



No.I22Z61733-SEM01



# SAR TEST REPORT

No. I22Z61733-SEM01

For

**BLU Products,Inc.**

**Smart Phone**

**Model Name: STUDIO MINI 2023**

with

**Hardware Version: V1.0**

**Software Version: BLU\_ST1020T\_V12.0.01.39\_ASW\_20221109\_0005**

**FCC ID: YHLBLUSTMN22**

**Issued Date: 2022-11-16**

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The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S.Government.

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No.I22Z61733-SEM01

## **REPORT HISTORY**

| <b>Report Number</b> | <b>Revision</b> | <b>Issue Date</b> | <b>Description</b>              |
|----------------------|-----------------|-------------------|---------------------------------|
| I22Z61733-SEM01      | Rev.0           | 2022-11-16        | Initial creation of test report |

## TABLE OF CONTENT

|                                                                        |           |
|------------------------------------------------------------------------|-----------|
| <b>1 TEST LABORATORY .....</b>                                         | <b>5</b>  |
| 1.1 TESTING LOCATION .....                                             | 5         |
| 1.2 TESTING ENVIRONMENT.....                                           | 5         |
| 1.3 PROJECT DATA .....                                                 | 5         |
| 1.4 SIGNATURE.....                                                     | 5         |
| <b>2 STATEMENT OF COMPLIANCE .....</b>                                 | <b>6</b>  |
| <b>3 CLIENT INFORMATION .....</b>                                      | <b>8</b>  |
| 3.1 APPLICANT INFORMATION .....                                        | 8         |
| 3.2 MANUFACTURER INFORMATION .....                                     | 8         |
| <b>4 EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE) .....</b> | <b>9</b>  |
| 4.1 ABOUT EUT .....                                                    | 9         |
| 4.2 INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST .....          | 10        |
| 4.3 INTERNAL IDENTIFICATION OF AE USED DURING THE TEST .....           | 10        |
| <b>5 TEST METHODOLOGY .....</b>                                        | <b>11</b> |
| 5.1 APPLICABLE LIMIT REGULATIONS .....                                 | 11        |
| 5.2 APPLICABLE MEASUREMENT STANDARDS .....                             | 11        |
| <b>6 SPECIFIC ABSORPTION RATE (SAR).....</b>                           | <b>12</b> |
| 6.1 INTRODUCTION.....                                                  | 12        |
| 6.2 SAR DEFINITION .....                                               | 12        |
| <b>7 TISSUE SIMULATING LIQUIDS .....</b>                               | <b>13</b> |
| 7.1 TARGETS FOR TISSUE SIMULATING LIQUID.....                          | 13        |
| 7.2 DIELECTRIC PERFORMANCE .....                                       | 13        |
| <b>8 SYSTEM VERIFICATION .....</b>                                     | <b>17</b> |
| 8.1 SYSTEM SETUP.....                                                  | 17        |
| 8.2 SYSTEM VERIFICATION.....                                           | 18        |
| <b>9 MEASUREMENT PROCEDURES .....</b>                                  | <b>19</b> |
| 9.1 TESTS TO BE PERFORMED .....                                        | 19        |
| 9.2 GENERAL MEASUREMENT PROCEDURE.....                                 | 21        |
| 9.3 WCDMA MEASUREMENT PROCEDURES FOR SAR .....                         | 22        |
| 9.4 SAR MEASUREMENT FOR LTE.....                                       | 23        |
| 9.5 BLUETOOTH & WI-FI MEASUREMENT PROCEDURES FOR SAR .....             | 25        |
| 9.6 POWER DRIFT .....                                                  | 25        |
| <b>10 AREA SCAN BASED 1-G SAR.....</b>                                 | <b>26</b> |
| 10.1 REQUIREMENT OF KDB.....                                           | 26        |
| 10.2 FAST SAR ALGORITHMS .....                                         | 26        |

