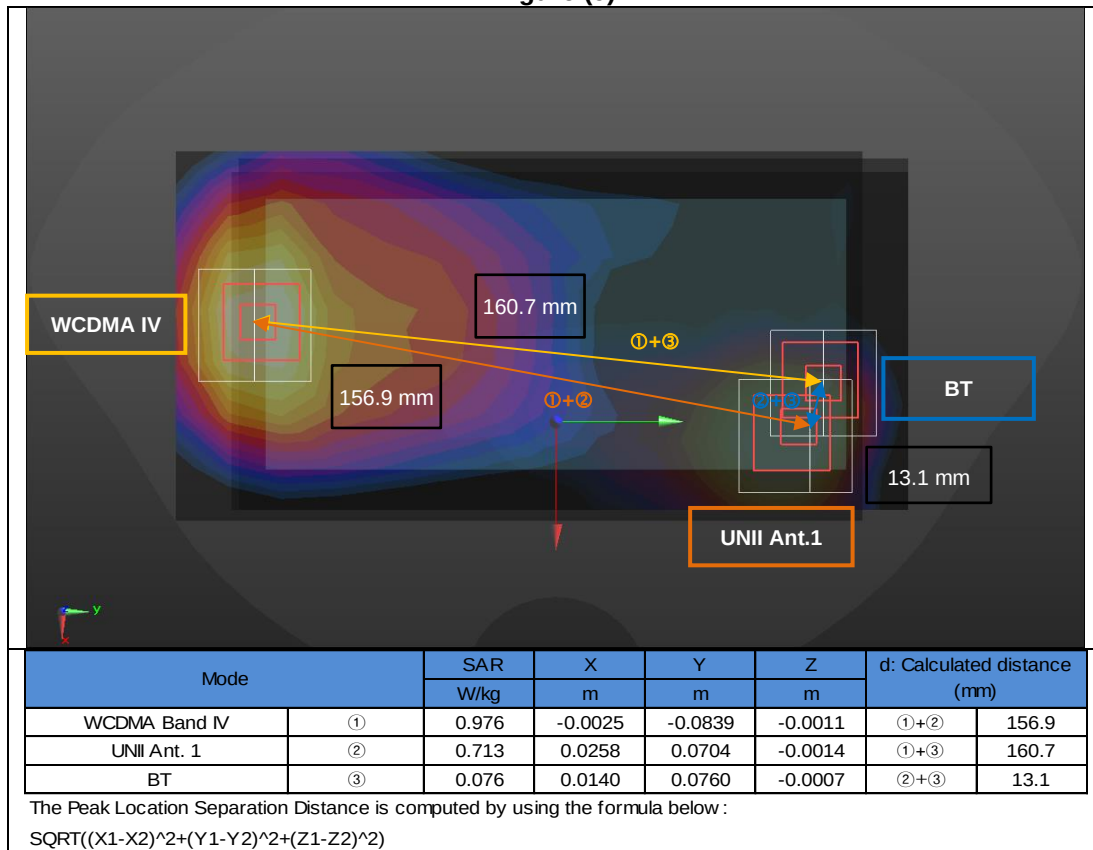


Figure (10)

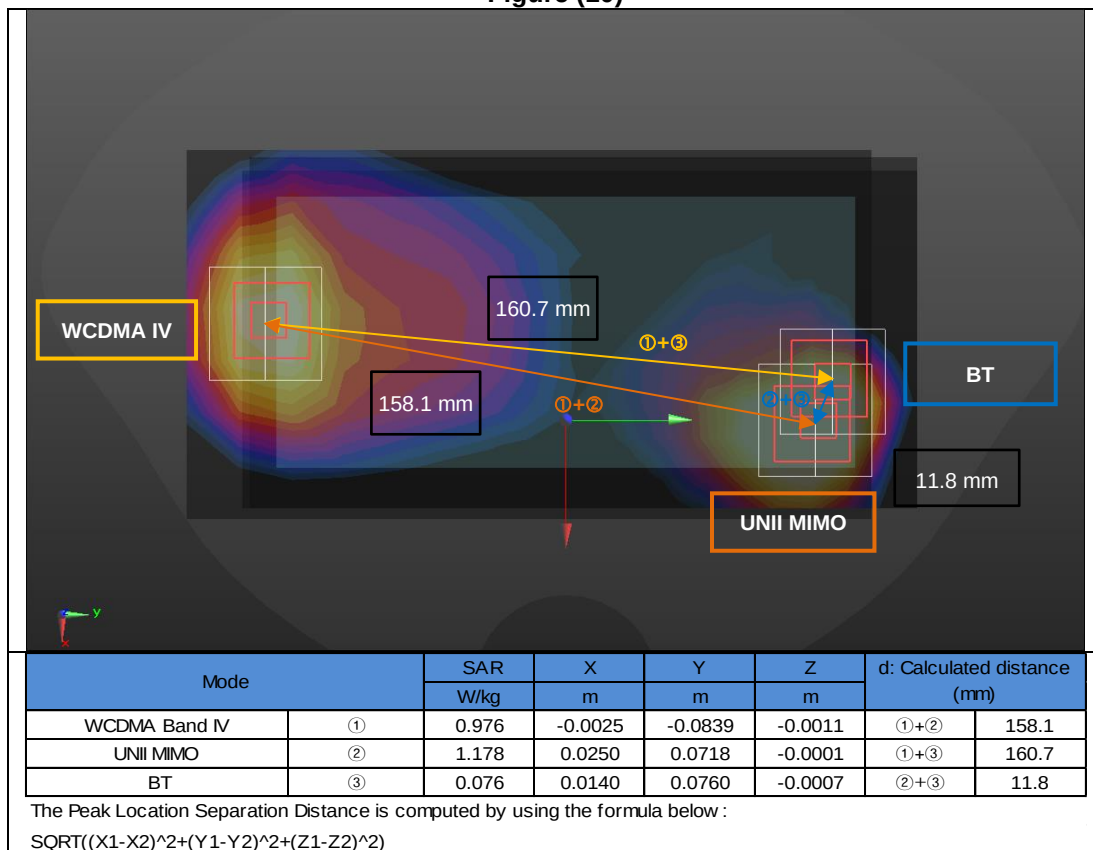


Figure (11)

