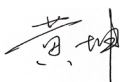


## **FCC SAR Test Report**

**Applicant:** Simgo Asset Acquisition Corp – D/B/A StratusX  
**EUT Description:** MIFI  
**Model:** AI740  
**Brand:** stratusX  
**FCC ID:** 2BBUC-AI740  
**Standards:** FCC 47CFR §2.1093  
**Date of Receipt:** 2023/09/14  
**Date of Test:** 2023/09/15 to 2023/09/25  
**Date of Issue:** 2023/10/11

TOWE. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

the results documented in this report apply only the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility assure that additional production units of the model are manufactured with identical electrical and mechanical components. All sample tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise. without written approval of TOWE, the test report shall not be reproduced except in full.



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**Approved By:**

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**Reviewed By:**

## Revision History

| Rev. | Issue Date | Description | Revised by |
|------|------------|-------------|------------|
| 01   | 2023/10/11 | Original    |            |

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# 1 Statement of Compliance

| Band                                         | Highest SAR(W/kg) |
|----------------------------------------------|-------------------|
|                                              | Hotspot (1g)      |
| GSM850                                       | 0.71              |
| GSM1900                                      | 0.60              |
| WCDMA Band II                                | 1.05              |
| WCDMA Band IV                                | 1.13              |
| WCDMA Band V                                 | 1.03              |
| LTE Band 2                                   | 0.93              |
| LTE Band 4                                   | 1.05              |
| LTE Band 5                                   | <b>1.26</b>       |
| LTE Band 17                                  | 0.63              |
| WI-FI (2.4GHz)                               | 0.04              |
| Highest Simultaneous Transmission SAR (W/kg) |                   |
| Scenario                                     | Hotspot (1g)      |
| Summed SAR                                   | 1.27              |

## 2 Guidance Applied

FCC 47CFR §2.1093

ANSI/IEEE C95.1-1992

IEEE 1528-2013

FCC KDB 941225 D01 3G SAR Measurement Procedures v03r01

FCC KDB 941225 D05 SAR for LTE Devices v02r05

FCC KDB 941225 D06 Hotspot Mode SAR v02r01

FCC KDB 248227 D01 SAR Guidance for IEEE 802.11 Wi-Fi SAR v02r02

FCC KDB 447498 D01 General RF Exposure Guidance v06

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04

FCC KDB 865664 D02 RF Exposure Reporting v01r02

## 3 Lab Information

### 3.1 Testing Location

These measurements tests were conducted at the Sushi TOWE Wireless Testing (Shenzhen) Co., Ltd. facility located at F401 and F101, Building E, Hongwei Industrial Zone, Liuxian 3rd Road, Bao'an District, Shenzhen, China. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014

Tel.: +86-755-27212361

Contact Email: info@towewireless.com

### 3.2 Test Facility / Accreditations

#### A2LA (Certificate Number: 7088.01)

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

#### FCC-Designation No.: CN1353

Sushi TOWE Wireless Testing (Shenzhen) Co., Ltd. has been recognized as an accredited testing laboratory. Designation Number: CN1353.

#### ISED-CAB identifier: CN0152

Sushi TOWE Wireless Testing (Shenzhen) Co., Ltd. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0152

Company Number: 31000

### 3.3 Ambient Condition

Temperature: 18°C~25°C

Relative humidity: 30%~75%

## 4 Client Information

### 4.1 Applicant

|            |                                               |
|------------|-----------------------------------------------|
| Applicant: | Simgo Asset Acquisition Corp – D/B/A StratusX |
| Address:   | 251 Little Falls Rd - Wilmington DE 19808     |

### 4.2 Manufacturer

|            |                                                |
|------------|------------------------------------------------|
| Applicant: | Shenzhen Qingyu Technical Development Ltd      |
| Address:   | Shenzhen Banan Songgang Juleyuan Baifulou# 104 |

## 5 EUT Information

|                                                                                                                                                 |                                                                                   |                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------|
| Model Name                                                                                                                                      | AI740                                                                             |                                                    |
| EUT Description:                                                                                                                                | MIFI                                                                              |                                                    |
| Trade Mark                                                                                                                                      | stratusX                                                                          |                                                    |
| FCC ID                                                                                                                                          | 2BBUC-AI740                                                                       |                                                    |
| SN                                                                                                                                              | AX30203, AX30205                                                                  |                                                    |
| Software Version                                                                                                                                | StratusX_user_20230727103904_5bd0760ce2                                           |                                                    |
| Hardware Version                                                                                                                                | A1740_MB_P2                                                                       |                                                    |
| <b>Device Operating Configurations:</b>                                                                                                         |                                                                                   |                                                    |
| Band                                                                                                                                            | Tx Frequency(MHz)                                                                 | Operating mode                                     |
| GSM850                                                                                                                                          | 824~849                                                                           | GSM Class: B<br>Multi-Slot Class: 12<br>GMSK, 8PSK |
| GSM1900                                                                                                                                         | 1850~1910                                                                         |                                                    |
| WCDMA Band II                                                                                                                                   | 1850~1910                                                                         | RMC<br>HSDPA<br>HSUPA                              |
| WCDMA Band IV                                                                                                                                   | 1710~1755                                                                         |                                                    |
| WCDMA Band V                                                                                                                                    | 824~849                                                                           |                                                    |
| LTE Band 2                                                                                                                                      | 1850 ~1910                                                                        | QPSK<br>16QAM                                      |
| LTE Band 4                                                                                                                                      | 1710~1755                                                                         |                                                    |
| LTE Band 5                                                                                                                                      | 824~849                                                                           |                                                    |
| LTE Band 17                                                                                                                                     | 704~716                                                                           |                                                    |
| Wi-Fi 2.4G                                                                                                                                      | 2412~2462                                                                         | 802.11b/g/n                                        |
| Antenna Type:                                                                                                                                   | <input type="checkbox"/> External, <input checked="" type="checkbox"/> Integrated |                                                    |
| Battery Information:                                                                                                                            | Model:                                                                            | E105570                                            |
|                                                                                                                                                 | Normal Voltage:                                                                   | +3.7V                                              |
|                                                                                                                                                 | Rated capacity:                                                                   | 5000mAh                                            |
|                                                                                                                                                 | Manufacturer:                                                                     | Shenzhen B&K Rechargeable Battery,Inc.             |
| Remark: The above EUT's information was declared by applicant, please refer to the specifications or user manual for more detailed description. |                                                                                   |                                                    |

## 5.1 Antenna Locations

The detailed antenna location information can refer to Appendix D.

Note:

- 1) SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hotspot Mode.

According to the distance between antennas and the sides of the EUT we can draw the conclusion that:

| EUT Sides for SAR Testing |                     |       |      |      |       |     |        |
|---------------------------|---------------------|-------|------|------|-------|-----|--------|
| Antenna                   | Exposure Conditions | Front | Back | Left | Right | Top | Bottom |
| Main                      | Hotspot             | Yes   | Yes  | Yes  | No    | No  | Yes    |
| WIFI                      | Hotspot             | Yes   | Yes  | No   | Yes   | Yes | No     |

Table 1: EUT Sides for SAR Test

## 6 RF Exposure Limits

| Human Exposure                                                  | Uncontrolled Environment<br>General Population (W/kg) or (mW/g) | Controlled Environment<br>Occupational (W/kg) or (mW/g) |
|-----------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------|
| <b>Spatial Peak SAR<sup>1</sup></b><br>(Brain/Trunk)            | 1.6                                                             | 8.0                                                     |
| <b>Spatial Average SAR<sup>2</sup></b><br>(Whole Body)          | 0.08                                                            | 0.4                                                     |
| <b>Spatial Peak SAR<sup>3</sup></b><br>(Hands/Feet/Ankle/Wrist) | 4.0                                                             | 20.0                                                    |

**Note:**

1, The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

2, The Spatial Average value of the SAR averaged over the whole body.

3, The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

**Uncontrolled Environments** are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

**Controlled Environments** are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

## 7 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

### 7.1 SAR Definition

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

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

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

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

Where:

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

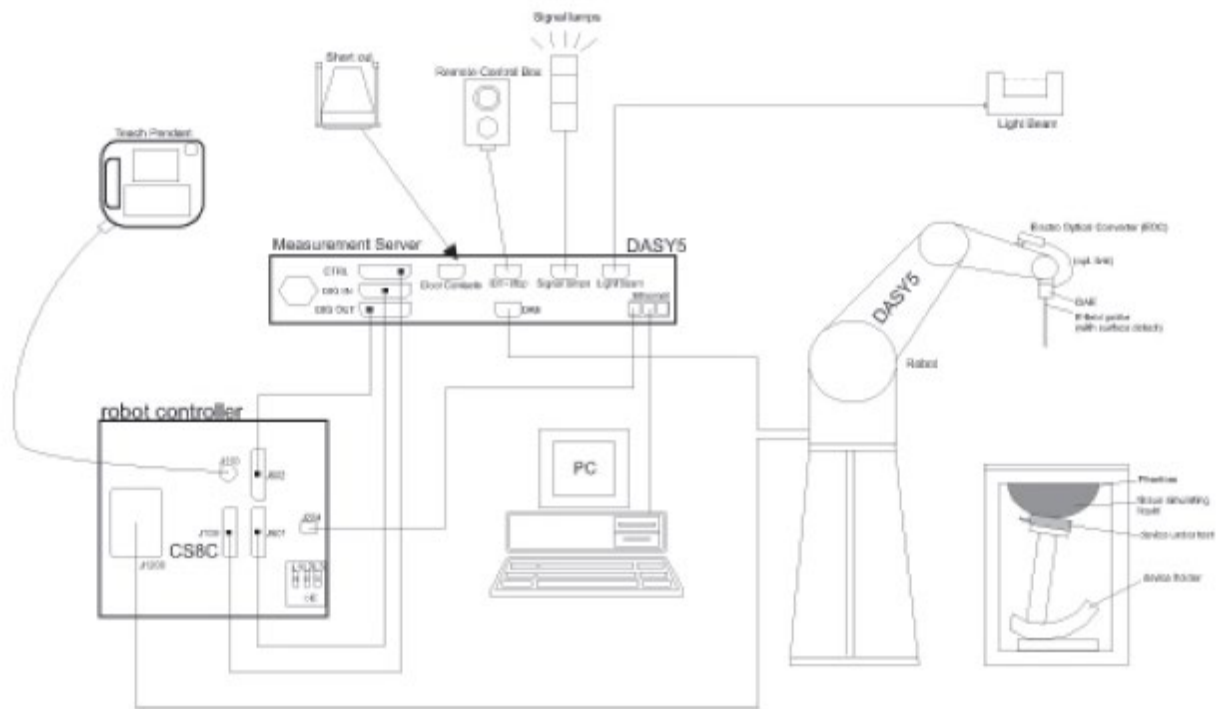
$\rho$  is the mass density of the tissue material (kg/m<sup>3</sup>)

E is the RMS electrical field strength (V/m)

## 8 SAR Measurements System

### 8.1 The SAR Measurement Set-up

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 Windows 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.

## 8.2 Measurement procedure

### 8.2.1 Power reference measurement

The Power Reference Measurement and Power Drift Measurement jobs are useful jobs 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. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

### 8.2.2 Area scan

Measurement procedures for evaluating SAR from wireless handsets typically start with a coarse measurement grid to determine the approximate location of the local peak SAR values. This is known as the area-scan procedure. In addition, identify the positions of any local maxima with SAR values within 2 dB of the maximum value, and that will not be within the zoom scan of other peaks. Additional zoom scans shall be measured for such peaks only when the primary peak is within 2 dB of the SAR compliance limit.

Area scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

|                                                                                                        | $\leq 3 \text{ GHz}$                                                                                                                                                                                                                                                   | $> 3 \text{ GHz}$                                                                    |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface | $5 \pm 1 \text{ mm}$                                                                                                                                                                                                                                                   | $\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5 \text{ mm}$                           |
| 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: $\Delta x_{\text{Area}}$ , $\Delta y_{\text{Area}}$              | $\leq 2 \text{ GHz: } \leq 15 \text{ mm}$<br>$2 - 3 \text{ GHz: } \leq 12 \text{ mm}$                                                                                                                                                                                  | $3 - 4 \text{ GHz: } \leq 12 \text{ mm}$<br>$4 - 6 \text{ GHz: } \leq 10 \text{ mm}$ |
|                                                                                                        | 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. |                                                                                      |

### 8.2.3 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: $\Delta x_{Zoom}$ , $\Delta y_{Zoom}$ |                                    |                                                                                      | $\leq 2$ 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: $\Delta z_{Zoom}(n)$ |                                                                                      | $\leq 5$ mm                                          | 3 – 4 GHz: $\leq 4$ mm<br>4 – 5 GHz: $\leq 3$ mm<br>5 – 6 GHz: $\leq 2$ mm    |
|                                                                             | graded grid                        | $\Delta z_{Zoom}(1)$ : 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  |
|                                                                             |                                    | $\Delta z_{Zoom}(n>1)$ : between subsequent points                                   | $\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$                |                                                                               |
| 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 |

### 8.2.4 Power Drift Measurement

The Power Drift Measurement job measures the field at the same location as the most recent power reference measurement job 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. Several drift measurements are possible for one reference measurement. This allows a user to monitor the power drift of the device under test that must remain within a maximum variation of  $\pm 5\%$ .