|                                                                                 |            |
|---------------------------------------------------------------------------------|------------|
| <b>11 CONDUCTED OUTPUT POWER.....</b>                                           | <b>27</b>  |
| 11.1 GSM MEASUREMENT RESULT .....                                               | 27         |
| 11.2 WCDMA MEASUREMENT RESULT .....                                             | 31         |
| 11.3 LTE MEASUREMENT RESULT .....                                               | 35         |
| 11.4 Wi-Fi AND BT MEASUREMENT RESULT .....                                      | 77         |
| <b>12 SIMULTANEOUS TX SAR CONSIDERATIONS.....</b>                               | <b>79</b>  |
| 12.1 INTRODUCTION.....                                                          | 79         |
| 12.2 TRANSMIT ANTENNA SEPARATION DISTANCES.....                                 | 79         |
| 12.3 SAR MEASUREMENT POSITIONS .....                                            | 80         |
| <b>13 EVALUATION OF SIMULTANEOUS.....</b>                                       | <b>80</b>  |
| <b>14 SAR TEST RESULT .....</b>                                                 | <b>83</b>  |
| 14.1 SAR RESULTS FOR 2G/3G/4G .....                                             | 84         |
| 14.2 WLAN EVALUATION FOR 2.4G .....                                             | 97         |
| 14.3 WLAN EVALUATION FOR BT.....                                                | 99         |
| <b>15 SAR MEASUREMENT VARIABILITY.....</b>                                      | <b>102</b> |
| <b>16 MEASUREMENT UNCERTAINTY .....</b>                                         | <b>103</b> |
| 16.1 MEASUREMENT UNCERTAINTY FOR NORMAL SAR TESTS (300MHz~3GHz).....            | 103        |
| 16.2 MEASUREMENT UNCERTAINTY FOR NORMAL SAR TESTS (3~6GHz) .....                | 104        |
| 16.3 MEASUREMENT UNCERTAINTY FOR FAST SAR TESTS (300MHz~3GHz).....              | 105        |
| 16.4 MEASUREMENT UNCERTAINTY FOR FAST SAR TESTS (3~6GHz) .....                  | 106        |
| <b>17 MAIN TEST INSTRUMENTS.....</b>                                            | <b>108</b> |
| <b>ANNEX A GRAPH RESULTS.....</b>                                               | <b>109</b> |
| <b>ANNEX B SYSTEM VERIFICATION RESULTS .....</b>                                | <b>143</b> |
| <b>ANNEX C SAR MEASUREMENT SETUP.....</b>                                       | <b>150</b> |
| <b>ANNEX D POSITION OF THE WIRELESS DEVICE IN RELATION TO THE PHANTOM .....</b> | <b>156</b> |
| <b>ANNEX E EQUIVALENT MEDIA RECIPES.....</b>                                    | <b>159</b> |
| <b>ANNEX F SYSTEM VALIDATION .....</b>                                          | <b>160</b> |
| <b>ANNEX G PROBE CALIBRATION CERTIFICATE .....</b>                              | <b>161</b> |
| <b>ANNEX H DIPOLE CALIBRATION CERTIFICATE .....</b>                             | <b>170</b> |
| <b>ANNEX I ACCREDITATION CERTIFICATE .....</b>                                  | <b>206</b> |

## 1 Test Laboratory

### 1.1 Testing Location

|               |                                                                            |
|---------------|----------------------------------------------------------------------------|
| Company Name: | CTTL                                                                       |
| Address:      | No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191. |

### 1.2 Testing Environment

|                             |                |
|-----------------------------|----------------|
| Temperature:                | 18°C~25°C,     |
| Relative humidity:          | 30%~ 70%       |
| Ground system resistance:   | < 0.5 $\Omega$ |
| Ambient noise & Reflection: | < 0.012 W/kg   |

### 1.3 Project Data

|                     |                   |
|---------------------|-------------------|
| Project Leader:     | Qi Dianyuan       |
| Test Engineer:      | Yao Juming        |
| Testing Start Date: | October 20, 2022  |
| Testing End Date:   | November 11, 2022 |

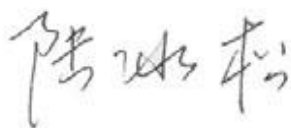
### 1.4 Signature



Yao Juming  
(Prepared this test report)