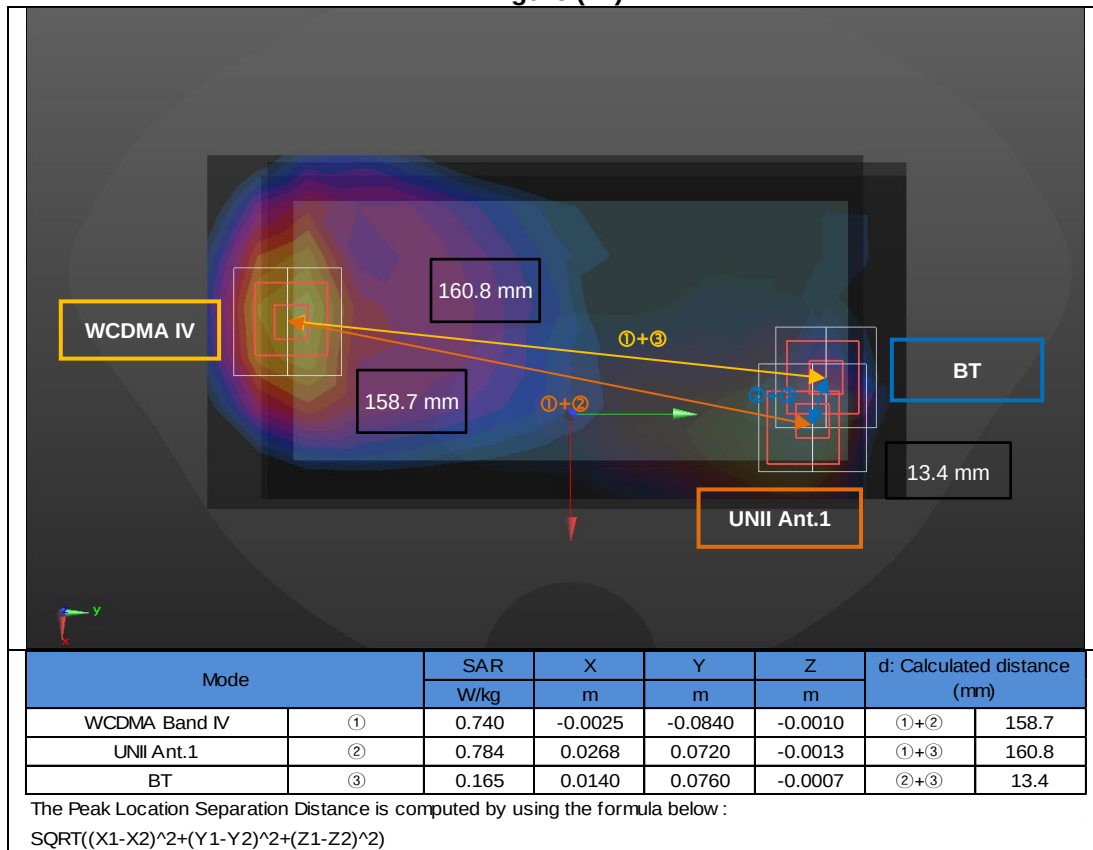


Figure (12)

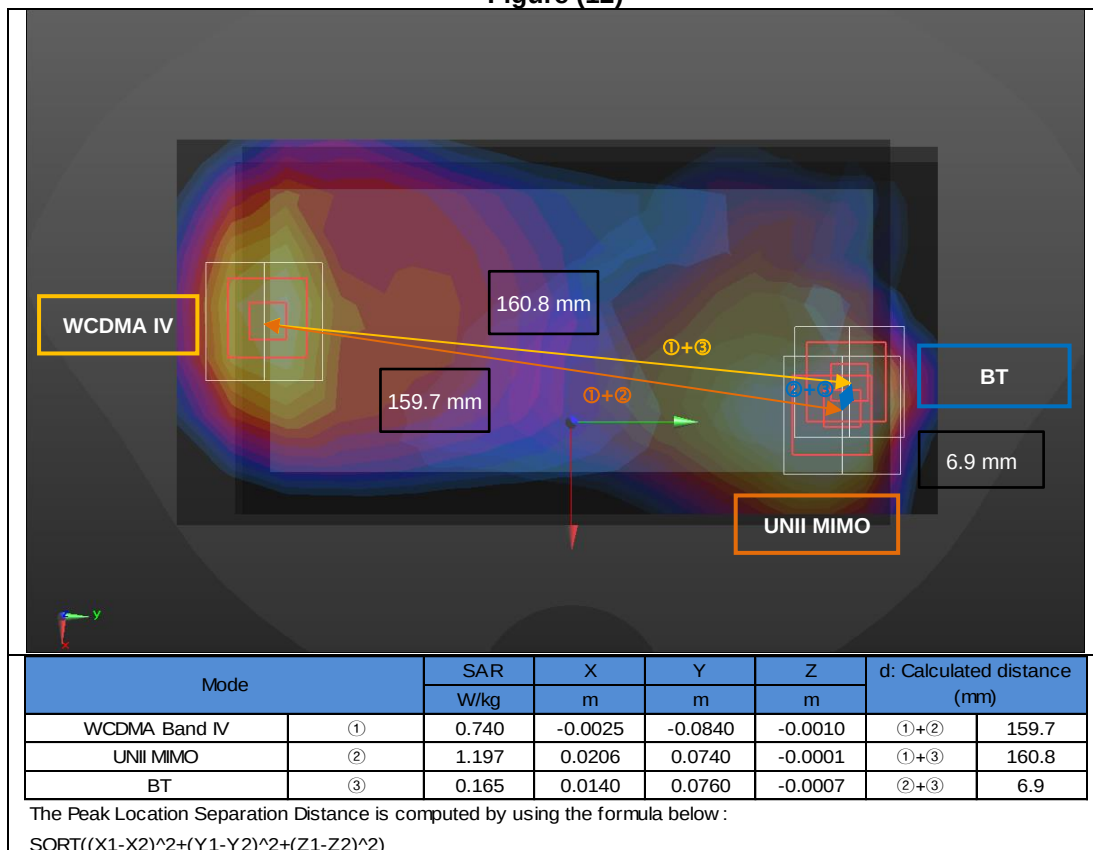


Figure (13)

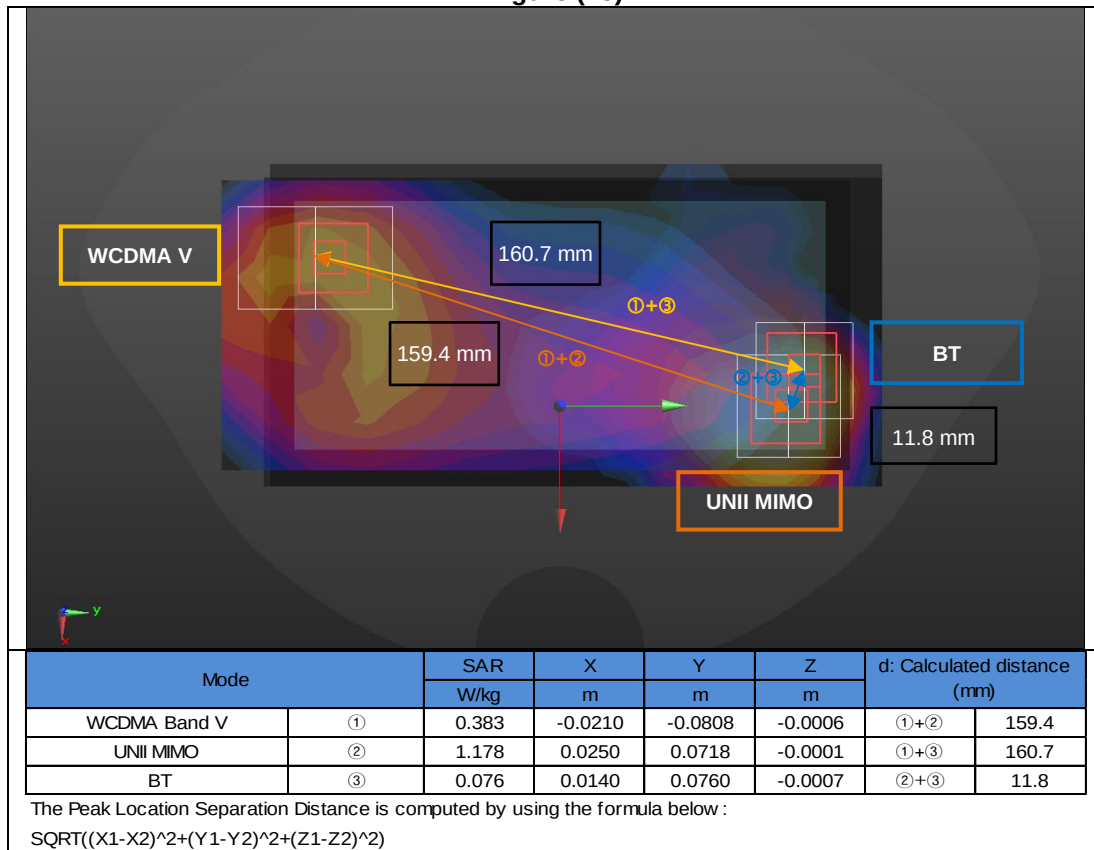


Figure (14)