## 9 Test Equipment list

| Manufacturer     | Equipment Name                     | Model        | Serial Number  | Calibration Date | Due Date of calibration |
|------------------|------------------------------------|--------------|----------------|------------------|-------------------------|
| SPEAG            | Twin Phantom                       | SAM2         | 1359           | NCR              | NCR                     |
| SPEAG            | E-Field Probe                      | EX3DV4       | 7812           | 2023/05/16       | 2024/05/15              |
| SPEAG            | Data Acquisition Electronics       | DAE4         | 799            | 2023/03/27       | 2024/03/26              |
| SPEAG            | System Validation Kits             | D750V3       | 1231           | 2023/05/04       | 2026/05/03              |
| SPEAG            | System Validation Kits             | D835V2       | 4d302          | 2023/02/06       | 2026/02/05              |
| SPEAG            | System Validation Kits             | D1750V2      | 1115           | 2023/03/23       | 2026/03/22              |
| SPEAG            | System Validation Kits             | D1900V2      | 512            | 2023/03/24       | 2026/03/23              |
| SPEAG            | System Validation Kits             | D2450V2      | 1099           | 2023/02/02       | 2026/02/01              |
| SPEAG            | Dielectric parameter probes        | DAK3.5       | 1341           | 2023/05/08       | 2024/05/07              |
| Anritsu          | Radio Communication Analyzer       | MT8821C      | 6262170463     | 2023/04/08       | 2024/04/07              |
| R&S              | Signal Generator                   | SMR20        | 101691         | 2023/04/08       | 2024/04/07              |
| R&S              | AVG Power Sensor                   | NRP-Z21      | 101651         | 2023/04/08       | 2024/04/07              |
| R&S              | AVG Power Sensor                   | NRP-Z21      | 104189         | 2023/04/08       | 2024/04/07              |
| 海斯迪克             | Thermometer                        | TP300        | TOWE-EQ-SR-023 | 2023/03/22       | 2024/03/21              |
| 上海冰禹流体技术有限公司     | Temperature and Humidity Indicator | HTC-1        | TOWE-EQ-SR-025 | 2023/06/01       | 2024/05/31              |
| Talent Microwave | Directional Coupler                | TC-05180-10S | 220420003      | NCR              | NCR                     |
| QiJi             | Amplifier                          | YX28982301   | TOWE-EQ-SR-020 | NCR              | NCR                     |
| QiJi             | Amplifier                          | YX28982302   | TOWE-EQ-SR-021 | NCR              | NCR                     |

Note:

1. Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged or repaired during the interval.

## 10 SAR measurement variability

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

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

- 1) Repeated measurement is not required when the original highest measured SAR is  $< 0.80$  or  $2 \text{ W/kg}$  (1-g or 10-g respectively); steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is  $\geq 0.80$  or  $2 \text{ W/kg}$  (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  $3.6 \text{ W/kg}$  ( $\sim 10\%$  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  $3.75 \text{ W/kg}$  (1-g or 10-g respectively) and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .

## **11 Description of Test Position**

### **11.1 Wireless Router exposure conditions**

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 where SAR test considerations for handsets ( $L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$ ) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of

devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

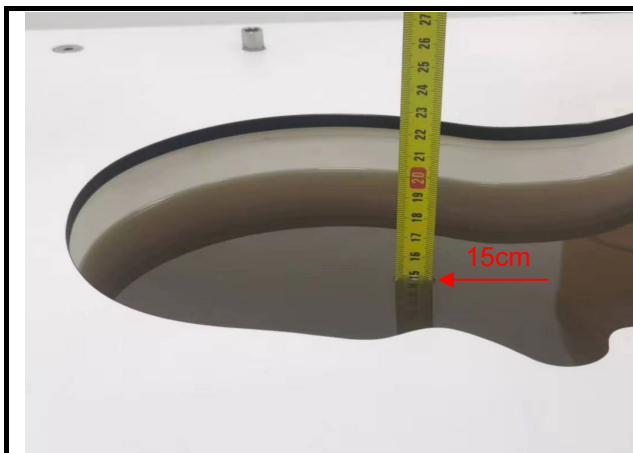
When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often

do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01 procedures. The "Portable Hotspot" feature on the handset was not activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

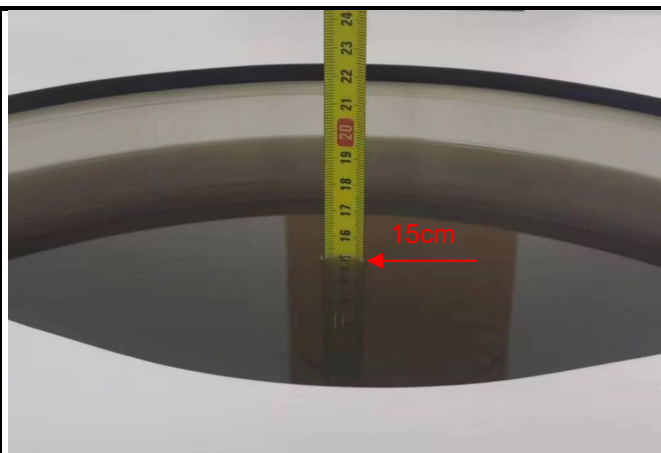
## 12 System Verification

### 12.1 Tissue Verification

The Conductivity ( $\sigma$ ) and Permittivity ( $\rho$ ) are listed in bellow table. The temperature variation of the Tissue Simulate Liquids was  $22\pm 2^{\circ}\text{C}$ , the liquid depth of the ear reference point or the flat phantom was at least 15 cm (which is shown in Figure 12-1/12-2).



**Figure 12-1** Liquid depth in the Head Phantom



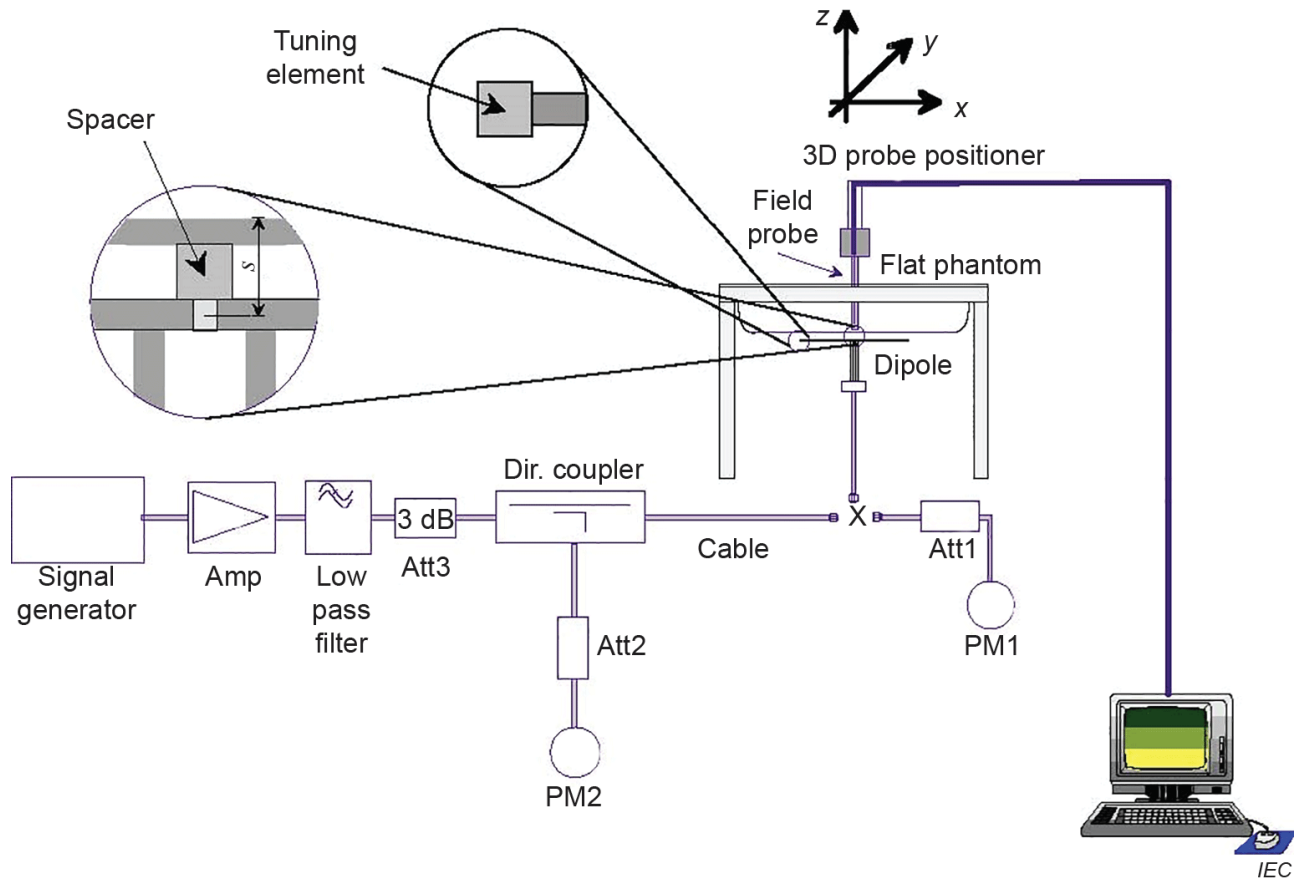
**Figure 12-2** Liquid depth in the Flat Phantom

| Frequency (MHz) | Tissue Type | Liquid Temp. ( $^{\circ}\text{C}$ ) | Target Tissue             |                                   | Measured Tissue           |                                   | Deviation (Limit $\pm 5\%$ ) |                | Date      |
|-----------------|-------------|-------------------------------------|---------------------------|-----------------------------------|---------------------------|-----------------------------------|------------------------------|----------------|-----------|
|                 |             |                                     | Permittivity $\epsilon_r$ | Conductivity $\sigma(\text{S/m})$ | Permittivity $\epsilon_r$ | Conductivity $\sigma(\text{S/m})$ | $\Delta\epsilon_r$           | $\Delta\sigma$ |           |
| 750             | Head        | 21.8                                | 41.90                     | 0.89                              | 42.615                    | 0.897                             | 1.71%                        | 0.83%          | 2023/9/20 |
| 835             | Head        | 22.0                                | 41.50                     | 0.90                              | 42.428                    | 0.893                             | 2.24%                        | -0.78%         | 2023/9/21 |
| 1750            | Head        | 22.3                                | 40.10                     | 1.37                              | 41.059                    | 1.351                             | 2.39%                        | -1.39%         | 2023/9/19 |
| 1900            | Head        | 22.1                                | 40.00                     | 1.40                              | 40.655                    | 1.366                             | 1.64%                        | -2.43%         | 2023/9/15 |
| 1900            | Head        | 22.3                                | 40.00                     | 1.40                              | 40.408                    | 1.380                             | 1.02%                        | -1.43%         | 2023/9/22 |
| 2450            | Head        | 22.1                                | 39.20                     | 1.80                              | 40.068                    | 1.800                             | 2.21%                        | 0.00%          | 2023/9/25 |

Table 2: Measurement Tissue Parameters

## 12.2 SAR System Check

Prior to SAR assessment, a SAR system Check measurement was performed to see if the measured SAR was within  $\pm 10\%$  from the target SAR values. The System Performance Check Setup in Figure 12-3.



**Figure 12-3** System Performance Check Setup

### 12.2.1 System Check Result

| Frequency<br>(MHz) | Tissue<br>Type | Dipole  | S/N   | Target SAR<br>(1W) |               | Measured SAR<br>(250mW) |               | Measured<br>SAR<br>(normalized<br>to 1W) |               | Deviation<br>(Limit $\pm 10\%$ ) |              | Date      |
|--------------------|----------------|---------|-------|--------------------|---------------|-------------------------|---------------|------------------------------------------|---------------|----------------------------------|--------------|-----------|
|                    |                |         |       | 1g<br>(W/kg)       | 10g<br>(W/kg) | 1g<br>(W/kg)            | 10g<br>(W/kg) | 1g<br>(W/kg)                             | 10g<br>(W/kg) | $\Delta 1g$                      | $\Delta 10g$ |           |
| 750                | Head           | D750V3  | 1231  | 8.67               | 5.67          | 2.11                    | 1.40          | 8.44                                     | 5.60          | -2.65%                           | -1.23%       | 2023/9/20 |
| 835                | Head           | D835V2  | 4d302 | 9.78               | 6.37          | 2.44                    | 1.60          | 9.76                                     | 6.40          | -0.20%                           | 0.47%        | 2023/9/21 |
| 1750               | Head           | D1750V2 | 1115  | 36.90              | 19.50         | 9.77                    | 5.21          | 39.08                                    | 20.84         | 5.91%                            | 6.87%        | 2023/9/19 |
| 1900               | Head           | D1900V2 | 512   | 39.40              | 20.50         | 10.40                   | 5.43          | 41.60                                    | 21.72         | 5.58%                            | 5.95%        | 2023/9/15 |
| 1900               | Head           | D1900V2 | 512   | 39.40              | 20.50         | 10.60                   | 5.50          | 42.40                                    | 22.00         | 7.61%                            | 7.32%        | 2023/9/22 |
| 2450               | Head           | D2450V2 | 1099  | 51.40              | 23.90         | 14.00                   | 6.53          | 56.00                                    | 26.12         | 8.95%                            | 9.29%        | 2023/9/25 |

Table 3: SAR System Check Result

### 12.2.2 Detailed System Check Result

Please see the Appendix A

## **13 SAR General Measurement Procedures**

### **13.1 3G SAR Test Reduction Procedure**

In FCC KDB Publication 941225 D01, certain transmission modes within a frequency band and wireless mode evaluated for SAR are defined as primary modes. The equivalent modes considered for SAR test reduction are denoted as secondary modes. When the maximum output power including tune-up tolerance specified for production units in a secondary mode is  $\leq 0.25$  dB higher than the primary mode or when the highest reported SAR of the primary mode, scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode, is  $\leq 1.2$  W/kg, SAR measurements are not required for the secondary mode. These criteria are referred to as the 3G SAR test reduction procedure. When the 3G SAR test reduction procedure is not satisfied, SAR measurements are additionally required for the secondary mode.

### **13.2 SAR Measurement Conditions for GSM**

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.

The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

### **13.3 SAR Measurement Conditions for UMTS**

#### **13.3.1 Output Power Verification**

Maximum output power is verified on the high, middle and low channels according to procedures described in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all "1's" for WCDMA/HSDPA or by applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCH<sub>n</sub> and spreading codes, HSDPA, HSPA) are required in the SAR report. All configurations that are not supported by the handset or cannot be measured due to technical or equipment limitations must be clearly identified.