Qi Dianyuan  
(Reviewed this test report)



Lu Bingsong  
Deputy Director of the laboratory  
(Approved this test report)

## 2 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for BLU Products, Inc. Smart Phone, STUDIO MINI 2023 is as follows:

**Table 2.1: Highest Reported SAR (1g)**

| Technology Band | Head<br>(Separation<br>Distance<br>0mm) | Hotspot<br>(Separation<br>Distance<br>10mm) | Body-Worn<br>(Separation<br>Distance<br>15mm) | Phablet<br>SAR(10g)<br>(Separation<br>Distance<br>0mm) | Equipment<br>Class |
|-----------------|-----------------------------------------|---------------------------------------------|-----------------------------------------------|--------------------------------------------------------|--------------------|
| GSM850          | <b>0.34</b>                             | <b>0.66</b>                                 | <b>0.66</b>                                   | /                                                      | PCE                |
| GSM1900         | <b>0.15</b>                             | <b>1.24</b>                                 | <b>0.81</b>                                   | <b>2.25</b>                                            |                    |
| WCDMA1900       | <b>0.22</b>                             | <b>1.24</b>                                 | <b>0.97</b>                                   | <b>3.07</b>                                            |                    |
| WCDMA1700       | <b>0.17</b>                             | <b>0.97</b>                                 | <b>0.88</b>                                   | <b>2.69</b>                                            |                    |
| WCDMA 850       | <b>0.36</b>                             | <b>0.52</b>                                 | <b>0.52</b>                                   | /                                                      |                    |
| LTE Band12      | <b>0.26</b>                             | <b>0.42</b>                                 | <b>0.42</b>                                   | /                                                      |                    |
| LTE Band25      | <b>0.18</b>                             | <b>1.18</b>                                 | <b>1.08</b>                                   | <b>3.17</b>                                            |                    |
| LTE Band26      | <b>0.42</b>                             | <b>0.62</b>                                 | <b>0.62</b>                                   | /                                                      |                    |
| LTE Band41-PC3  | <b>0.12</b>                             | <b>0.59</b>                                 | <b>0.59</b>                                   | /                                                      |                    |
| LTE Band41-PC2  | <b>0.17</b>                             | <b>1.12</b>                                 | <b>1.12</b>                                   | /                                                      |                    |
| LTE Band66      | <b>0.19</b>                             | <b>1.19</b>                                 | <b>0.73</b>                                   | <b>3.16</b>                                            |                    |
| LTE Band71      | <b>0.26</b>                             | <b>0.48</b>                                 | <b>0.48</b>                                   | /                                                      |                    |
| WLAN 2.4GHz     | <b>1.12</b>                             | <b>0.61</b>                                 | <b>0.25</b>                                   | <b>1.28</b>                                            | DTS                |
| BT              | <b>0.07</b>                             | <b>0.02</b>                                 | <b>0.02</b>                                   | /                                                      | DSS                |

The SAR values found for the Mobile Phone are below the maximum recommended levels of 1.6 W/kg as averaged over any 1g tissue according to the ANSI C95.1-1992.

For body operation, this device has been tested and meets FCC RF exposure guidelines when used with any accessory that contains no metal and which provides a minimum separation distance of 10 mm between this device and the body of the user. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output.

The measurement together with the test system set-up is described in annex C of this test report. A detailed description of the equipment under test can be found in chapter 4 of this test report. The highest reported SAR value is obtained at the case of **(Table 2.1)**, and the values are:

**Head: 1.12 W/kg (1g)**

**Body: 1.24 W/kg (1g)**

Remark:

This device supports both LTE B2/B5/B4 and LTE B25/B26/B66. Since the supported frequency span for LTE B2/B5/B4 falls completely within the supports frequency span for LTE B25/B26/B66, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B25/B26/B66.