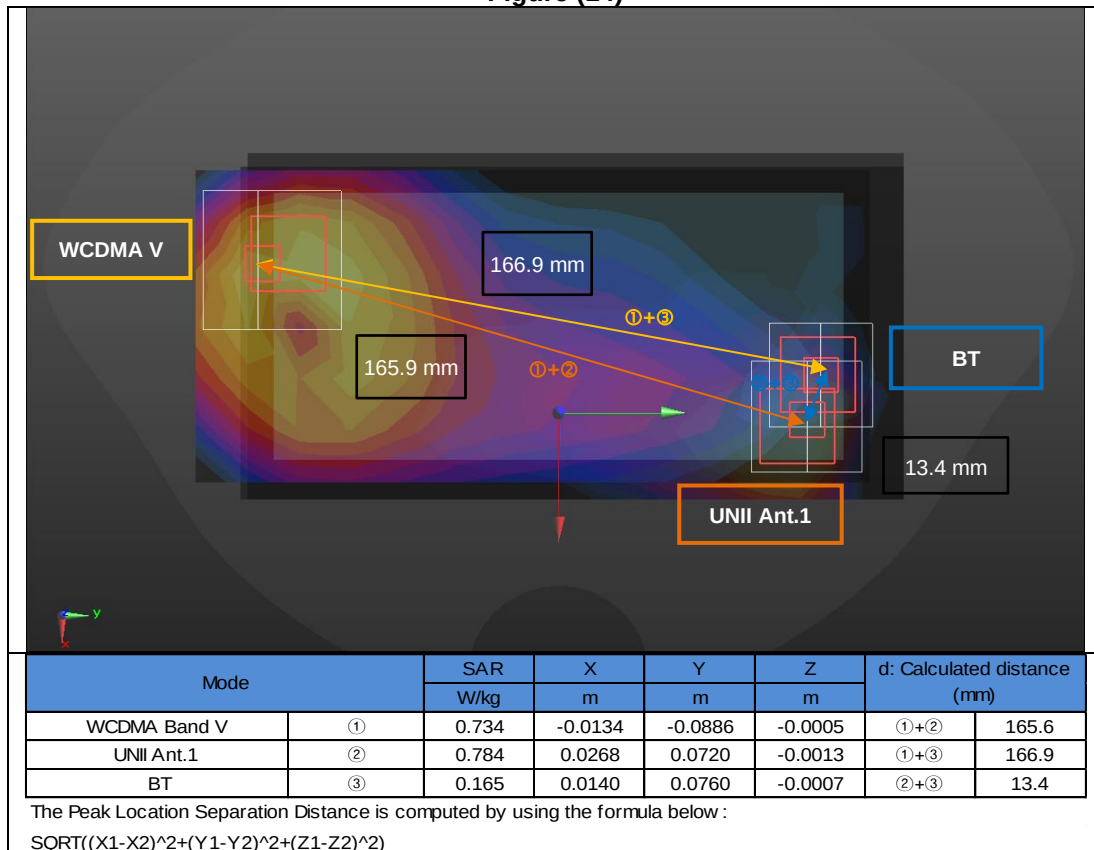


Figure (15)

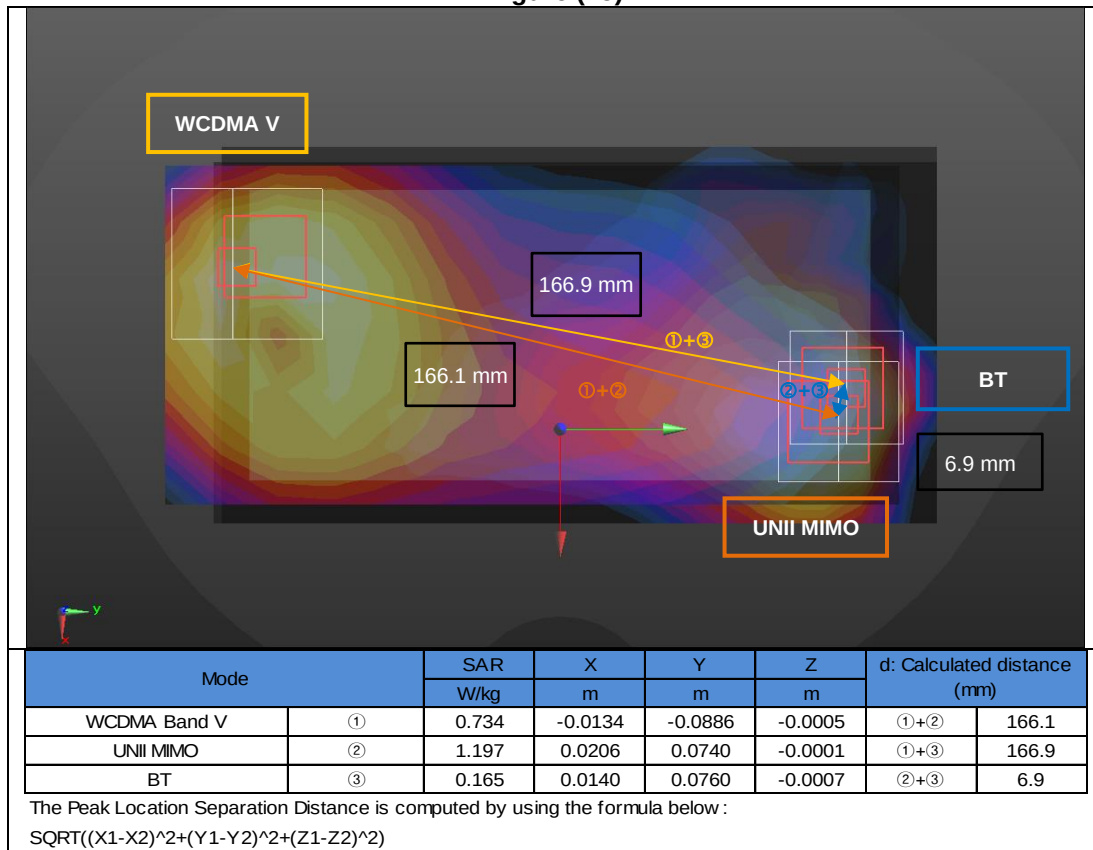


Figure (16)