#### **13.3.2 Body SAR Measurements**

SAR for body configurations is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCH<sub>n</sub> configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreading code or DPDCH<sub>n</sub>, for the highest reported SAR configuration in 12.2 kbps RMC.

### 13.3.3 SAR Measurements with Rel. 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSDPA is measured using and FRC with H-SET 1 in Sub-test and a 12.2 kbps RMC without HSDPA. Handsets with both HSDPA and HSUPA are tested according to release 6 HSPA test procedures. 8.4.5 SAR Measurement with Rel.6 HSUPA The 3G SAR test Reduction Procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, Using H-Set 1 and QPSK for FRC and a 12.2kbps RMC configured in Test Loop Mode 1 and Power Control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing.

### 13.3.4 SAR Measurements with Rel. 6 HSUPA

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA.

When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing.

## 13.4 SAR Measurement Conditions for LTE

LTE modes are tested according to FCC KDB 941225 D05 publication. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The R&S CMW500 or Anritsu MT8820C/MT8821C simulators are used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

### 13.4.1 Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

### 13.4.2 MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

| Modulation | Channel bandwidth/Transmission bandwidth |       |       |        |        |        | MPR (dB) |
|------------|------------------------------------------|-------|-------|--------|--------|--------|----------|
|            | 1.4 MHz                                  | 3 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz |          |
| QPSK       | ≤ 5                                      | ≤ 4   | ≤ 8   | ≤ 12   | ≤ 16   | ≤ 18   | 0        |
| QPSK       | > 5                                      | > 4   | > 8   | > 12   | > 16   | > 18   | 1        |
| 16QAM      | ≤ 5                                      | ≤ 4   | ≤ 8   | ≤ 12   | ≤ 16   | ≤ 18   | 1        |
| 16QAM      | > 5                                      | > 4   | > 8   | > 12   | > 16   | > 18   | 2        |
| 64QAM      | ≤ 5                                      | ≤ 4   | ≤ 8   | ≤ 12   | ≤ 16   | ≤ 18   | 2        |
| 64QAM      | > 5                                      | > 4   | > 8   | > 12   | > 16   | > 18   | 3        |
| 256QAM     | ≥1                                       |       |       |        |        |        | 5        |

### 13.4.3 A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

### 13.4.4 Largest channel bandwidth standalone SAR test requirements

#### A. QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is  $\leq 0.8$  W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is  $> 1.45$  W/kg, SAR is required for all three RB offset configurations for that required test channel.

#### B. QPSK with 50% RB allocation

The procedures required for 1 RB allocation in A are applied to measure the SAR for QPSK with 50% RB allocation.

#### C. QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in A and B are  $\leq 0.8$  W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is  $> 1.45$  W/kg, the remaining required test channels must also be tested.

#### D. Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in A, B, and C to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is  $> \frac{1}{2}$  dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is  $> 1.45$  W/kg.

### 13.4.5 Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in 13.4.4 to determine the channels and RB configurations that need SAR testing, then only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is  $> \frac{1}{2}$  dB higher than the equivalent channel configurations in the largest channel bandwidth configuration, or the reported SAR of a configuration for the largest channel bandwidth is  $> 1.45$  W/kg.

## 13.5 SAR Testing with 802.11 Transmitters

The normal network operating configurations of 802.11 transmitters are not suitable for SAR measurements. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices should be measured using chipset based test mode software to ensure the results are consistent and reliable. See KDB Publication 248227 D01 for more details.

A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

For WiFi SAR testing, a communication link is set up with some command for WiFi mode test. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. Per KDB248227 D01, a minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

### 13.5.1 Initial Test Position Procedure

DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures. The initial test position procedure is described in the following:

1. When the reported SAR of the initial test position is  $\leq 0.4$  W/kg, further SAR measurement is not required for the other (remaining) test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band. SAR is also not required for that exposure configuration in the subsequent test configuration(s).
2. When the reported SAR of the initial test position is  $> 0.4$  W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest extrapolated or estimated 1-g SAR conditions determined by area scans or next closest/smallest test separation distance and maximum RF coupling test positions based on manufacturer justification, on the highest maximum output power channel, until the reported SAR is  $\leq 0.8$  W/kg or all required test positions (left, right, touch, tilt or subsequent surfaces and edges) are tested.
3. For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is  $> 0.8$  W/kg, SAR is measured for these test 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 channels are tested. a) Additional power measurements may be required for this step, which should be limited to those necessary for identifying the subsequent highest output power channels.

### 13.5.2 Initial Test Configuration Procedure

An initial test configuration is determined for OFDM transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. SAR is measured using the highest measured maximum output power channel. For configurations with the same specified or measured maximum output power, additional transmission mode and test channel selection procedures are required. SAR test reduction for subsequent highest output test channels is determined according to reported SAR of the initial test configuration.

For next to the ear, hotspot mode and UMC mini-tablet exposure configurations where multiple test positions are required, the initial test position procedure is applied to minimize the number of test positions required for SAR measurement using the initial test configuration transmission mode. For fixed exposure conditions that do not have multiple SAR test positions, SAR is measured in the transmission mode determined by the initial test configuration.

When the reported SAR of the initial test configuration is  $> 0.8$  W/kg, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is  $\leq 1.2$  W/kg or all required channels are tested.

### **13.5.3 Subsequent Test Configuration Procedures**

For OFDM configurations in each frequency Band and aggregated Band, SAR is evaluated for initial test configuration using the fixed test position or the initial test position on procedure. When the highest reported SAR (for the initial test configuration), adjusted by the ratio of the specified maximum output power of the subsequent test configuration to initial test configuration, is  $\leq 1.2$  W/kg for 1g SAR and  $\leq 3.0$  W/kg for 10g SAR, no additional SAR tests for the subsequent test configurations are required.

### **13.5.4 2.4 GHz SAR Procedures**

Separate SAR procedures are applied to DSSS and OFDM configurations in the 2.4 GHz band to simplify DSSS test requirements. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions.

#### **A) 802.11b DSSS SAR Test Requirements**

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

1. When the reported SAR of the highest measured maximum output power channel for the exposure configuration is  $\leq 0.8$  W/kg, no further SAR testing is required for 802.11b DSSS is that exposure configuration.
2. When the reported SAR is  $> 0.8$  W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is  $> 1.2$  W/kg, SAR is required for the third channel; i.e., all channels require testing.

#### **B) 2.4 GHz 802.11g/n OFDM SAR Test Exclusion Requirements**

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3 of of KDB248227 D01). SAR is not required for the following 2.4 GHz OFDM conditions.

1. When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.
2. 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.

#### **C) SAR Test Requirements for OFDM configurations**

When SAR measurement is required for 802.11 g/n OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

## 14 Conducted Power

### 14.1 Conducted Power of GSM

| GSM 850                 |            |       |       |       |         |                  |                                 |       |       |         |
|-------------------------|------------|-------|-------|-------|---------|------------------|---------------------------------|-------|-------|---------|
| Burst Output Power(dBm) |            |       |       |       |         | Division Factors | Frame-Average Output Power(dBm) |       |       |         |
| Channel                 |            | 128   | 190   | 251   | Tune up |                  | 128                             | 190   | 251   | Tune up |
| GPRS/EGPRS (GMSK)       | 1 TX Slot  | 32.08 | 32.17 | 32.11 | 33.00   | -9.03            | 23.05                           | 23.14 | 23.08 | 23.97   |
|                         | 2 TX Slots | 31.92 | 32.06 | 32.02 | 33.00   | -6.02            | 25.90                           | 26.04 | 26.00 | 26.98   |
|                         | 3 TX Slots | 31.75 | 31.91 | 31.90 | 32.50   | -4.26            | 27.49                           | 27.65 | 27.64 | 28.24   |
|                         | 4 TX Slots | 31.57 | 31.75 | 31.74 | 32.50   | -3.01            | 28.56                           | 28.74 | 28.73 | 29.49   |
| EGPRS (8PSK)            | 1 TX Slot  | 25.55 | 25.55 | 25.83 | 27.00   | -9.03            | 16.52                           | 16.52 | 16.80 | 17.97   |
|                         | 2 TX Slots | 25.34 | 25.47 | 25.73 | 27.00   | -6.02            | 19.32                           | 19.45 | 19.71 | 20.98   |
|                         | 3 TX Slots | 25.17 | 25.31 | 25.59 | 26.50   | -4.26            | 20.91                           | 21.05 | 21.33 | 22.24   |
|                         | 4 TX Slots | 25.02 | 25.10 | 25.47 | 26.50   | -3.01            | 22.01                           | 22.09 | 22.46 | 23.49   |

| GSM 1900                |            |       |       |       |         |                  |                                 |       |       |         |
|-------------------------|------------|-------|-------|-------|---------|------------------|---------------------------------|-------|-------|---------|
| Burst Output Power(dBm) |            |       |       |       |         | Division Factors | Frame-Average Output Power(dBm) |       |       |         |
| Channel                 |            | 512   | 661   | 810   | Tune up |                  | 512                             | 661   | 810   | Tune up |
| GPRS/EGPRS (GMSK)       | 1 TX Slot  | 29.94 | 29.65 | 29.70 | 31.00   | -9.03            | 20.91                           | 20.62 | 20.67 | 21.97   |
|                         | 2 TX Slots | 29.79 | 29.55 | 29.59 | 31.00   | -6.02            | 23.77                           | 23.53 | 23.57 | 24.98   |
|                         | 3 TX Slots | 29.63 | 29.40 | 29.45 | 30.50   | -4.26            | 25.37                           | 25.14 | 25.19 | 26.24   |
|                         | 4 TX Slots | 29.30 | 29.31 | 29.27 | 30.50   | -3.01            | 26.29                           | 26.30 | 26.26 | 27.49   |
| EGPRS (8PSK)            | 1 TX Slot  | 25.67 | 25.59 | 25.44 | 27.00   | -9.03            | 16.64                           | 16.56 | 16.41 | 17.97   |
|                         | 2 TX Slots | 25.55 | 25.48 | 25.34 | 27.00   | -6.02            | 19.53                           | 19.46 | 19.32 | 20.98   |
|                         | 3 TX Slots | 25.33 | 25.30 | 25.16 | 26.50   | -4.26            | 21.07                           | 21.04 | 20.90 | 22.24   |
|                         | 4 TX Slots | 25.07 | 25.01 | 24.91 | 26.50   | -3.01            | 22.06                           | 22.00 | 21.90 | 23.49   |

#### Note:

The frame-averaged power is linearly reported the maximum burst averaged power over 8 time slots. The calculated method are shown as below:

The duty cycle "X" of different time slots as below:

- 1 TX slot is 1/8
- 2 TX slots is 2/8
- 3 TX slots is 3/8
- 4 TX slots is 4/8

Based on the calculation formula: Frame-averaged power = Burst averaged power + 10\*log(X)

So Time slot average factor is as follows:

- Frame-averaged power (1 TX slot) = Burst averaged power (1 TX slot) – 9.03
- Frame-averaged power (2 TX slots) = Burst averaged power (2 TX slots) – 6.02
- Frame-averaged power (3 TX slots) = Burst averaged power (3 TX slots) – 4.26
- Frame-averaged power (4 TX slots) = Burst averaged power (4 TX slots) – 3.01

## 14.2 Conducted Power of UMTS

| WCDMA Band II                |              |       |       |       |         |
|------------------------------|--------------|-------|-------|-------|---------|
| Average Conducted Power(dBm) |              |       |       |       |         |
| Channel                      |              | 9262  | 9400  | 9538  | Tune up |
| WCDMA                        | 12.2kbps RMC | 23.20 | 23.36 | 23.34 | 24.00   |
| HSDPA                        | Subtest 1    | 22.21 | 22.26 | 22.44 | 23.00   |
|                              | Subtest 2    | 21.83 | 21.88 | 21.94 | 22.50   |
|                              | Subtest 3    | 21.70 | 21.86 | 21.83 | 22.50   |
|                              | Subtest 4    | 21.76 | 21.83 | 21.87 | 22.50   |
| HSUPA                        | Subtest 1    | 21.56 | 21.53 | 21.54 | 22.50   |
|                              | Subtest 2    | 21.09 | 20.86 | 21.37 | 22.00   |
|                              | Subtest 3    | 20.23 | 20.57 | 21.09 | 22.00   |
|                              | Subtest 4    | 21.65 | 21.76 | 21.79 | 22.50   |
|                              | Subtest 5    | 22.20 | 22.30 | 22.39 | 23.00   |

| WCDMA Band IV                |              |       |       |       |         |
|------------------------------|--------------|-------|-------|-------|---------|
| Average Conducted Power(dBm) |              |       |       |       |         |
| Channel                      |              | 1312  | 1412  | 1513  | Tune up |
| WCDMA                        | 12.2kbps RMC | 23.45 | 23.46 | 23.44 | 24.00   |
| HSDPA                        | Subtest 1    | 22.26 | 22.16 | 22.29 | 23.00   |
|                              | Subtest 2    | 21.89 | 21.81 | 21.86 | 22.50   |
|                              | Subtest 3    | 21.78 | 21.80 | 21.75 | 22.50   |
|                              | Subtest 4    | 21.74 | 21.82 | 21.78 | 22.50   |
| HSUPA                        | Subtest 1    | 21.79 | 21.44 | 22.16 | 22.50   |
|                              | Subtest 2    | 21.15 | 20.61 | 21.21 | 22.00   |
|                              | Subtest 3    | 20.45 | 20.23 | 20.29 | 22.00   |
|                              | Subtest 4    | 21.13 | 21.63 | 21.75 | 22.50   |
|                              | Subtest 5    | 22.35 | 22.14 | 22.23 | 23.00   |

| WCDMA Band V                 |              |       |       |       |         |
|------------------------------|--------------|-------|-------|-------|---------|
| Average Conducted Power(dBm) |              |       |       |       |         |
| Channel                      |              | 4132  | 4182  | 4233  | Tune up |
| WCDMA                        | 12.2kbps RMC | 23.00 | 23.14 | 22.97 | 24.00   |
| HSDPA                        | Subtest 1    | 21.86 | 22.04 | 21.92 | 23.00   |
|                              | Subtest 2    | 21.58 | 21.64 | 21.52 | 22.50   |
|                              | Subtest 3    | 21.44 | 21.54 | 21.42 | 22.50   |
|                              | Subtest 4    | 21.32 | 21.52 | 21.40 | 22.50   |
| HSUPA                        | Subtest 1    | 21.84 | 21.34 | 21.07 | 22.50   |
|                              | Subtest 2    | 20.78 | 20.96 | 20.81 | 22.00   |
|                              | Subtest 3    | 20.07 | 20.71 | 20.83 | 22.00   |
|                              | Subtest 4    | 21.41 | 21.42 | 21.34 | 22.50   |
|                              | Subtest 5    | 21.89 | 22.05 | 21.86 | 23.00   |