**Table 2.2: The sum of SAR values for Main antenna + WiFi-2.4G**

|                                   | Position                   | Main antenna | WiFi-2.4G | Sum         |
|-----------------------------------|----------------------------|--------------|-----------|-------------|
| <b>Highest SAR value for Head</b> | Left head, Touch (LTE B26) | 0.38         | 1.12      | <b>1.50</b> |
| <b>Highest SAR value for Body</b> | Rear 10mm (WCDMA B4)       | 0.97         | 0.61      | <b>1.58</b> |

**Table 2.3: The sum of SAR values for Main antenna +BT**

|                                   | Position                   | Main antenna | BT    | Sum         |
|-----------------------------------|----------------------------|--------------|-------|-------------|
| <b>Highest SAR value for Head</b> | Right head, Touch (GSM850) | 0.42         | <0.01 | <b>0.42</b> |
| <b>Highest SAR value for Body</b> | Rear 10mm (GSM1900)        | 1.24         | <0.01 | <b>1.24</b> |
|                                   | Rear 10mm (WCDMA B2)       | 1.24         | <0.01 | <b>1.24</b> |

**Conclusion:**

According to the above tables, the sum of reported SAR values is <1.6W/kg. So the simultaneous transmission SAR with volume scans is not required.

According to the above tables, the highest sum of reported SAR values is **1.58 W/kg (1g)**. The detail for simultaneous transmission consideration is described in chapter 13.

### 3 Client Information

#### 3.1 Applicant Information

|                 |                                            |
|-----------------|--------------------------------------------|
| Company Name:   | BLU Products,Inc.                          |
| Address/Post:   | 10814 NW 33rd St # 100 Doral, FL 33172,USA |
| Contact Person: | Zeng wei                                   |
| Contact Email:  | zwei@ctasiasz.com                          |
| Telephone:      | 305.715.7171                               |
| Fax:            | 305.436.8819                               |

#### 3.2 Manufacturer Information

|                 |                                            |
|-----------------|--------------------------------------------|
| Company Name:   | BLU Products,Inc.                          |
| Address/Post:   | 10814 NW 33rd St # 100 Doral, FL 33172,USA |
| Contact Person: | Zeng wei                                   |
| Contact Email:  | zwei@ctasiasz.com                          |
| Telephone:      | 305.715.7171                               |
| Fax:            | 305.436.8819                               |

## 4 Equipment Under Test (EUT) and Ancillary Equipment (AE)

### 4.1 About EUT

|                                     |                                                                                    |
|-------------------------------------|------------------------------------------------------------------------------------|
| Description:                        | Smart Phone                                                                        |
| Model name:                         | STUDIO MINI 2023                                                                   |
| Operating mode(s):                  | GSM8501900,<br>WCDMA B2/B4/B5<br>LTE Band 2/4/5/12/25/26/41/66/71<br>BT, Wi-Fi2.4G |
| Tested Tx Frequency:                | 824 – 849 MHz (GSM 850)                                                            |
|                                     | 1850 – 1910 MHz (GSM 1900)                                                         |
|                                     | 824 – 849 MHz (WCDMA 850 Band V)                                                   |
|                                     | 1850 – 1910 MHz (WCDMA1900 Band II)                                                |
|                                     | 1710-1755 MHz (WCDMA1700 Band IV)                                                  |
|                                     | 699.7 – 715.3 MHz (LTE Band 12)                                                    |
|                                     | 1850.7 – 1914.3 MHz (LTE Band 25)                                                  |
|                                     | 814.7 – 848.3 MHz (LTE Band 26)                                                    |
|                                     | 2498.5 – 2687.5 MHz (LTE Band41)                                                   |
|                                     | 1710.7 –1779.3 MHz (LTE Band 66)                                                   |
|                                     | 665.5 –695.5 MHz (LTE Band 71)                                                     |
|                                     | 2412 – 2462 MHz (Wi-Fi 2.4G)                                                       |
|                                     | 2400 – 2483.5 MHz (Bluetooth)                                                      |
| GPRS/EGPRS Multislot Class:         | 12                                                                                 |
| Test device production information: | Production unit                                                                    |
| Device type:                        | Portable device                                                                    |
| Antenna type:                       | Integrated antenna                                                                 |
| Hotspot mode:                       | Support                                                                            |