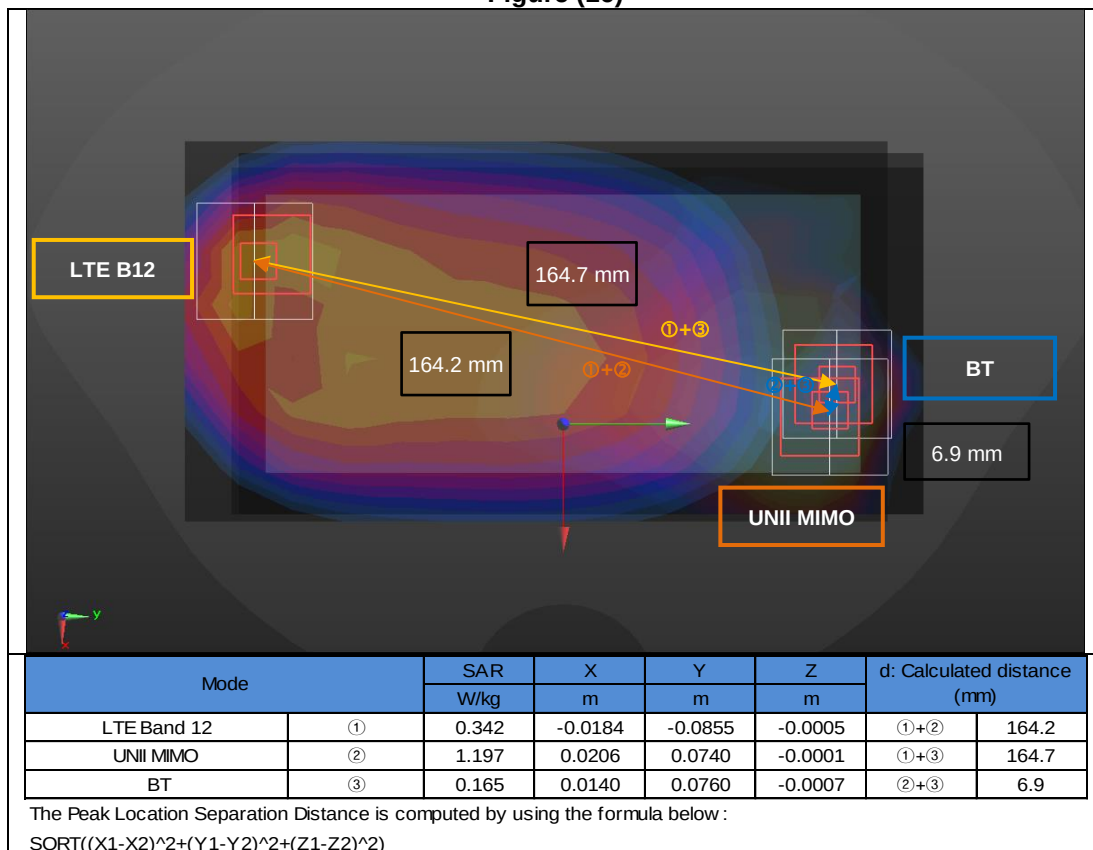


Figure (17)

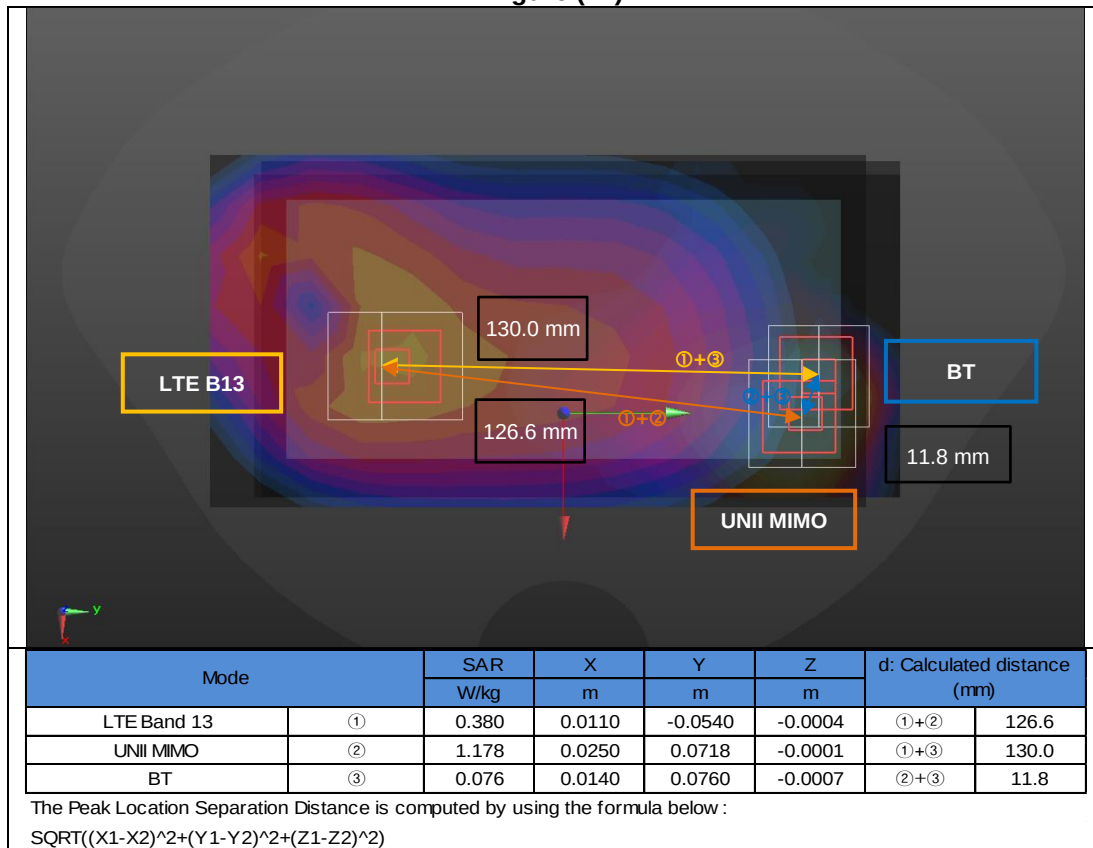


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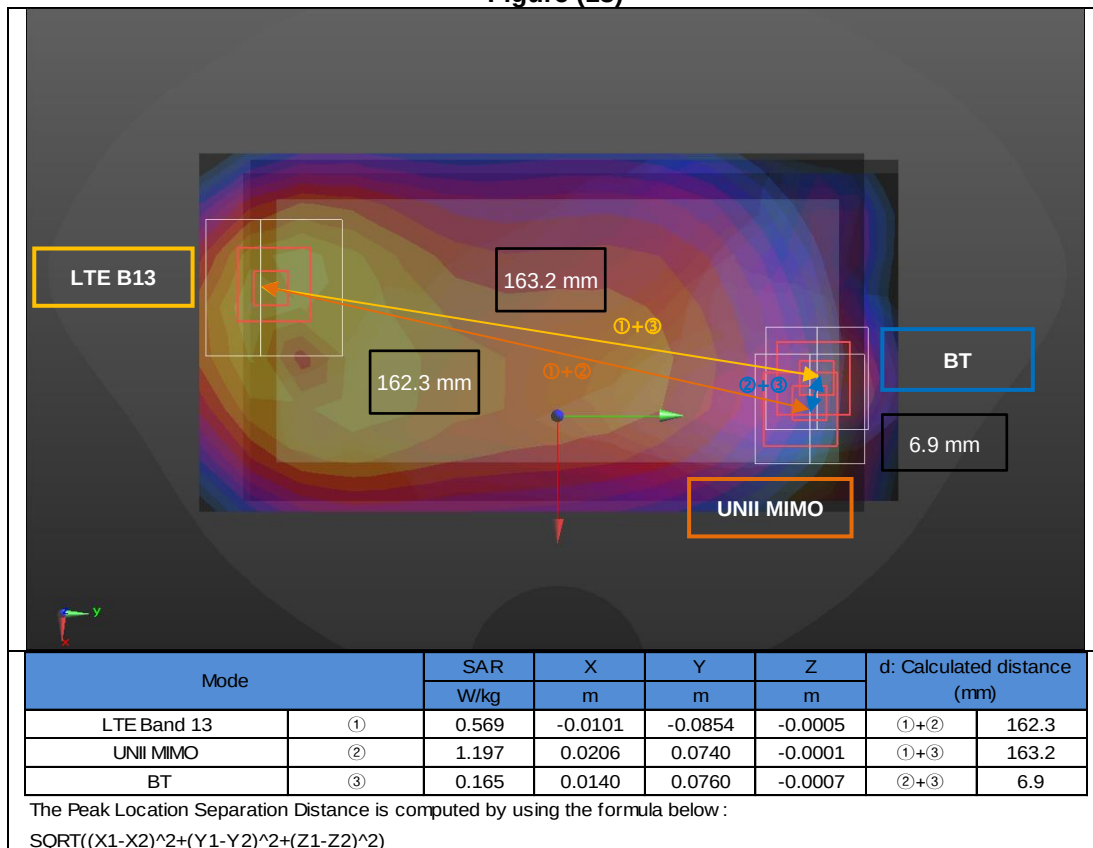