### 14.3 Conducted Power of LTE

| LTE Band 2 |            |         |           | Conducted Power(dBm) |         |         |         |
|------------|------------|---------|-----------|----------------------|---------|---------|---------|
| Bandwidth  | Modulation | RB size | RB offset | Channel              | Channel | Channel | Tune up |
|            |            |         |           | 18607                | 18900   | 19193   |         |
| 1.4MHz     | QPSK       | 1       | 0         | 23.22                | 23.34   | 23.17   | 24.00   |
|            |            | 1       | 2         | 23.45                | 23.50   | 23.19   | 24.00   |
|            |            | 1       | 5         | 23.28                | 23.20   | 23.23   | 24.00   |
|            |            | 3       | 0         | 22.72                | 22.65   | 22.60   | 24.00   |
|            |            | 3       | 2         | 22.79                | 22.82   | 22.66   | 24.00   |
|            |            | 3       | 3         | 22.76                | 22.65   | 22.58   | 24.00   |
|            |            | 6       | 0         | 22.29                | 22.14   | 22.20   | 23.50   |
|            | 16QAM      | 1       | 0         | 22.56                | 22.65   | 22.63   | 23.50   |
|            |            | 1       | 2         | 22.82                | 22.73   | 22.73   | 23.50   |
|            |            | 1       | 5         | 22.80                | 22.64   | 22.66   | 23.50   |
|            |            | 3       | 0         | 21.90                | 21.83   | 21.72   | 23.50   |
|            |            | 3       | 2         | 21.81                | 21.79   | 21.72   | 23.50   |
|            |            | 3       | 3         | 21.81                | 21.73   | 21.80   | 23.50   |
|            |            | 6       | 0         | 21.30                | 21.25   | 21.17   | 22.00   |
|            |            |         |           |                      |         |         |         |
| Bandwidth  | Modulation | RB size | RB offset | Channel              | Channel | Channel | Tune up |
|            |            |         |           | 18615                | 18900   | 19185   |         |
| 3MHz       | QPSK       | 1       | 0         | 23.31                | 23.32   | 23.31   | 24.00   |
|            |            | 1       | 7         | 23.11                | 23.18   | 23.17   | 24.00   |
|            |            | 1       | 14        | 23.18                | 23.42   | 23.31   | 24.00   |
|            |            | 8       | 0         | 21.79                | 21.73   | 21.67   | 23.50   |
|            |            | 8       | 4         | 21.69                | 21.71   | 21.68   | 23.50   |
|            |            | 8       | 7         | 21.77                | 21.82   | 21.71   | 23.50   |
|            |            | 15      | 0         | 22.24                | 22.25   | 22.25   | 23.50   |
|            | 16QAM      | 1       | 0         | 22.68                | 22.67   | 22.63   | 23.50   |
|            |            | 1       | 7         | 22.52                | 22.61   | 22.61   | 23.50   |
|            |            | 1       | 14        | 22.50                | 22.70   | 22.68   | 23.50   |
|            |            | 8       | 0         | 20.74                | 20.73   | 20.65   | 22.00   |
|            |            | 8       | 4         | 20.69                | 20.71   | 20.77   | 22.00   |
|            |            | 8       | 7         | 20.86                | 20.69   | 20.53   | 22.00   |
|            |            | 15      | 0         | 21.33                | 21.26   | 21.23   | 22.00   |
|            |            |         |           |                      |         |         |         |
| Bandwidth  | Modulation | RB size | RB offset | Channel              | Channel | Channel | Tune up |
|            |            |         |           | 18625                | 18900   | 19175   |         |
| 5MHz       | QPSK       | 1       | 0         | 23.24                | 23.32   | 23.20   | 24.00   |
|            |            | 1       | 13        | 23.48                | 23.31   | 23.48   | 24.00   |
|            |            | 1       | 24        | 23.15                | 23.46   | 23.17   | 24.00   |
|            |            | 12      | 0         | 21.71                | 21.73   | 21.56   | 23.50   |
|            |            | 12      | 6         | 21.77                | 21.73   | 21.67   | 23.50   |
|            |            | 12      | 13        | 21.67                | 21.70   | 21.64   | 23.50   |
|            |            | 25      | 0         | 22.23                | 22.19   | 22.30   | 23.50   |
|            | 16QAM      | 1       | 0         | 22.63                | 22.80   | 22.57   | 23.50   |
|            |            | 1       | 13        | 23.10                | 22.90   | 22.89   | 23.50   |
|            |            | 1       | 24        | 22.63                | 22.85   | 22.48   | 23.50   |
|            |            | 12      | 0         | 20.76                | 20.81   | 20.63   | 22.00   |
|            |            | 12      | 6         | 20.93                | 20.78   | 20.78   | 22.00   |
|            |            | 12      | 13        | 20.53                | 20.77   | 20.73   | 22.00   |
|            |            | 25      | 0         | 21.34                | 21.31   | 21.28   | 22.00   |
|            |            |         |           |                      |         |         |         |

| Bandwidth | Modulation | RB size | RB offset | Channel      | Channel      | Channel      | Tune up |
|-----------|------------|---------|-----------|--------------|--------------|--------------|---------|
|           |            |         |           | 18650        | 18900        | 19150        |         |
| 10MHz     | QPSK       | 1       | 0         | 23.41        | 23.37        | 23.40        | 24.00   |
|           |            | 1       | 25        | 23.30        | 23.34        | 23.34        | 24.00   |
|           |            | 1       | 49        | 23.30        | 23.38        | 23.48        | 24.00   |
|           |            | 25      | 0         | 21.71        | 21.83        | 21.80        | 23.50   |
|           |            | 25      | 13        | 21.59        | 21.81        | 21.70        | 23.50   |
|           |            | 25      | 25        | 21.71        | 21.83        | 21.68        | 23.50   |
|           |            | 50      | 0         | 22.18        | 22.35        | 22.26        | 23.50   |
|           | 16QAM      | 1       | 0         | 22.68        | 22.81        | 22.64        | 23.50   |
|           |            | 1       | 25        | 22.77        | 22.72        | 22.93        | 23.50   |
|           |            | 1       | 49        | 22.47        | 22.72        | 22.77        | 23.50   |
|           |            | 25      | 0         | 20.76        | 20.90        | 20.69        | 22.00   |
|           |            | 25      | 13        | 20.64        | 20.87        | 20.81        | 22.00   |
|           |            | 25      | 25        | 20.75        | 20.80        | 20.75        | 22.00   |
|           |            | 50      | 0         | 21.24        | 21.24        | 21.29        | 22.00   |
| Bandwidth | Modulation | RB size | RB offset | Channel      | Channel      | Channel      | Tune up |
|           |            |         |           | 18675        | 18900        | 19125        |         |
| 15MHz     | QPSK       | 1       | 0         | 23.47        | 23.49        | 23.43        | 24.00   |
|           |            | 1       | 38        | 23.29        | 23.31        | 23.25        | 24.00   |
|           |            | 1       | 74        | 23.31        | 23.31        | 23.31        | 24.00   |
|           |            | 36      | 0         | 21.70        | 21.78        | 21.81        | 23.50   |
|           |            | 36      | 18        | 21.58        | 21.77        | 21.80        | 23.50   |
|           |            | 36      | 39        | 21.71        | 21.77        | 21.80        | 23.50   |
|           |            | 75      | 0         | 22.20        | 22.29        | 22.23        | 23.50   |
|           | 16QAM      | 1       | 0         | 22.75        | 22.95        | 23.05        | 23.50   |
|           |            | 1       | 38        | 22.60        | 22.67        | 22.75        | 23.50   |
|           |            | 1       | 74        | 22.61        | 22.71        | 22.47        | 23.50   |
|           |            | 36      | 0         | 20.70        | 20.76        | 20.68        | 22.00   |
|           |            | 36      | 18        | 20.69        | 20.78        | 20.79        | 22.00   |
|           |            | 36      | 39        | 20.65        | 20.87        | 20.80        | 22.00   |
|           |            | 75      | 0         | 21.29        | 21.39        | 21.27        | 22.00   |
| Bandwidth | Modulation | RB size | RB offset | Channel      | Channel      | Channel      | Tune up |
|           |            |         |           | 18700        | 18900        | 19100        |         |
| 20MHz     | QPSK       | 1       | 0         | 23.39        | 23.45        | 23.47        | 24.00   |
|           |            | 1       | 50        | <b>23.42</b> | <b>23.50</b> | <b>23.48</b> | 24.00   |
|           |            | 1       | 99        | 23.28        | 23.49        | 23.17        | 24.00   |
|           |            | 50      | 0         | 21.59        | 21.80        | 21.73        | 23.50   |
|           |            | 50      | 25        | 21.61        | 21.73        | 21.71        | 23.50   |
|           |            | 50      | 50        | <b>21.69</b> | <b>21.83</b> | <b>21.75</b> | 23.50   |
|           |            | 100     | 0         | 22.16        | <b>22.33</b> | 22.29        | 23.50   |
|           | 16QAM      | 1       | 0         | 22.67        | 22.81        | 22.90        | 23.50   |
|           |            | 1       | 50        | 22.79        | 22.75        | 22.53        | 23.50   |
|           |            | 1       | 99        | 22.51        | 22.78        | 22.66        | 23.50   |
|           |            | 50      | 0         | 20.78        | 20.87        | 20.94        | 22.00   |
|           |            | 50      | 25        | 20.75        | 20.78        | 20.77        | 22.00   |
|           |            | 50      | 50        | 20.72        | 20.77        | 20.73        | 22.00   |
|           |            | 100     | 0         | 21.25        | 21.41        | 21.26        | 22.00   |

| LTE Band 4 |            |         |           | Conducted Power(dBm) |         |         |         |
|------------|------------|---------|-----------|----------------------|---------|---------|---------|
| Bandwidth  | Modulation | RB size | RB offset | Channel              | Channel | Channel | Tune up |
|            |            |         |           | 19957                | 20175   | 20393   |         |
| 1.4MHz     | QPSK       | 1       | 0         | 23.05                | 23.09   | 23.22   | 24.00   |
|            |            | 1       | 2         | 23.23                | 23.25   | 23.34   | 24.00   |
|            |            | 1       | 5         | 22.94                | 23.01   | 23.13   | 24.00   |
|            |            | 3       | 0         | 22.51                | 22.61   | 22.72   | 24.00   |
|            |            | 3       | 2         | 22.55                | 22.55   | 22.70   | 24.00   |
|            |            | 3       | 3         | 22.44                | 22.50   | 22.67   | 24.00   |
|            |            | 6       | 0         | 21.96                | 22.10   | 22.25   | 23.00   |
|            | 16QAM      | 1       | 0         | 22.56                | 22.48   | 22.56   | 23.00   |
|            |            | 1       | 2         | 22.57                | 22.48   | 22.76   | 23.00   |
|            |            | 1       | 5         | 22.32                | 22.60   | 22.58   | 23.00   |
|            |            | 3       | 0         | 21.59                | 21.62   | 21.86   | 23.00   |
|            |            | 3       | 2         | 21.49                | 21.68   | 22.01   | 23.00   |
|            |            | 3       | 3         | 21.30                | 21.68   | 21.74   | 23.00   |
|            |            | 6       | 0         | 21.01                | 21.15   | 21.21   | 22.00   |
| Bandwidth  | Modulation | RB size | RB offset | Channel              | Channel | Channel | Tune up |
|            |            |         |           | 19965                | 20175   | 20385   |         |
| 3MHz       | QPSK       | 1       | 0         | 23.13                | 23.18   | 23.35   | 24.00   |
|            |            | 1       | 7         | 23.07                | 23.03   | 23.17   | 24.00   |
|            |            | 1       | 14        | 23.15                | 23.23   | 23.40   | 24.00   |
|            |            | 8       | 0         | 21.47                | 21.62   | 21.72   | 23.00   |
|            |            | 8       | 4         | 21.55                | 21.56   | 21.72   | 23.00   |
|            |            | 8       | 7         | 21.51                | 21.58   | 21.75   | 23.00   |
|            |            | 15      | 0         | 22.08                | 22.03   | 22.18   | 23.00   |
|            | 16QAM      | 1       | 0         | 22.45                | 22.64   | 22.91   | 23.00   |
|            |            | 1       | 7         | 22.46                | 22.46   | 22.40   | 23.00   |
|            |            | 1       | 14        | 22.43                | 22.68   | 22.56   | 23.00   |
|            |            | 8       | 0         | 20.48                | 20.62   | 20.73   | 22.00   |
|            |            | 8       | 4         | 20.59                | 20.69   | 20.75   | 22.00   |
|            |            | 8       | 7         | 20.66                | 20.73   | 20.73   | 22.00   |
|            |            | 15      | 0         | 21.13                | 21.13   | 21.30   | 22.00   |
| Bandwidth  | Modulation | RB size | RB offset | Channel              | Channel | Channel | Tune up |
|            |            |         |           | 19975                | 20175   | 20375   |         |
| 5MHz       | QPSK       | 1       | 0         | 23.17                | 23.27   | 23.33   | 24.00   |
|            |            | 1       | 13        | 23.15                | 23.14   | 23.30   | 24.00   |
|            |            | 1       | 24        | 23.34                | 23.27   | 23.26   | 24.00   |
|            |            | 12      | 0         | 21.73                | 21.60   | 21.75   | 23.00   |
|            |            | 12      | 6         | 21.55                | 21.54   | 21.73   | 23.00   |
|            |            | 12      | 13        | 21.60                | 21.71   | 21.75   | 23.00   |
|            |            | 25      | 0         | 22.16                | 22.18   | 22.26   | 23.00   |
|            | 16QAM      | 1       | 0         | 22.56                | 22.55   | 22.58   | 23.00   |
|            |            | 1       | 13        | 22.65                | 22.73   | 22.64   | 23.00   |
|            |            | 1       | 24        | 22.66                | 22.59   | 22.65   | 23.00   |
|            |            | 12      | 0         | 20.72                | 20.72   | 20.83   | 22.00   |
|            |            | 12      | 6         | 20.52                | 20.68   | 20.87   | 22.00   |
|            |            | 12      | 13        | 20.69                | 20.80   | 20.85   | 22.00   |
|            |            | 25      | 0         | 21.29                | 21.20   | 21.21   | 22.00   |