**4.2 Internal Identification of EUT used during the test**

| EUT ID* | IMEI            | HW Version | SW Version                                |
|---------|-----------------|------------|-------------------------------------------|
| EUT1    | 353587400015037 | V1.0       | BLU_ST1020T_V12.0.01.39_ASW_20221109_0005 |
| EUT2    | 353587400016159 | V1.0       | BLU_ST1020T_V12.0.01.39_ASW_20221109_0005 |
| EUT3    | 353587400011705 | V1.0       | BLU_ST1020T_V12.0.01.39_ASW_20221109_0005 |
| EUT4    | 353587400016365 | V1.0       | BLU_ST1020T_V12.0.01.39_ASW_20221109_0005 |

\*EUT ID: is used to identify the test sample in the lab internally.

**Note:** It is performed to test SAR with the EUT1~3 and conducted power with the EUT4.

**4.3 Internal Identification of AE used during the test**

| AE ID* | Description | Model       | SN | Manufacturer                          |
|--------|-------------|-------------|----|---------------------------------------|
| AE1    | Battery     | C716204250T | /  | Guangdong Fenghua New Energy Co.,Ltd. |

\*AE ID: is used to identify the test sample in the lab internally.

## 5 TEST METHODOLOGY

### 5.1 Applicable Limit Regulations

**ANSI C95.1–1992:**IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

It specifies the maximum exposure limit of **1.6 W/kg** as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

### 5.2 Applicable Measurement Standards

**IEEE 1528–2013:** Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.

**KDB447498 D01: General RF Exposure Guidance v06:** Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

**KDB648474 D04 Handset SAR v01r03:** SAR Evaluation Considerations for Wireless Handsets.

**KDB941225 D01 SAR test for 3G devices v03r01:** SAR Measurement Procedures for 3G Devices

**KDB941225 D05 SAR for LTE Devices v02r05:** SAR Evaluation Considerations for LTE Devices

**KDB941225 D06 Hotspot Mode SAR v02r01:** SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities

**KDB248227 D01 802.11 Wi-Fi SAR v02r02:** SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS

**KDB865664 D01 SAR measurement 100 MHz to 6 GHz v01r04:** SAR Measurement Requirements for 100 MHz to 6 GHz.

**KDB865664 D02 RF Exposure Reporting v01r02:** RF Exposure Compliance Reporting and Documentation Considerations

## 6 Specific Absorption Rate (SAR)

### 6.1 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.

### 6.2 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 measurement can be either related to the temperature elevation in tissue by

$$SAR = c \left( \frac{\delta T}{\delta t} \right)$$

Where:  $C$  is the specific heat capacity,  $\delta T$  is the temperature rise and  $\delta t$  is the exposure duration, or related to the electrical field in the tissue by

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

Where:  $\sigma$  is the conductivity of the tissue,  $\rho$  is the mass density of tissue and  $E$  is the RMS electrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