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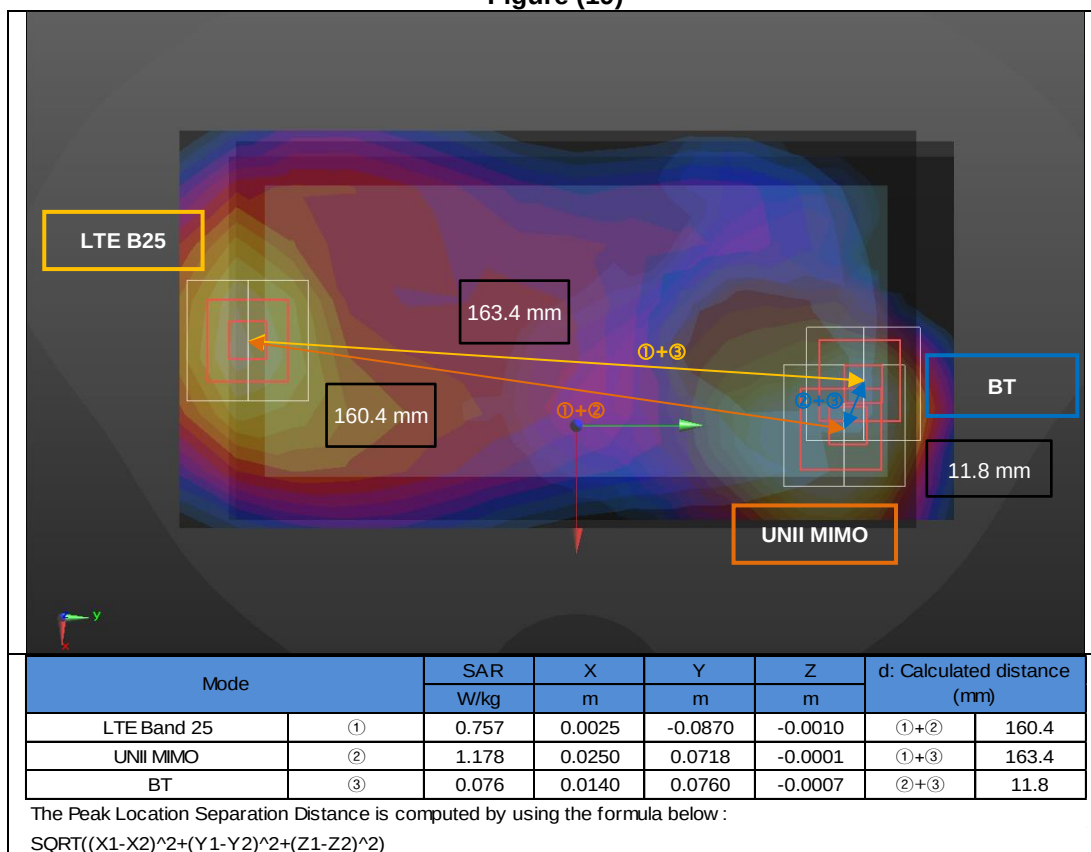


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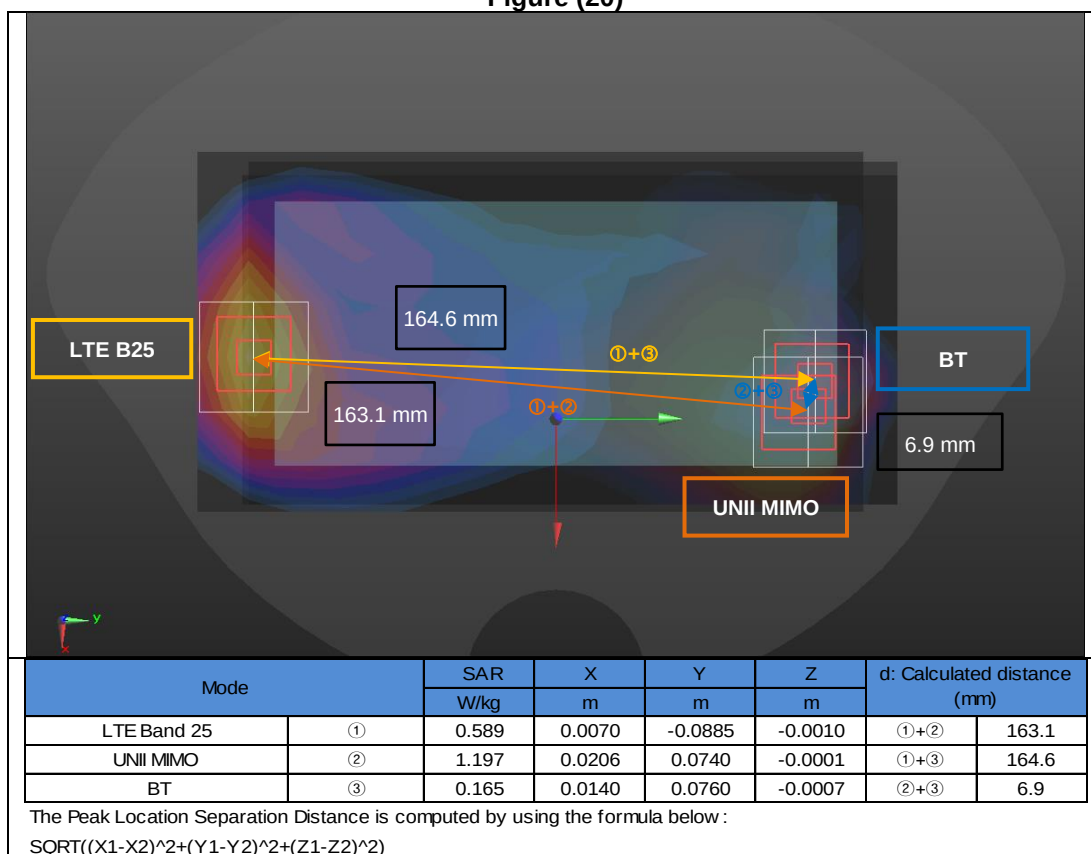