| Bandwidth | Modulation | RB size | RB offset | Channel      | Channel      | Channel      | Tune up |
|-----------|------------|---------|-----------|--------------|--------------|--------------|---------|
|           |            |         |           | 20000        | 20175        | 20350        |         |
| 10MHz     | QPSK       | 1       | 0         | 23.41        | 23.24        | 23.44        | 24.00   |
|           |            | 1       | 25        | 23.15        | 23.09        | 23.43        | 24.00   |
|           |            | 1       | 49        | 23.35        | 23.25        | 23.33        | 24.00   |
|           |            | 25      | 0         | 21.69        | 21.60        | 21.78        | 23.00   |
|           |            | 25      | 13        | 21.64        | 21.58        | 21.72        | 23.00   |
|           |            | 25      | 25        | 21.53        | 21.60        | 21.76        | 23.00   |
|           |            | 50      | 0         | 21.97        | 22.18        | 22.20        | 23.00   |
|           | 16QAM      | 1       | 0         | 22.64        | 22.89        | 22.70        | 23.00   |
|           |            | 1       | 25        | 22.85        | 22.58        | 22.54        | 23.00   |
|           |            | 1       | 49        | 22.74        | 22.79        | 22.66        | 23.00   |
|           |            | 25      | 0         | 20.66        | 20.63        | 20.84        | 22.00   |
|           |            | 25      | 13        | 20.55        | 20.74        | 20.79        | 22.00   |
|           |            | 25      | 25        | 20.61        | 20.71        | 20.79        | 22.00   |
|           |            | 50      | 0         | 21.10        | 21.21        | 21.28        | 22.00   |
| Bandwidth | Modulation | RB size | RB offset | Channel      | Channel      | Channel      | Tune up |
|           |            |         |           | 20025        | 20175        | 20325        |         |
| 15MHz     | QPSK       | 1       | 0         | 23.23        | 23.35        | 23.45        | 24.00   |
|           |            | 1       | 38        | 23.13        | 23.09        | 23.31        | 24.00   |
|           |            | 1       | 74        | 23.37        | 23.23        | 23.45        | 24.00   |
|           |            | 36      | 0         | 21.62        | 21.54        | 21.78        | 23.00   |
|           |            | 36      | 18        | 21.61        | 21.49        | 21.64        | 23.00   |
|           |            | 36      | 39        | 21.68        | 21.70        | 21.74        | 23.00   |
|           |            | 75      | 0         | 22.08        | 22.23        | 22.24        | 23.00   |
|           | 16QAM      | 1       | 0         | 22.54        | 22.74        | 22.76        | 23.00   |
|           |            | 1       | 38        | 22.25        | 22.62        | 22.61        | 23.00   |
|           |            | 1       | 74        | 22.57        | 22.69        | 22.83        | 23.00   |
|           |            | 36      | 0         | 20.79        | 20.62        | 20.77        | 22.00   |
|           |            | 36      | 18        | 20.63        | 20.47        | 20.72        | 22.00   |
|           |            | 36      | 39        | 20.82        | 20.72        | 20.81        | 22.00   |
|           |            | 75      | 0         | 21.15        | 21.22        | 21.24        | 22.00   |
| Bandwidth | Modulation | RB size | RB offset | Channel      | Channel      | Channel      | Tune up |
|           |            |         |           | 20050        | 20175        | 20300        |         |
| 20MHz     | QPSK       | 1       | 0         | 23.29        | 23.28        | 23.26        | 24.00   |
|           |            | 1       | 50        | <b>23.40</b> | <b>23.42</b> | <b>23.39</b> | 24.00   |
|           |            | 1       | 99        | 23.36        | 23.19        | 23.37        | 24.00   |
|           |            | 50      | 0         | 21.72        | 21.68        | 21.70        | 23.00   |
|           |            | 50      | 25        | 21.57        | 21.58        | 21.60        | 23.00   |
|           |            | 50      | 50        | <b>21.73</b> | <b>21.75</b> | <b>21.71</b> | 23.00   |
|           |            | 100     | 0         | 22.03        | <b>22.21</b> | 22.20        | 23.00   |
|           | 16QAM      | 1       | 0         | 22.72        | 22.57        | 22.65        | 23.00   |
|           |            | 1       | 50        | 22.60        | 22.55        | 22.60        | 23.00   |
|           |            | 1       | 99        | 22.62        | 22.49        | 22.86        | 23.00   |
|           |            | 50      | 0         | 20.79        | 20.77        | 20.81        | 22.00   |
|           |            | 50      | 25        | 20.56        | 20.70        | 20.64        | 22.00   |
|           |            | 50      | 50        | 20.64        | 20.70        | 20.69        | 22.00   |
|           |            | 100     | 0         | 21.10        | 21.15        | 21.32        | 22.00   |

| LTE Band 5 |            |         |           | Conducted Power(dBm) |         |         |         |
|------------|------------|---------|-----------|----------------------|---------|---------|---------|
| Bandwidth  | Modulation | RB size | RB offset | Channel              | Channel | Channel | Tune up |
|            |            |         |           | 20407                | 20525   | 20643   |         |
| 1.4MHz     | QPSK       | 1       | 0         | 23.80                | 23.67   | 23.38   | 24.50   |
|            |            | 1       | 2         | 24.05                | 23.77   | 23.49   | 24.50   |
|            |            | 1       | 5         | 24.00                | 23.74   | 23.58   | 24.50   |
|            |            | 3       | 0         | 23.21                | 23.26   | 22.97   | 24.50   |
|            |            | 3       | 2         | 23.26                | 23.26   | 23.08   | 24.50   |
|            |            | 3       | 3         | 23.17                | 23.10   | 22.94   | 24.50   |
|            |            | 6       | 0         | 22.83                | 22.78   | 22.40   | 23.50   |
|            | 16QAM      | 1       | 0         | 23.20                | 23.05   | 22.80   | 23.50   |
|            |            | 1       | 2         | 23.32                | 23.31   | 22.90   | 23.50   |
|            |            | 1       | 5         | 23.35                | 22.99   | 22.57   | 23.50   |
|            |            | 3       | 0         | 22.50                | 22.22   | 21.99   | 23.50   |
|            |            | 3       | 2         | 22.39                | 22.36   | 21.88   | 23.50   |
|            |            | 3       | 3         | 22.36                | 22.16   | 22.06   | 23.50   |
|            |            | 6       | 0         | 21.80                | 21.67   | 21.39   | 22.50   |
| Bandwidth  | Modulation | RB size | RB offset | Channel              | Channel | Channel | Tune up |
|            |            |         |           | 20415                | 20525   | 20635   |         |
| 3MHz       | QPSK       | 1       | 0         | 24.05                | 23.78   | 23.39   | 24.50   |
|            |            | 1       | 7         | 23.76                | 23.76   | 23.41   | 24.50   |
|            |            | 1       | 14        | 23.87                | 23.85   | 23.64   | 24.50   |
|            |            | 8       | 0         | 22.52                | 22.20   | 21.96   | 23.50   |
|            |            | 8       | 4         | 22.36                | 22.21   | 22.19   | 23.50   |
|            |            | 8       | 7         | 22.34                | 22.14   | 22.07   | 23.50   |
|            |            | 15      | 0         | 22.84                | 22.78   | 22.44   | 23.50   |
|            | 16QAM      | 1       | 0         | 23.33                | 23.18   | 22.96   | 23.50   |
|            |            | 1       | 7         | 23.19                | 22.99   | 23.05   | 23.50   |
|            |            | 1       | 14        | 23.32                | 23.31   | 22.99   | 23.50   |
|            |            | 8       | 0         | 21.38                | 21.12   | 20.76   | 22.50   |
|            |            | 8       | 4         | 21.25                | 21.12   | 21.06   | 22.50   |
|            |            | 8       | 7         | 21.32                | 21.03   | 21.14   | 22.50   |
|            |            | 15      | 0         | 21.95                | 21.54   | 21.32   | 22.50   |
| Bandwidth  | Modulation | RB size | RB offset | Channel              | Channel | Channel | Tune up |
|            |            |         |           | 20425                | 20525   | 20625   |         |
| 5MHz       | QPSK       | 1       | 0         | 23.83                | 23.75   | 23.51   | 24.50   |
|            |            | 1       | 13        | 24.06                | 23.83   | 23.39   | 24.50   |
|            |            | 1       | 24        | 23.91                | 23.84   | 23.61   | 24.50   |
|            |            | 12      | 0         | 22.49                | 22.20   | 21.90   | 23.50   |
|            |            | 12      | 6         | 22.41                | 22.25   | 21.95   | 23.50   |
|            |            | 12      | 13        | 22.41                | 22.14   | 22.11   | 23.50   |
|            |            | 25      | 0         | 22.91                | 22.71   | 22.48   | 23.50   |
|            | 16QAM      | 1       | 0         | 23.17                | 23.04   | 23.06   | 23.50   |
|            |            | 1       | 13        | 23.26                | 23.30   | 23.16   | 23.50   |
|            |            | 1       | 24        | 23.14                | 23.24   | 22.91   | 23.50   |
|            |            | 12      | 0         | 21.37                | 21.15   | 20.80   | 22.50   |
|            |            | 12      | 6         | 21.26                | 21.13   | 20.82   | 22.50   |
|            |            | 12      | 13        | 21.38                | 21.12   | 21.01   | 22.50   |
|            |            | 25      | 0         | 21.88                | 21.66   | 21.45   | 22.50   |

| Bandwidth | Modulation | RB size | RB offset | Channel      | Channel      | Channel      | Tune up |
|-----------|------------|---------|-----------|--------------|--------------|--------------|---------|
|           |            |         |           | 20450        | 20525        | 20600        |         |
| 10MHz     | QPSK       | 1       | 0         | 23.88        | 23.92        | 23.54        | 24.50   |
|           |            | 1       | 25        | <b>23.90</b> | <b>23.98</b> | <b>23.67</b> | 24.50   |
|           |            | 1       | 49        | 23.85        | 23.93        | 23.64        | 24.50   |
|           |            | 25      | 0         | 22.36        | 22.31        | 22.19        | 23.50   |
|           |            | 25      | 13        | <b>22.40</b> | <b>22.42</b> | <b>22.21</b> | 23.50   |
|           |            | 25      | 25        | 22.37        | 22.29        | 22.17        | 23.50   |
|           |            | 50      | 0         | 22.80        | <b>22.81</b> | 22.52        | 23.50   |
|           | 16QAM      | 1       | 0         | 23.26        | 23.25        | 22.99        | 23.50   |
|           |            | 1       | 25        | 23.48        | 23.05        | 22.96        | 23.50   |
|           |            | 1       | 49        | 23.45        | 23.15        | 23.14        | 23.50   |
|           |            | 25      | 0         | 21.28        | 21.18        | 21.19        | 22.50   |
|           |            | 25      | 13        | 21.29        | 21.08        | 21.00        | 22.50   |
|           |            | 25      | 25        | 21.31        | 21.15        | 20.98        | 22.50   |
|           |            | 50      | 0         | 21.86        | 21.64        | 21.53        | 22.50   |