## 7 Tissue Simulating Liquids

### 7.1 Targets for tissue simulating liquid

Table 7.1: Targets for tissue simulating liquid

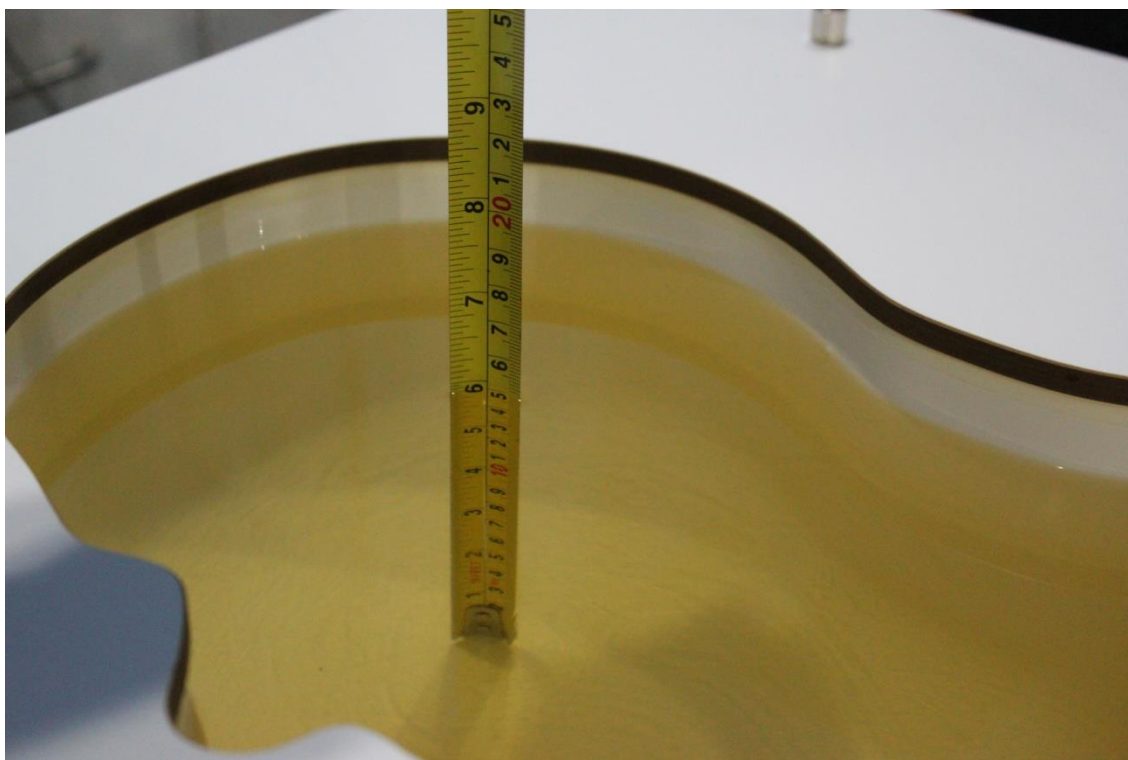
| Frequency(MHz) | Liquid Type | Conductivity( $\sigma$ ) | $\pm 5\%$ Range | Permittivity( $\epsilon$ ) | $\pm 5\%$ Range |
|----------------|-------------|--------------------------|-----------------|----------------------------|-----------------|
| 750            | Head        | 0.89                     | 0.85~0.93       | 41.94                      | 39.8~44.0       |
| 900            | Head        | 0.97                     | 0.92~1.02       | 41.50                      | 39.40~43.60     |
| 1800           | Head        | 1.40                     | 1.33~1.47       | 40.00                      | 38.00~42.00     |
| 1900           | Head        | 1.40                     | 1.33~1.47       | 40.00                      | 38.00~42.00     |
| 2450           | Head        | 1.80                     | 1.71~1.89       | 39.20                      | 37.30~41.10     |
| 2600           | Head        | 1.96                     | 1.86~2.06       | 39.01                      | 37.06~40.96     |

### 7.2 Dielectric Performance

Table 7.2: Dielectric Performance of Tissue Simulating Liquid

| Measurement Date<br>yyyy/mm/dd | Frequency | Type | Permittivity<br>$\epsilon$ | Drift<br>(%) | Conductivity<br>$\sigma$ (S/m) | Drift<br>(%) |
|--------------------------------|-----------|------|----------------------------|--------------|--------------------------------|--------------|
| 2022-10-20                     | 750MHz    | Head | 42.92                      | 2.34         | 0.877                          | -1.46        |
| 2022-10-22                     | 900MHz    | Head | 40.97                      | -1.28        | 0.955                          | -1.55        |
| 2022-10-26                     | 1800MHz   | Head | 38.96                      | -2.60        | 1.403                          | 0.21         |
| 2022-11-5                      | 1900MHz   | Head | 39.62                      | -0.95        | 1.439                          | 2.79         |
| 2022-11-8                      | 2450MHz   | Head | 38.64                      | -1.43        | 1.841                          | 2.28         |
| 2022-11-11                     | 2600MHz   | Head | 38.74                      | -0.69        | 1.974                          | 0.71         |