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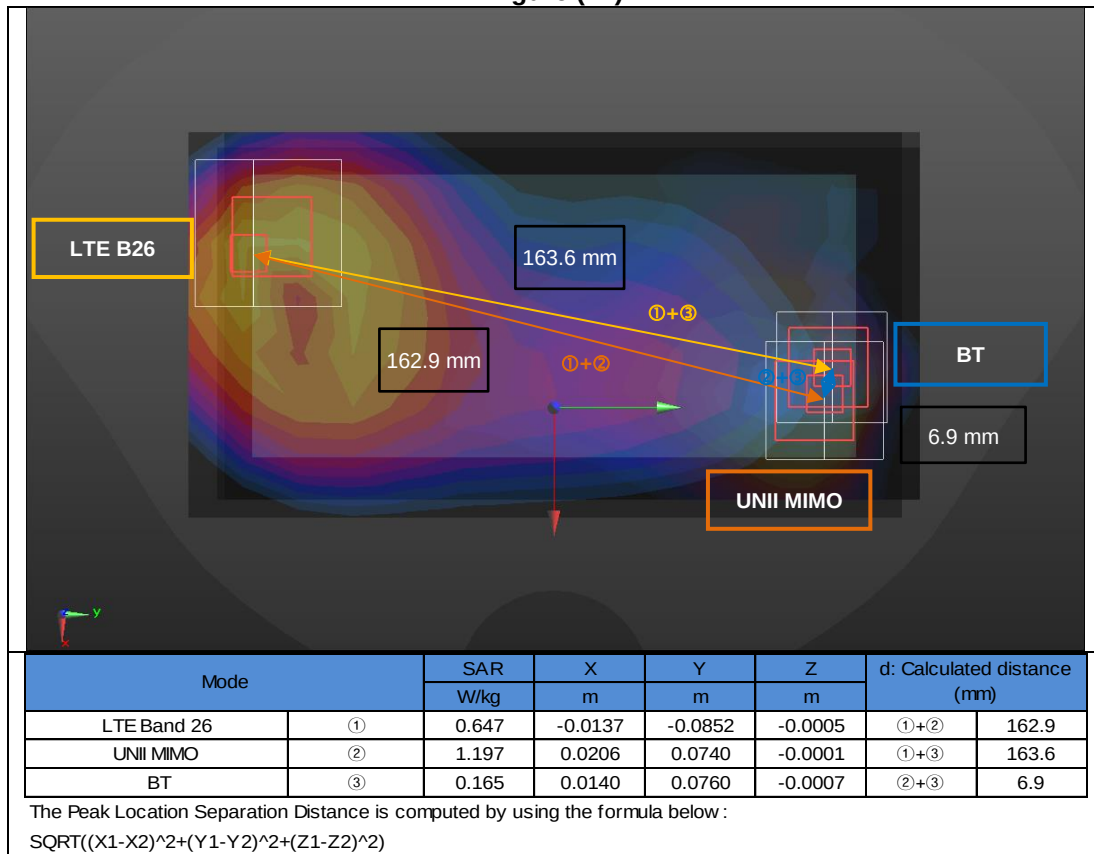


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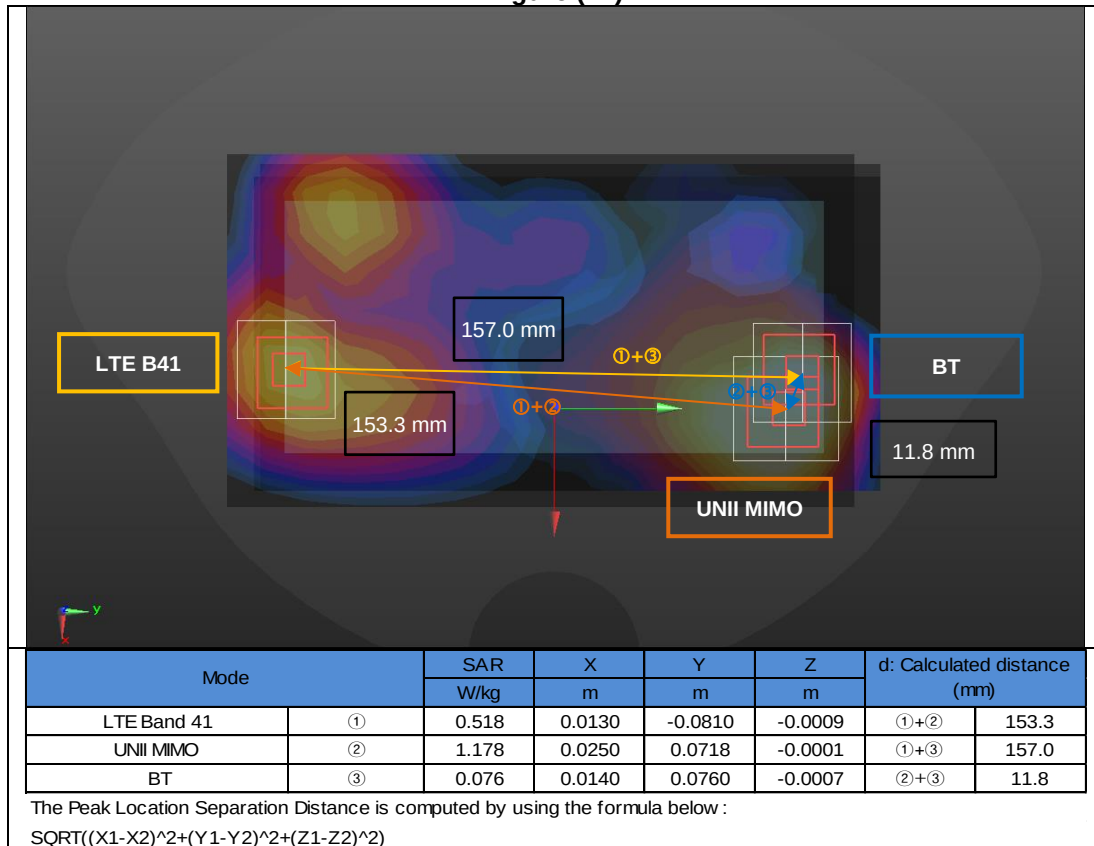


Figure (23)