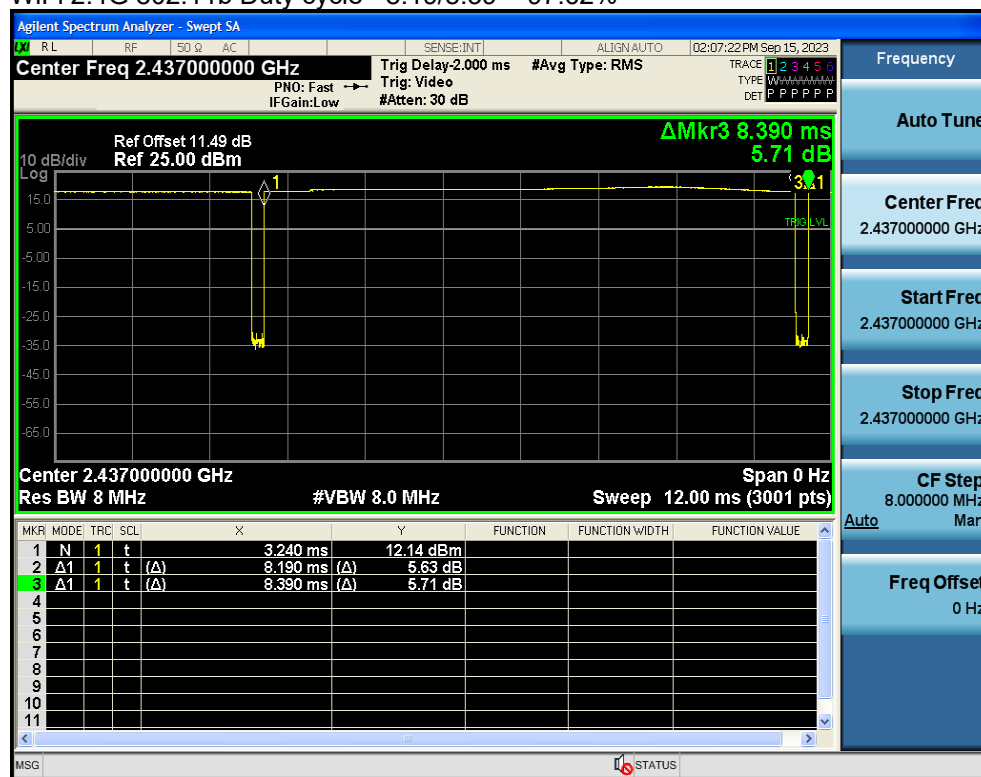
| LTE Band 17 |            |         |           | Conducted Power(dBm) |              |         |         |
|-------------|------------|---------|-----------|----------------------|--------------|---------|---------|
| Bandwidth   | Modulation | RB size | RB offset | Channel              | Channel      | Channel | Tune up |
|             |            |         |           | 23755                | 23790        | 23825   |         |
| 5MHz        | QPSK       | 1       | 0         | 22.69                | 22.81        | 22.84   | 24.00   |
|             |            | 1       | 13        | 22.90                | 22.77        | 22.64   | 24.00   |
|             |            | 1       | 24        | 22.82                | 22.96        | 22.71   | 24.00   |
|             |            | 12      | 0         | 21.28                | 21.27        | 21.43   | 23.00   |
|             |            | 12      | 6         | 21.26                | 21.27        | 21.27   | 23.00   |
|             |            | 12      | 13        | 21.16                | 21.39        | 21.34   | 23.00   |
|             |            | 25      | 0         | 21.53                | 21.78        | 21.73   | 23.00   |
|             | 16QAM      | 1       | 0         | 21.96                | 22.36        | 21.89   | 23.00   |
|             |            | 1       | 13        | 22.21                | 21.99        | 21.97   | 23.00   |
|             |            | 1       | 24        | 21.80                | 22.08        | 22.11   | 23.00   |
|             |            | 12      | 0         | 20.22                | 20.41        | 20.51   | 22.00   |
|             |            | 12      | 6         | 20.27                | 20.40        | 20.46   | 22.00   |
|             |            | 12      | 13        | 20.19                | 20.51        | 20.41   | 22.00   |
|             |            | 25      | 0         | 20.58                | 20.81        | 20.86   | 22.00   |
| Bandwidth   | Modulation | RB size | RB offset | Channel              | Channel      | Channel | Tune up |
|             |            |         |           | 23780                | 23790        | 23800   |         |
| 10MHz       | QPSK       | 1       | 0         | 22.90                | 22.85        | 22.80   | 24.00   |
|             |            | 1       | 25        | 22.91                | <b>22.95</b> | 22.91   | 24.00   |
|             |            | 1       | 49        | 22.71                | 22.79        | 22.89   | 24.00   |
|             |            | 25      | 0         | 21.35                | 21.33        | 21.34   | 23.00   |
|             |            | 25      | 13        | 21.39                | <b>21.40</b> | 21.36   | 23.00   |
|             |            | 25      | 25        | 21.33                | 21.37        | 21.34   | 23.00   |
|             |            | 50      | 0         | 21.79                | 21.80        | 21.69   | 23.00   |
|             | 16QAM      | 1       | 0         | 22.44                | 22.09        | 22.09   | 23.00   |
|             |            | 1       | 25        | 22.22                | 22.23        | 22.35   | 23.00   |
|             |            | 1       | 49        | 22.14                | 22.15        | 22.23   | 23.00   |
|             |            | 25      | 0         | 20.35                | 20.44        | 20.36   | 22.00   |
|             |            | 25      | 13        | 20.32                | 20.39        | 20.40   | 22.00   |
|             |            | 25      | 25        | 20.33                | 20.39        | 20.41   | 22.00   |
|             |            | 50      | 0         | 20.80                | 20.73        | 20.70   | 22.00   |

## 14.4 Conducted Power of WiFi

| WIFI 2.4G   |         |                 |                  |                     |         |          |
|-------------|---------|-----------------|------------------|---------------------|---------|----------|
| Mode        | Channel | Frequency (MHz) | Data Rate (Mbps) | Average Power (dBm) | Tune up | SAR Test |
| 802.11b     | 1       | 2412            | 1                | 10.25               | 11.00   | No       |
|             | 2       | 2417            |                  | 11.64               | 13.00   | No       |
|             | 6       | 2437            |                  | <b>12.59</b>        | 13.00   | Yes      |
|             | 11      | 2462            |                  | 12.58               | 13.00   | No       |
| 802.11g     | 1       | 2412            | 6                | 9.32                | 10.50   | No       |
|             | 2       | 2417            |                  | 10.15               | 12.00   | No       |
|             | 6       | 2437            |                  | 11.43               | 12.00   | No       |
|             | 11      | 2462            |                  | 11.41               | 12.00   | No       |
| 802.11n 20M | 1       | 2412            | 6.5              | 9.57                | 10.50   | No       |
|             | 2       | 2417            |                  | 10.37               | 12.00   | No       |
|             | 6       | 2437            |                  | 11.53               | 12.00   | No       |
|             | 11      | 2462            |                  | 11.50               | 12.00   | No       |

### Duty cycle:

WiFi 2.4G 802.11b Duty cycle= 8.19/8.39 = 97.62%



## 15 SAR Data Summary

### General Notes:

- 1) The Highest Reported SAR Plot refer to Appendix B.
- 2) Per KDB 447498 D01, testing of other required channels within the operating mode of a frequency band is not required when the reported 1g or 10g SAR for the mid-band or highest output power channel is:
  - $\leq 0.8\text{W/kg}$  for 1g or  $2.0\text{W/kg}$  for 10g respectively, when the transmission band is  $\leq 100\text{MHz}$ .
  - $\leq 0.6\text{ W/kg}$  or  $1.5\text{ W/kg}$ , for 1g or 10g respectively, when the transmission band is between 100 MHz and 200MHz.
  - $\leq 0.4\text{ W/kg}$  or  $1.0\text{ W/kg}$ , for 1g or 10g respectively, when the transmission band is  $\geq 200\text{MHz}$ .

### WiFi 2.4G Notes:

- 1) 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  $\leq 1.2\text{ W/kg}$ , SAR measurement is not required for 802.11g/n OFDM configurations
- 2) As the 802.11b highest reported SAR is smaller than  $1.2\text{ W/kg}$ , and the tune-up of the other 802.11 modes are not higher than 802.11b, therefore the adjusted SAR is  $\leq 1.2\text{ W/kg}$  for other 802.11 modes, SAR test for the other 802.11 modes is not required.

### 15.1 SAR Measurement Result of GSM850

| Test NO.     | Test position | Mode     | Ch./Freq. (MHz) | SAR (W/kg) 1-g | SAR (W/kg) 10-g | Power Drift (dB) | Conducted Power(dBm) | Tune up Limit(dBm) | Scaling Factor | Reported 1g SAR (W/kg) |
|--------------|---------------|----------|-----------------|----------------|-----------------|------------------|----------------------|--------------------|----------------|------------------------|
| Hotspot 10mm |               |          |                 |                |                 |                  |                      |                    |                |                        |
| G01          | Front side    | GPRS 4TS | 190/836.6       | 0.595          | 0.393           | 0.09             | 31.75                | 32.50              | 1.189          | <b>0.707</b>           |
| G02          | Back side     | GPRS 4TS | 190/836.6       | 0.437          | 0.301           | 0.06             | 31.75                | 32.50              | 1.189          | 0.519                  |
| G03          | Left side     | GPRS 4TS | 190/836.6       | 0.180          | 0.108           | -0.12            | 31.75                | 32.50              | 1.189          | 0.214                  |
| G04          | Bottom side   | GPRS 4TS | 190/836.6       | 0.224          | 0.143           | 0.16             | 31.75                | 32.50              | 1.189          | 0.266                  |

Table 4: SAR of GSM850.

### 15.2 SAR Measurement Result of GSM1900

| Test NO.     | Test position | Mode     | Ch./Freq. (MHz) | SAR (W/kg) 1-g | SAR (W/kg) 10-g | Power Drift (dB) | Conducted Power(dBm) | Tune up Limit(dBm) | Scaling Factor | Reported 1g SAR (W/kg) |
|--------------|---------------|----------|-----------------|----------------|-----------------|------------------|----------------------|--------------------|----------------|------------------------|
| Hotspot 10mm |               |          |                 |                |                 |                  |                      |                    |                |                        |
| G07          | Front side    | GPRS 4TS | 661/1880        | 0.458          | 0.243           | -0.14            | 29.31                | 30.50              | 1.315          | <b>0.602</b>           |
| G08          | Back side     | GPRS 4TS | 661/1880        | 0.408          | 0.270           | -0.13            | 29.31                | 30.50              | 1.315          | 0.537                  |
| G09          | Left side     | GPRS 4TS | 661/1880        | 0.233          | 0.125           | -0.15            | 29.31                | 30.50              | 1.315          | 0.306                  |
| G10          | Bottom side   | GPRS 4TS | 661/1880        | 0.372          | 0.227           | 0.01             | 29.31                | 30.50              | 1.315          | 0.489                  |

Table 5: SAR of GSM1900.

### 15.3 SAR Measurement Result of WCDMA Band II

| Test NO.     | Test position       | Mode | Ch./Freq. (MHz) | SAR (W/kg) 1-g | SAR (W/kg) 10-g | Power Drift (dB) | Conducted Power(dBm) | Tune up Limit(dBm) | Scaling Factor | Reported 1g SAR (W/kg) |
|--------------|---------------------|------|-----------------|----------------|-----------------|------------------|----------------------|--------------------|----------------|------------------------|
| Hotspot 10mm |                     |      |                 |                |                 |                  |                      |                    |                |                        |
| W01          | Front side          | RMC  | 9400/1880       | 0.769          | 0.448           | 0.14             | 23.36                | 24.00              | 1.159          | 0.891                  |
| W02          | Back side           | RMC  | 9400/1880       | 0.765          | 0.491           | 0.11             | 23.36                | 24.00              | 1.159          | 0.886                  |
| W03          | Left side           | RMC  | 9400/1880       | 0.362          | 0.217           | -0.01            | 23.36                | 24.00              | 1.159          | 0.419                  |
| W06          | Bottom side         | RMC  | 9400/1880       | 0.661          | 0.402           | -0.14            | 23.36                | 24.00              | 1.159          | 0.766                  |
| W07          | Front side          | RMC  | 9262/1852.4     | 0.870          | 0.508           | -0.11            | 23.20                | 24.00              | 1.202          | <b>1.046</b>           |
| W08          | Front side Repeated | RMC  | 9262/1852.4     | 0.837          | 0.501           | 0.04             | 23.20                | 24.00              | 1.202          | 1.006                  |
| W09          | Front side          | RMC  | 9538/1907.6     | 0.849          | 0.501           | 0.07             | 23.34                | 24.00              | 1.164          | 0.988                  |
| W10          | Back side           | RMC  | 9262/1852.4     | 0.734          | 0.466           | -0.07            | 23.20                | 24.00              | 1.202          | 0.882                  |
| W11          | Back side           | RMC  | 9538/1907.6     | 0.557          | 0.335           | 0.03             | 23.34                | 24.00              | 1.164          | 0.648                  |

Table 6: SAR of WCDMA Band II.

| Test Position | Channel/ Frequency (MHz) | Measured SAR (1g) | 1 <sup>st</sup> Repeated SAR (1g) | Ratio | 2 <sup>nd</sup> Repeated SAR (1g) | 3 <sup>rd</sup> Repeated SAR (1g) |
|---------------|--------------------------|-------------------|-----------------------------------|-------|-----------------------------------|-----------------------------------|
| Front side    | 9262/1852.4              | 0.870             | 0.837                             | 1.04  | N/A                               | N/A                               |

## 15.4 SAR Measurement Result of WCDMA Band IV

| Test NO.     | Test position       | Mode | Ch./Freq. (MHz) | SAR (W/kg) 1-g | SAR (W/kg) 10-g | Power Drift (dB) | Conducted Power(dBm) | Tune up Limit(dBm) | Scaling Factor | Reported 1g SAR (W/kg) |
|--------------|---------------------|------|-----------------|----------------|-----------------|------------------|----------------------|--------------------|----------------|------------------------|
| Hotspot 10mm |                     |      |                 |                |                 |                  |                      |                    |                |                        |
| W14          | Front side          | RMC  | 1412/1732.4     | 0.952          | 0.571           | -0.02            | 23.46                | 24.00              | 1.132          | 1.078                  |
| W15          | Back side           | RMC  | 1412/1732.4     | 0.729          | 0.407           | -0.16            | 23.46                | 24.00              | 1.132          | 0.826                  |
| W16          | Left side           | RMC  | 1412/1732.4     | 0.237          | 0.139           | 0.08             | 23.46                | 24.00              | 1.132          | 0.268                  |
| W19          | Bottom side         | RMC  | 1412/1732.4     | 0.507          | 0.316           | 0.01             | 23.46                | 24.00              | 1.132          | 0.574                  |
| W20          | Front side          | RMC  | 1312/1712.4     | 0.976          | 0.578           | 0.04             | 23.45                | 24.00              | 1.135          | 1.108                  |
| W21          | Front side          | RMC  | 1513/1752.6     | 0.994          | 0.588           | -0.06            | 23.44                | 24.00              | 1.138          | <b>1.131</b>           |
| W22          | Front side Repeated | RMC  | 1513/1752.6     | 0.982          | 0.582           | -0.07            | 23.44                | 24.00              | 1.138          | 1.117                  |
| W23          | Back side           | RMC  | 1312/1712.4     | 0.740          | 0.394           | -0.16            | 23.45                | 24.00              | 1.135          | 0.840                  |
| W24          | Back side           | RMC  | 1513/1752.6     | 0.866          | 0.479           | -0.01            | 23.44                | 24.00              | 1.138          | 0.985                  |

Table 7: SAR of WCDMA Band IV.

| Test Position | Channel/ Frequency (MHz) | Measured SAR (1g) | 1 <sup>st</sup> Repeated SAR (1g) | Ratio | 2 <sup>nd</sup> Repeated SAR (1g) | 3 <sup>rd</sup> Repeated SAR (1g) |
|---------------|--------------------------|-------------------|-----------------------------------|-------|-----------------------------------|-----------------------------------|
|               |                          |                   |                                   |       |                                   |                                   |
| Front side    | 1513/1752.6              | 0.994             | 0.982                             | 1.01  | N/A                               | N/A                               |

## 15.5 SAR Measurement Result of WCDMA Band V

| Test NO.     | Test position       | Mode | Ch./Freq. (MHz) | SAR (W/kg) 1-g | SAR (W/kg) 10-g | Power Drift (dB) | Conducted Power(dBm) | Tune up Limit(dBm) | Scaling Factor | Reported 1g SAR (W/kg) |
|--------------|---------------------|------|-----------------|----------------|-----------------|------------------|----------------------|--------------------|----------------|------------------------|
| Hotspot 10mm |                     |      |                 |                |                 |                  |                      |                    |                |                        |
| W24          | Front side          | RMC  | 4182/836.4      | 0.716          | 0.493           | 0.04             | 23.14                | 24.00              | 1.219          | 0.873                  |
| W25          | Back side           | RMC  | 4182/836.4      | 0.733          | 0.520           | 0.10             | 23.14                | 24.00              | 1.219          | 0.894                  |
| W26          | Left side           | RMC  | 4182/836.4      | 0.398          | 0.208           | 0.04             | 23.14                | 24.00              | 1.219          | 0.485                  |
| W29          | Bottom side         | RMC  | 4182/836.4      | 0.320          | 0.222           | 0.00             | 23.14                | 24.00              | 1.219          | 0.390                  |
| W30          | Front side          | RMC  | 4132/826.4      | 0.755          | 0.479           | 0.04             | 23.00                | 24.00              | 1.259          | 0.950                  |
| W31          | Front side          | RMC  | 4233/846.6      | 0.815          | 0.513           | -0.05            | 22.97                | 24.00              | 1.268          | <b>1.033</b>           |
| W34          | Front side Repeated | RMC  | 4233/846.6      | 0.774          | 0.514           | -0.02            | 22.97                | 24.00              | 1.268          | 0.981                  |
| W32          | Back side           | RMC  | 4132/826.4      | 0.754          | 0.527           | -0.01            | 23.00                | 24.00              | 1.259          | 0.949                  |
| W33          | Back side           | RMC  | 4233/846.6      | 0.726          | 0.517           | -0.01            | 22.97                | 24.00              | 1.268          | 0.920                  |

Table 8: SAR of WCDMA Band V.

| Test Position | Channel/ Frequency (MHz) | Measured SAR (1g) | 1 <sup>st</sup> Repeated SAR (1g) | Ratio | 2 <sup>nd</sup> Repeated SAR (1g) | 3 <sup>rd</sup> Repeated SAR (1g) |
|---------------|--------------------------|-------------------|-----------------------------------|-------|-----------------------------------|-----------------------------------|
|               |                          |                   |                                   |       |                                   |                                   |
| Front side    | 4233/846.6               | 0.815             | 0.774                             | 1.05  | N/A                               | N/A                               |

## 15.6 SAR Measurement Result of LTE Band 2

| Test NO.              | Test position       | BW. (MHz) | Mode       | Ch./Freq. (MHz) | SAR (W/kg) 1-g | SAR (W/kg) 10-g | Power Drift (dB) | Conducted Power (dBm) | Tune up Limit (dBm) | Scaling Factor | Reported 1g SAR (W/kg) |
|-----------------------|---------------------|-----------|------------|-----------------|----------------|-----------------|------------------|-----------------------|---------------------|----------------|------------------------|
| Hotspot 10mm (1RB)    |                     |           |            |                 |                |                 |                  |                       |                     |                |                        |
| L01                   | Front side          | 20        | QPSK 1_50  | 18900/1880      | 0.829          | 0.482           | -0.12            | 23.50                 | 24.00               | 1.122          | <b>0.930</b>           |
| L02                   | Front side Repeated | 20        | QPSK 1_50  | 18900/1880      | 0.728          | 0.434           | 0.05             | 23.50                 | 24.00               | 1.122          | 0.817                  |
| L03                   | Back side           | 20        | QPSK 1_50  | 18900/1880      | 0.715          | 0.466           | -0.02            | 23.50                 | 24.00               | 1.122          | 0.802                  |
| L04                   | Left side           | 20        | QPSK 1_50  | 18900/1880      | 0.377          | 0.238           | -0.07            | 23.50                 | 24.00               | 1.122          | 0.423                  |
| L07                   | Bottom side         | 20        | QPSK 1_50  | 18900/1880      | 0.738          | 0.445           | -0.10            | 23.50                 | 24.00               | 1.122          | 0.828                  |
| L08                   | Front side          | 20        | QPSK 1_50  | 18700/1860      | 0.779          | 0.466           | 0.04             | 23.42                 | 24.00               | 1.143          | 0.890                  |
| L09                   | Front side          | 20        | QPSK 1_50  | 19100/1900      | 0.798          | 0.464           | -0.06            | 23.48                 | 24.00               | 1.127          | 0.900                  |
| L10                   | Back side           | 20        | QPSK 1_50  | 18700/1860      | 0.711          | 0.465           | -0.03            | 23.42                 | 24.00               | 1.143          | 0.813                  |
| L11                   | Back side           | 20        | QPSK 1_50  | 19100/1900      | 0.554          | 0.304           | 0.09             | 23.48                 | 24.00               | 1.127          | 0.624                  |
| L12                   | Bottom side         | 20        | QPSK 1_50  | 18700/1860      | 0.566          | 0.339           | -0.08            | 23.42                 | 24.00               | 1.143          | 0.647                  |
| L13                   | Bottom side         | 20        | QPSK 1_50  | 19100/1900      | 0.583          | 0.362           | 0.15             | 23.48                 | 24.00               | 1.127          | 0.657                  |
| Hotspot 10mm (50%RB)  |                     |           |            |                 |                |                 |                  |                       |                     |                |                        |
| L14                   | Front side          | 20        | QPSK 50_50 | 18900/1880      | 0.616          | 0.360           | -0.04            | 21.83                 | 23.50               | 1.469          | 0.905                  |
| L15                   | Back side           | 20        | QPSK 50_50 | 18900/1880      | 0.540          | 0.335           | 0.08             | 21.83                 | 23.50               | 1.469          | 0.793                  |
| L16                   | Left side           | 20        | QPSK 50_50 | 18900/1880      | 0.301          | 0.183           | -0.01            | 21.83                 | 23.50               | 1.469          | 0.442                  |
| L19                   | Bottom side         | 20        | QPSK 50_50 | 18900/1880      | 0.490          | 0.304           | 0.07             | 21.83                 | 23.50               | 1.469          | 0.720                  |
| L20                   | Front side          | 20        | QPSK 50_50 | 18700/1860      | 0.605          | 0.356           | -0.12            | 21.69                 | 23.50               | 1.517          | 0.918                  |
| L21                   | Front side          | 20        | QPSK 50_50 | 19100/1900      | 0.595          | 0.346           | 0.01             | 21.75                 | 23.50               | 1.496          | 0.890                  |
| Hotspot 10mm (100%RB) |                     |           |            |                 |                |                 |                  |                       |                     |                |                        |
| L22                   | Front side          | 20        | QPSK 100_0 | 18900/1880      | 0.623          | 0.364           | -0.01            | 22.33                 | 23.50               | 1.309          | 0.816                  |
| L23                   | Back side           | 20        | QPSK 100_0 | 18900/1880      | 0.568          | 0.366           | 0.12             | 22.33                 | 23.50               | 1.309          | 0.744                  |
| L24                   | Bottom side         | 20        | QPSK 100_0 | 18900/1880      | 0.495          | 0.293           | -0.13            | 22.33                 | 23.50               | 1.309          | 0.648                  |

Table 9: SAR of LTE Band 2.

## 15.7 SAR Measurement Result of LTE Band 4

| Test NO.              | Test position      | BW. (MHz) | Mode       | Ch./Freq. (MHz) | SAR (W/kg) 1-g | SAR (W/kg) 10-g | Power Drift (dB) | Conducted Power(dBm) | Tune up Limit(dBm) | Scaling Factor | Reported 1g SAR (W/kg) |
|-----------------------|--------------------|-----------|------------|-----------------|----------------|-----------------|------------------|----------------------|--------------------|----------------|------------------------|
| Hotspot 10mm (1RB)    |                    |           |            |                 |                |                 |                  |                      |                    |                |                        |
| L25                   | Front side         | 20        | QPSK 1_50  | 20175/1732.5    | 0.812          | 0.487           | -0.07            | 23.42                | 24.00              | 1.143          | 0.928                  |
| L26                   | Back side          | 20        | QPSK 1_50  | 20175/1732.5    | 0.820          | 0.438           | -0.17            | 23.42                | 24.00              | 1.143          | 0.937                  |
| L27                   | Left side          | 20        | QPSK 1_50  | 20175/1732.5    | 0.365          | 0.230           | -0.07            | 23.42                | 24.00              | 1.143          | 0.417                  |
| L30                   | Bottom side        | 20        | QPSK 1_50  | 20175/1732.5    | 0.519          | 0.307           | 0.01             | 23.42                | 24.00              | 1.143          | 0.593                  |
| L31                   | Front side         | 20        | QPSK 1_50  | 20050/1720      | 0.800          | 0.479           | -0.03            | 23.40                | 24.00              | 1.148          | 0.919                  |
| L32                   | Front side         | 20        | QPSK 1_50  | 20300/1745      | 0.899          | 0.525           | -0.09            | 23.39                | 24.00              | 1.151          | 1.035                  |
| L42                   | Back side          | 20        | QPSK 1_50  | 20050/1720      | 0.839          | 0.427           | 0.00             | 23.40                | 24.00              | 1.148          | 0.963                  |
| L43                   | Back side          | 20        | QPSK 1_50  | 20300/1745      | 0.906          | 0.478           | -0.16            | 23.39                | 24.00              | 1.151          | 1.043                  |
| L47                   | Back side Repeated | 20        | QPSK 1_50  | 20300/1745      | 0.916          | 0.481           | -0.18            | 23.39                | 24.00              | 1.151          | <b>1.054</b>           |
| Hotspot 10mm (50%RB)  |                    |           |            |                 |                |                 |                  |                      |                    |                |                        |
| L33                   | Front side         | 20        | QPSK 50_50 | 20175/1732.5    | 0.678          | 0.398           | -0.07            | 21.75                | 23.00              | 1.334          | 0.904                  |
| L34                   | Back side          | 20        | QPSK 50_50 | 20175/1732.5    | 0.655          | 0.348           | -0.18            | 21.75                | 23.00              | 1.334          | 0.873                  |
| L35                   | Left side          | 20        | QPSK 50_50 | 20175/1732.5    | 0.142          | 0.087           | 0.05             | 21.75                | 23.00              | 1.334          | 0.189                  |
| L38                   | Bottom side        | 20        | QPSK 50_50 | 20175/1732.5    | 0.402          | 0.237           | 0.07             | 21.75                | 23.00              | 1.334          | 0.536                  |
| L39                   | Front side         | 20        | QPSK 50_50 | 20050/1720      | 0.638          | 0.382           | -0.06            | 21.73                | 23.00              | 1.340          | 0.855                  |
| L40                   | Front side         | 20        | QPSK 50_50 | 20300/1745      | 0.663          | 0.394           | 0.01             | 21.71                | 23.00              | 1.346          | 0.892                  |
| L45                   | Back side          | 20        | QPSK 50_50 | 20050/1720      | 0.631          | 0.338           | 0.16             | 21.73                | 23.00              | 1.340          | 0.845                  |
| L46                   | Back side          | 20        | QPSK 50_50 | 20300/1745      | 0.638          | 0.361           | 0.18             | 21.71                | 23.00              | 1.346          | 0.859                  |
| Hotspot 10mm (100%RB) |                    |           |            |                 |                |                 |                  |                      |                    |                |                        |
| L41                   | Front side         | 20        | QPSK 100_0 | 20175/1732.5    | 0.671          | 0.398           | 0.00             | 22.21                | 23.00              | 1.199          | 0.805                  |
| L44                   | Back side          | 20        | QPSK 100_0 | 20175/1732.5    | 0.596          | 0.321           | 0.03             | 22.21                | 23.00              | 1.199          | 0.715                  |

Table 10: SAR of LTE Band 4.

| Test Position | Channel/<br>Frequency | Measured SAR<br>(1g) | 1 <sup>st</sup><br>Repeated | Ratio | 2 <sup>nd</sup><br>Repeated | 3 <sup>rd</sup><br>Repeated |
|---------------|-----------------------|----------------------|-----------------------------|-------|-----------------------------|-----------------------------|
|               | (MHz)                 |                      | SAR (1g)                    |       | SAR (1g)                    | SAR (1g)                    |
| Back side     | 20300/1745            | 0.906                | 0.916                       | 1.01  | N/A                         | N/A                         |