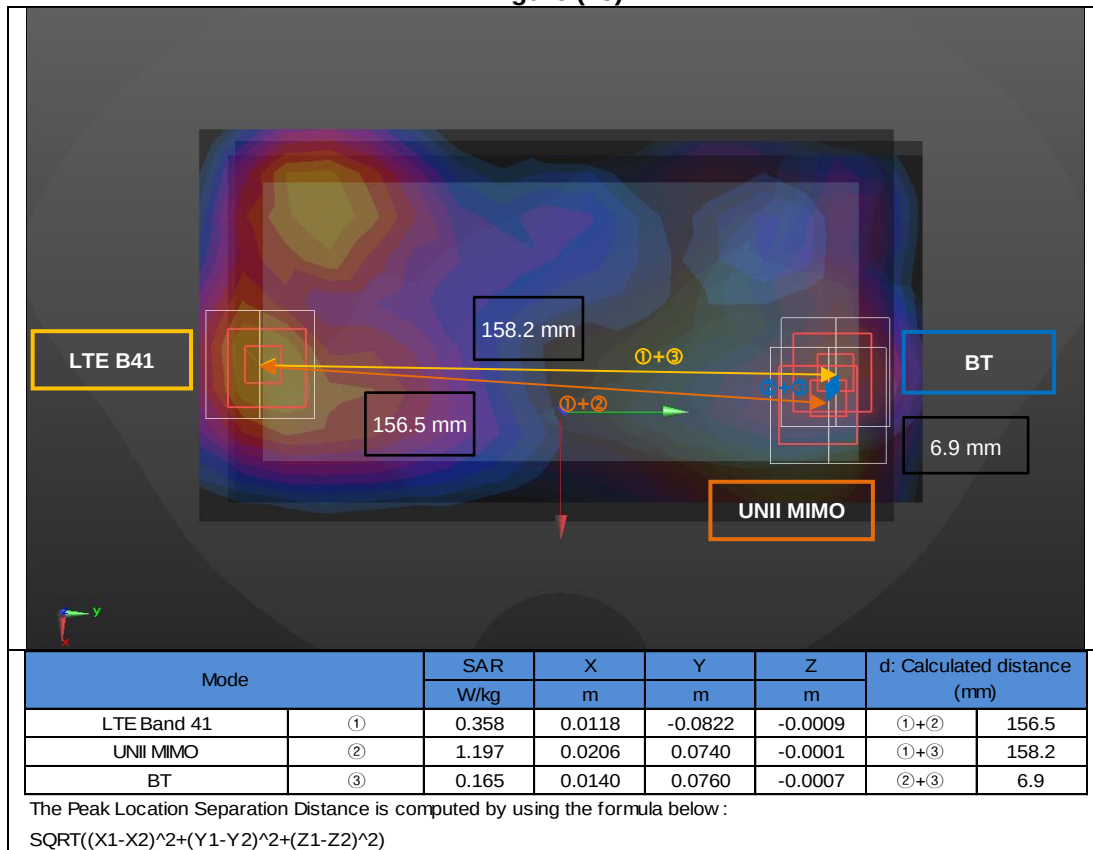


Figure (24)

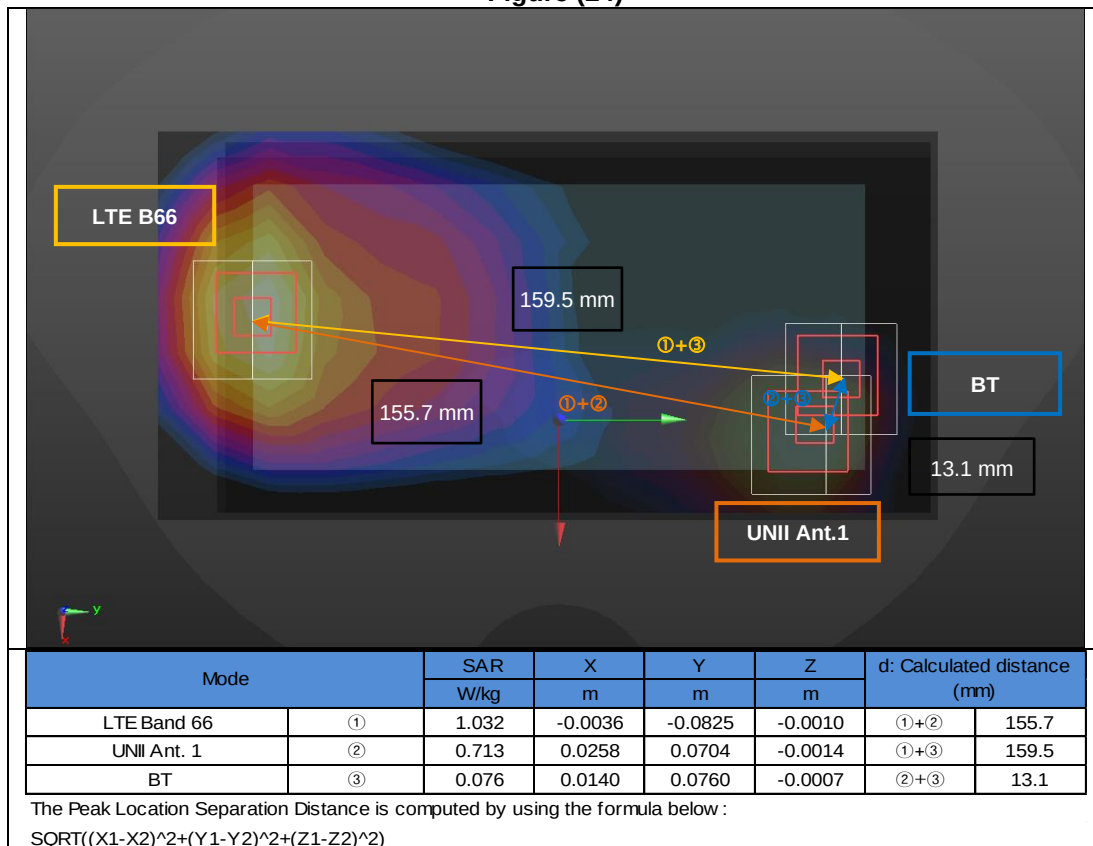


Figure (25)

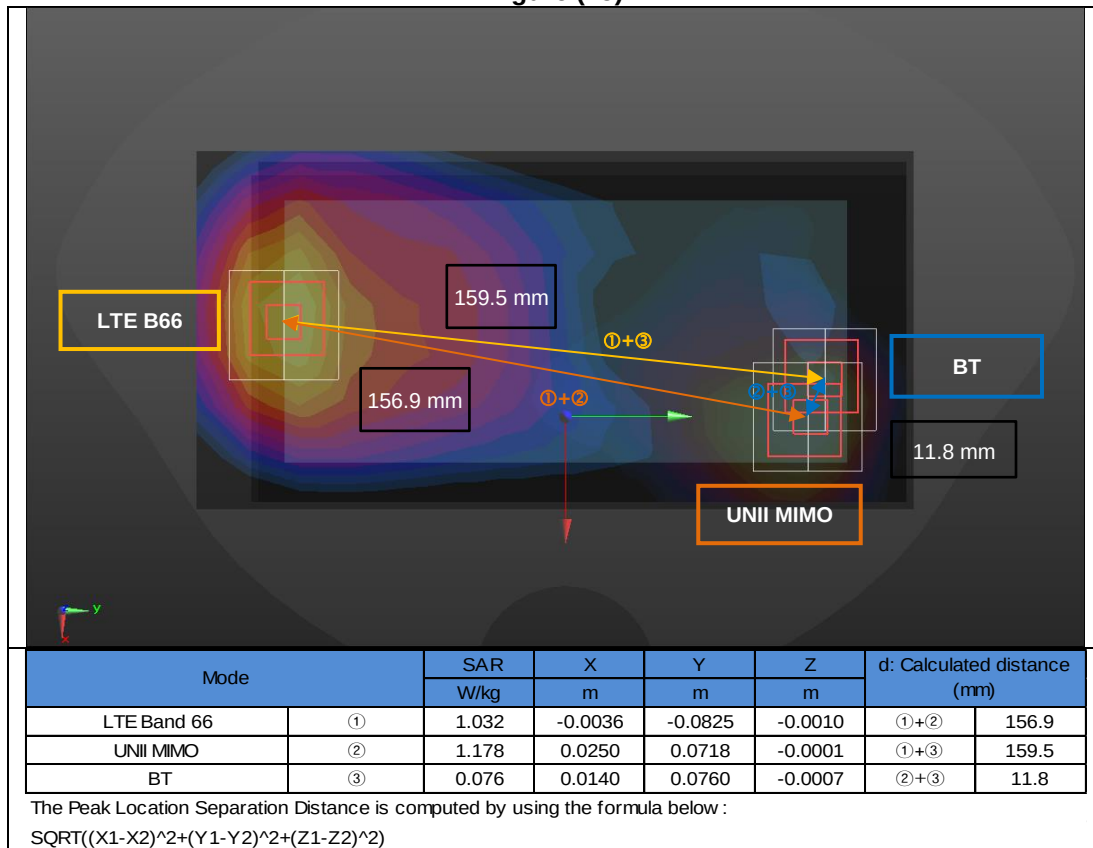


Figure (26)