## 15.8 SAR Measurement Result of LTE Band 5

| Test NO.             | Test position       | BW. (MHz) | Mode       | Ch./Freq. (MHz) | SAR (W/kg) 1-g | SAR (W/kg) 10-g | Power Drift (dB) | Conducted Power(dBm) | Tune up Limit(dBm) | Scaling Factor | Reported 1g SAR (W/kg) |
|----------------------|---------------------|-----------|------------|-----------------|----------------|-----------------|------------------|----------------------|--------------------|----------------|------------------------|
| Hotspot 10mm (1RB)   |                     |           |            |                 |                |                 |                  |                      |                    |                |                        |
| L60                  | Front side          | 10        | QPSK 1_25  | 20525/836.5     | 0.893          | 0.600           | -0.09            | 23.98                | 24.50              | 1.127          | 1.007                  |
| L61                  | Back side           | 10        | QPSK 1_25  | 20525/836.5     | 0.946          | 0.647           | -0.02            | 23.98                | 24.50              | 1.127          | 1.066                  |
| L62                  | Left side           | 10        | QPSK 1_25  | 20525/836.5     | 0.411          | 0.239           | 0.00             | 23.98                | 24.50              | 1.127          | 0.463                  |
| L65                  | Bottom side         | 10        | QPSK 1_25  | 20525/836.5     | 0.414          | 0.288           | -0.08            | 23.98                | 24.50              | 1.127          | 0.467                  |
| L66                  | Front side          | 10        | QPSK 1_25  | 20450/829       | 0.941          | 0.606           | -0.04            | 23.90                | 24.50              | 1.148          | 1.080                  |
| L67                  | Front side          | 10        | QPSK 1_25  | 20600/844       | 1.040          | 0.675           | 0.15             | 23.67                | 24.50              | 1.211          | <b>1.259</b>           |
| L83                  | Front side Repeated | 10        | QPSK 1_25  | 20600/844       | 0.912          | 0.609           | -0.05            | 23.67                | 24.50              | 1.211          | 1.104                  |
| L68                  | Back side           | 10        | QPSK 1_25  | 20450/829       | 0.974          | 0.684           | -0.06            | 23.90                | 24.50              | 1.148          | 1.118                  |
| L69                  | Back side           | 10        | QPSK 1_25  | 20600/844       | 0.903          | 0.622           | -0.09            | 23.67                | 24.50              | 1.211          | 1.093                  |
| Hotspot 10mm (50%RB) |                     |           |            |                 |                |                 |                  |                      |                    |                |                        |
| L72                  | Front side          | 10        | QPSK 25_13 | 20525/836.5     | 0.761          | 0.494           | 0.02             | 22.42                | 23.50              | 1.282          | 0.976                  |
| L73                  | Back side           | 10        | QPSK 25_13 | 20525/836.5     | 0.743          | 0.512           | -0.08            | 22.42                | 23.50              | 1.282          | 0.953                  |
| L74                  | Left side           | 10        | QPSK 25_13 | 20525/836.5     | 0.284          | 0.161           | -0.12            | 22.42                | 23.50              | 1.282          | 0.364                  |
| L75                  | Bottom side         | 10        | QPSK 25_13 | 20525/836.5     | 0.286          | 0.203           | 0.17             | 22.42                | 23.50              | 1.282          | 0.367                  |
| L76                  | Front side          | 10        | QPSK 25_13 | 20450/829       | 0.697          | 0.455           | 0.03             | 22.40                | 23.50              | 1.288          | 0.898                  |
| L77                  | Front side          | 10        | QPSK 25_13 | 20600/844       | 0.829          | 0.514           | -0.02            | 22.21                | 23.50              | 1.346          | 1.116                  |
| L78                  | Back side           | 10        | QPSK 25_13 | 20450/829       | 0.821          | 0.555           | 0.03             | 22.40                | 23.50              | 1.288          | 1.058                  |
| L79                  | Back side           | 10        | QPSK 25_13 | 20600/844       | 0.668          | 0.469           | 0.16             | 22.21                | 23.50              | 1.346          | 0.899                  |
| Hotspot 10mm (50%RB) |                     |           |            |                 |                |                 |                  |                      |                    |                |                        |
| L80                  | Front side          | 10        | QPSK 50_0  | 20525/836.5     | 0.702          | 0.463           | -0.05            | 22.81                | 23.50              | 1.172          | 0.823                  |
| L81                  | Back side           | 10        | QPSK 50_0  | 20525/836.5     | 0.733          | 0.508           | 0.02             | 22.81                | 23.50              | 1.172          | 0.859                  |

Table 11: SAR of LTE Band 5.

| Test Position | Channel/<br>Frequency | Measured SAR<br>(1g) | 1 <sup>st</sup><br>Repeated | Ratio | 2 <sup>nd</sup><br>Repeated | 3 <sup>rd</sup><br>Repeated |
|---------------|-----------------------|----------------------|-----------------------------|-------|-----------------------------|-----------------------------|
|               | (MHz)                 |                      | SAR (1g)                    |       | SAR (1g)                    | SAR (1g)                    |
| Front side    | 20600/844             | 1.040                | 0.912                       | 1.14  | N/A                         | N/A                         |

## 15.9 SAR Measurement Result of LTE Band 17

| Test NO.             | Test position | BW. (MHz) | Mode       | Ch./Freq. (MHz) | SAR (W/kg) 1-g | SAR (W/kg) 10-g | Power Drift (dB) | Conducted Power(dBm) | Tune up Limit(dBm) | Scaling Factor | Reported 1g SAR (W/kg) |
|----------------------|---------------|-----------|------------|-----------------|----------------|-----------------|------------------|----------------------|--------------------|----------------|------------------------|
| Hotspot 10mm (1RB)   |               |           |            |                 |                |                 |                  |                      |                    |                |                        |
| L48                  | Front side    | 10        | QPSK 1_25  | 23790/710       | 0.480          | 0.318           | -0.10            | 22.95                | 24.00              | 1.274          | 0.611                  |
| L49                  | Back side     | 10        | QPSK 1_25  | 23790/710       | 0.482          | 0.345           | 0.00             | 22.95                | 24.00              | 1.274          | 0.614                  |
| L50                  | Left side     | 10        | QPSK 1_25  | 23790/710       | 0.301          | 0.180           | -0.14            | 22.95                | 24.00              | 1.274          | 0.383                  |
| L53                  | Bottom side   | 10        | QPSK 1_25  | 23790/710       | 0.493          | 0.339           | 0.00             | 22.95                | 24.00              | 1.274          | <b>0.628</b>           |
| Hotspot 10mm (50%RB) |               |           |            |                 |                |                 |                  |                      |                    |                |                        |
| L54                  | Front side    | 10        | QPSK 25_13 | 23790/710       | 0.364          | 0.247           | -0.19            | 21.40                | 23.00              | 1.445          | 0.526                  |
| L55                  | Back side     | 10        | QPSK 25_13 | 23790/710       | 0.369          | 0.252           | 0.02             | 21.40                | 23.00              | 1.445          | 0.533                  |
| L56                  | Left side     | 10        | QPSK 25_13 | 23790/710       | 0.215          | 0.131           | 0.05             | 21.40                | 23.00              | 1.445          | 0.311                  |
| L59                  | Bottom side   | 10        | QPSK 25_13 | 23790/710       | 0.381          | 0.266           | -0.06            | 21.40                | 23.00              | 1.445          | 0.551                  |

Table 12: SAR of LTE Band 17.

## 15.10 SAR Measurement Result of WIFI 2.4G

| Test position | Mode    | Ch./Freq. (MHz) | Date Rate | SAR (W/kg) 1-g | SAR (W/kg) 10-g | Power Drift (dB) | Duty Cycle | Duty Cycle Scaling Factor | Conducted Power(dBm) | Tune up Limit(dBm) | Scaling Factor | Reported 1g SAR (W/kg) |
|---------------|---------|-----------------|-----------|----------------|-----------------|------------------|------------|---------------------------|----------------------|--------------------|----------------|------------------------|
| Hotspot 10mm  |         |                 |           |                |                 |                  |            |                           |                      |                    |                |                        |
| Front side    | 802.11b | 6/2437          | 1M        | 0.006          | 0.001           | 0.14             | 97.62%     | 1.024                     | 12.59                | 13.00              | 1.099          | 0.006                  |
| Back side     | 802.11b | 6/2437          | 1M        | 0.016          | 0.007           | -0.03            | 97.62%     | 1.024                     | 12.59                | 13.00              | 1.099          | 0.018                  |
| Right side    | 802.11b | 6/2437          | 1M        | 0.006          | 0.003           | -0.05            | 97.62%     | 1.024                     | 12.59                | 13.00              | 1.099          | 0.007                  |
| Top side      | 802.11b | 6/2437          | 1M        | 0.032          | 0.015           | -0.16            | 97.62%     | 1.024                     | 12.59                | 13.00              | 1.099          | <b>0.036</b>           |

Table 13: SAR of WIFI 2.4G.

## 16 Simultaneous Transmission Analysis

The Simultaneous Transmission Possibilities of this device are as below:

| NO. | Simultaneous TX Combination | Hotspot |
|-----|-----------------------------|---------|
| 1   | WWAN+WIFI 2.4G              | Yes     |

**Note:**

1. The device does not support DTM function.
2. Per KDB 447498 D01, simultaneous transmission SAR is compliant if,
  - i) 1g Scalar SAR summation  $< 1.6\text{W/kg}$  and 10g Scalar SAR summation  $< 4.0\text{W/kg}$ .
  - ii)  $\text{SPLSR} = (\text{SAR}_1 + \text{SAR}_2)^{1.5} / (\text{min. separation distance, mm})$ , and the peak separation distance is determined from the square root of  $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$ , where  $(x_1, y_1, z_1)$  and  $(x_2, y_2, z_2)$  are the coordinates of the extrapolated peak SAR locations in the zoom scan.
  - iii) If  $\text{SPLSR} \leq 0.04$  for 1g SAR and  $\text{SPLSR} \leq 0.10$  for 10g SAR, simultaneously transmission SAR measurement is not necessary.
  - iv) Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR  $< 1.6\text{W/kg}$  and 10g SAR  $< 4.0\text{W/kg}$ .

## 16.1 Simultaneous Transmission SAR Summary

| Band     | Test position | SAR <sub>max</sub> (W/kg) |           | Summed SAR   |
|----------|---------------|---------------------------|-----------|--------------|
|          |               | Main Ant                  | WiFi 2.4G |              |
|          |               | 1                         | 2         |              |
| GSM850   | Front side    | 0.707                     | 0.006     | 0.713        |
|          | Back side     | 0.519                     | 0.018     | 0.537        |
|          | Left side     | 0.214                     | /         | 0.214        |
|          | Right side    | /                         | 0.007     | 0.007        |
|          | Top side      | /                         | 0.036     | 0.036        |
|          | Bottom side   | 0.266                     | /         | 0.266        |
| GSM1900  | Front side    | 0.602                     | 0.006     | 0.608        |
|          | Back side     | 0.537                     | 0.018     | 0.555        |
|          | Left side     | 0.306                     | /         | 0.306        |
|          | Right side    | /                         | 0.007     | 0.007        |
|          | Top side      | /                         | 0.036     | 0.036        |
|          | Bottom side   | 0.489                     | /         | 0.489        |
| WCDMA B2 | Front side    | 1.046                     | 0.006     | 1.052        |
|          | Back side     | 0.886                     | 0.018     | 0.904        |
|          | Left side     | 0.419                     | /         | 0.419        |
|          | Right side    | /                         | 0.007     | 0.007        |
|          | Top side      | /                         | 0.036     | 0.036        |
|          | Bottom side   | 0.766                     | /         | 0.766        |
| WCDMA B4 | Front side    | 1.131                     | 0.006     | 1.137        |
|          | Back side     | 0.985                     | 0.018     | 1.003        |
|          | Left side     | 0.268                     | /         | 0.268        |
|          | Right side    | /                         | 0.007     | 0.007        |
|          | Top side      | /                         | 0.036     | 0.036        |
|          | Bottom side   | 0.574                     | /         | 0.574        |
| WCDMA B5 | Front side    | 1.033                     | 0.006     | 1.039        |
|          | Back side     | 0.949                     | 0.018     | 0.967        |
|          | Left side     | 0.485                     | /         | 0.485        |
|          | Right side    | /                         | 0.007     | 0.007        |
|          | Top side      | /                         | 0.036     | 0.036        |
|          | Bottom side   | 0.390                     | /         | 0.390        |
| LTE B2   | Front side    | 0.930                     | 0.006     | 0.936        |
|          | Back side     | 0.813                     | 0.018     | 0.831        |
|          | Left side     | 0.442                     | /         | 0.442        |
|          | Right side    | /                         | 0.007     | 0.007        |
|          | Top side      | /                         | 0.036     | 0.036        |
|          | Bottom side   | 0.828                     | /         | 0.828        |
| LTE B4   | Front side    | 1.035                     | 0.006     | 1.041        |
|          | Back side     | 1.054                     | 0.018     | 1.072        |
|          | Left side     | 0.417                     | /         | 0.417        |
|          | Right side    | /                         | 0.007     | 0.007        |
|          | Top side      | /                         | 0.036     | 0.036        |
|          | Bottom side   | 0.593                     | /         | 0.593        |
| LTE B5   | Front side    | 1.259                     | 0.006     | <b>1.265</b> |
|          | Back side     | 1.118                     | 0.018     | 1.136        |
|          | Left side     | 0.463                     | /         | 0.463        |
|          | Right side    | /                         | 0.007     | 0.007        |
|          | Top side      | /                         | 0.036     | 0.036        |
|          | Bottom side   | 0.467                     | /         | 0.467        |
| LTE B17  | Front side    | 0.611                     | 0.006     | 0.617        |
|          | Back side     | 0.614                     | 0.018     | 0.632        |
|          | Left side     | 0.383                     | /         | 0.383        |
|          | Right side    | /                         | 0.007     | 0.007        |
|          | Top side      | /                         | 0.036     | 0.036        |
|          | Bottom side   | 0.628                     | /         | 0.628        |

## **17 Measurement Uncertainty**

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, 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.

## **18 Calibration Certificate**

Please see the Appendix C

## **19 Test Setup Photos**

Please see the Appendix D

## **Appendix A: System Check Plots**

## **Appendix B: SAR Test Plots**

## **Appendix C: Calibration certificate**

## **Appendix D: Test Setup Photos**

**--- The End ---**

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