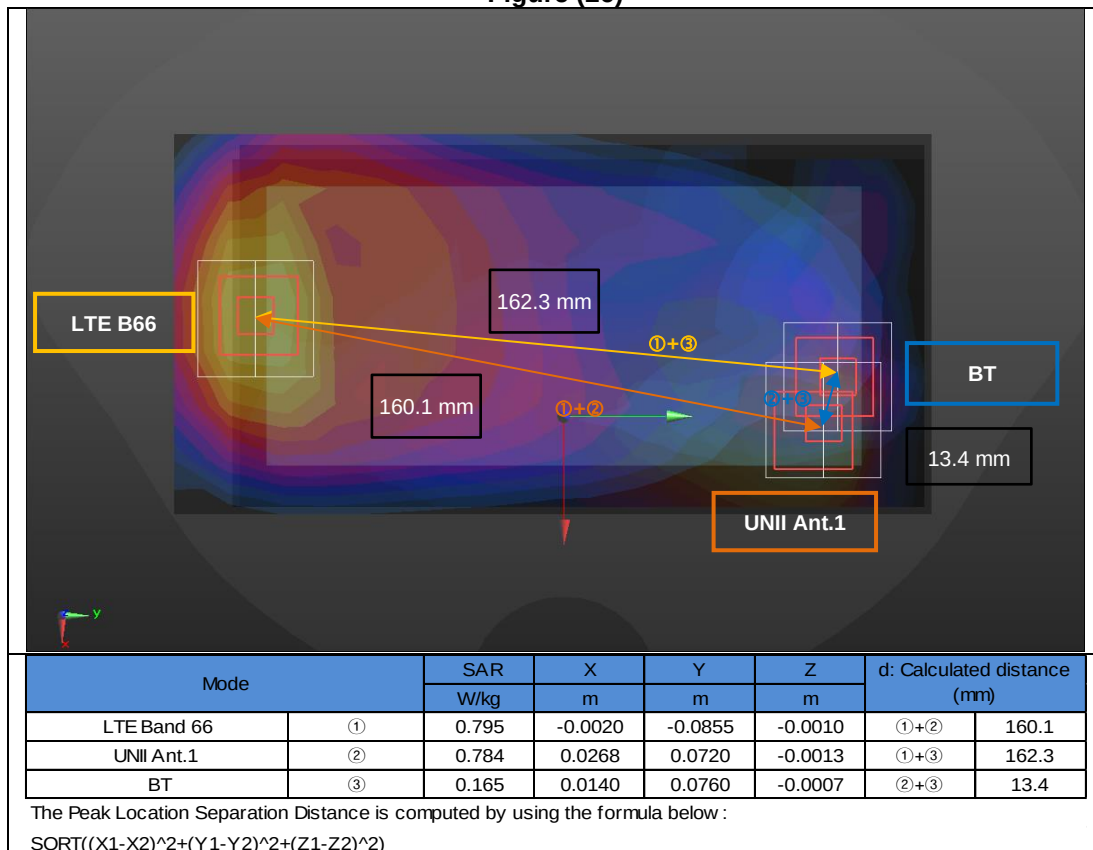
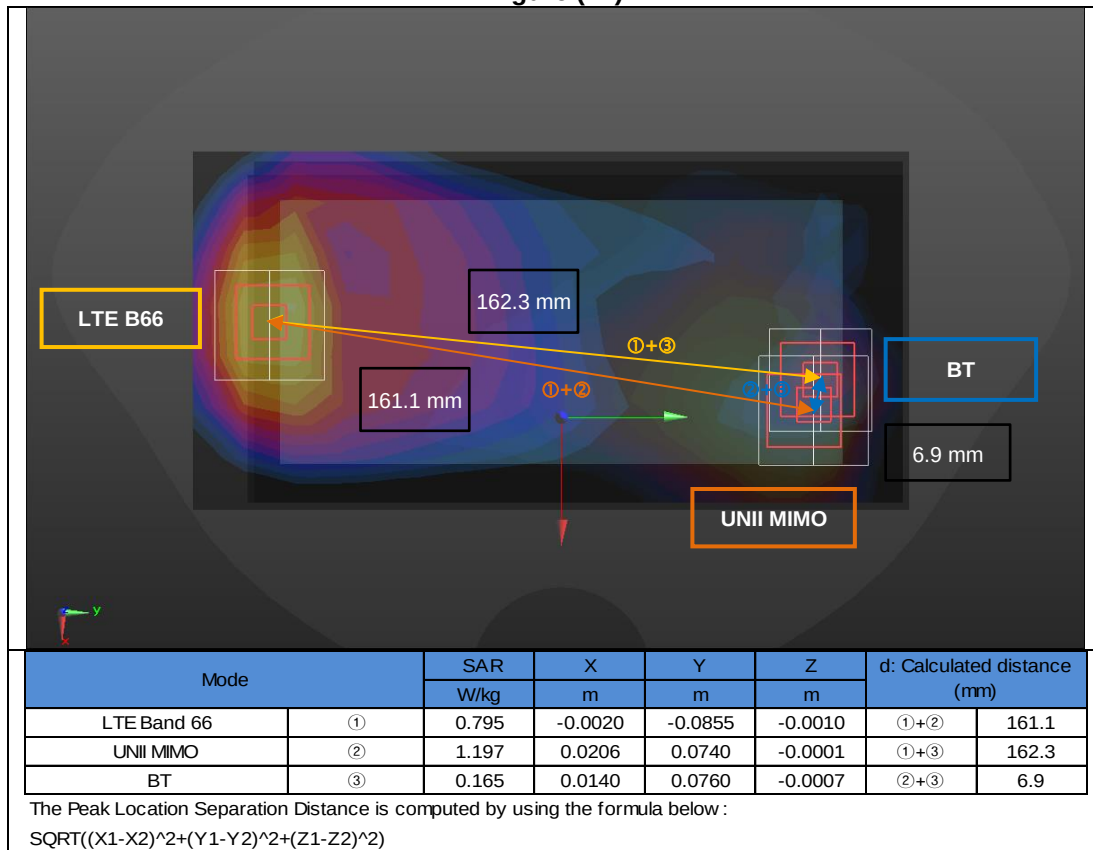


Figure (27)



## Appendixes

Refer to separated files for the following appendixes.

4789468331-S1 FCC Report SAR\_App A\_Photos & Ant. Locations

4789468331-S1 FCC Report SAR\_App B\_Highest SAR Test Plots

4789468331-S1 FCC Report SAR\_App C\_System Check Plots

4789468331-S1 FCC Report SAR\_App D\_SAR Tissue Ingredients

4789468331-S1 FCC Report SAR\_App E\_Probe Cal. Certificates

4789468331-S1 FCC Report SAR\_App F\_Dipole Cal. Certificates

4789468331-S1 FCC Report SAR\_App G\_Volume Scan Results

END OF REPORT