Note: The liquid temperature is 22.0°C



**Picture 7-1 Liquid depth in the Head Phantom (750MHz)**



**Picture 7-2 Liquid depth in the Head Phantom (835 MHz)**



**Picture 7-3 Liquid depth in the Head Phantom (1900 MHz)**



**Picture 7-4 Liquid depth in the Head Phantom (2450MHz)**

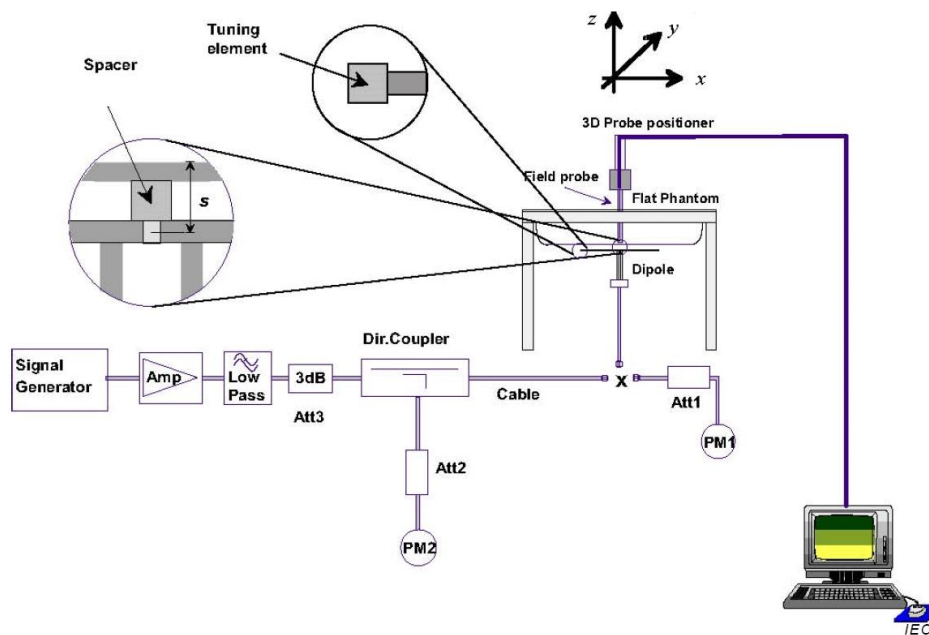


**Picture 7-5 Liquid depth in the Head Phantom (2600 MHz)**

## 8 System verification

### 8.1 System Setup

In the simplified setup for system evaluation, the DUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:



Picture 8.1 System Setup for System Evaluation



Picture 8.2 Photo of Dipole Setup

## 8.2 System Verification

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device.

The system verification results are required that the area scan estimated 1-g SAR is within 3% of the zoom scan 1-g SAR. The details are presented in annex B.

**Table 8.1: System Verification of Head**

| Measurement Date<br>(yyyy-mm-dd) | Frequency | Target value<br>(W/kg) |                | Measured value<br>(W/kg) |                | Deviation       |                |
|----------------------------------|-----------|------------------------|----------------|--------------------------|----------------|-----------------|----------------|
|                                  |           | 10 g<br>Average        | 1 g<br>Average | 10 g<br>Average          | 1 g<br>Average | 10 g<br>Average | 1 g<br>Average |
| 2022-10-20                       | 750MHz    | 5.64                   | 8.63           | 5.40                     | 8.32           | -4.26%          | -3.59%         |
| 2022-10-22                       | 900MHz    | 7.05                   | 11.00          | 6.84                     | 10.88          | -2.98%          | -1.09%         |
| 2022-10-26                       | 1800MHz   | 20.20                  | 38.80          | 20.48                    | 39.48          | 1.39%           | 1.75%          |
| 2022-11-5                        | 1900MHz   | 20.70                  | 39.70          | 20.60                    | 39.52          | -0.48%          | -0.45%         |
| 2022-11-8                        | 2450MHz   | 24.9                   | 52.7           | 25.1                     | 53.5           | 0.88%           | 1.48%          |
| 2022-11-11                       | 2600MHz   | 25.2                   | 55.8           | 25.0                     | 55.6           | -0.63%          | -0.29%         |

## 9 Measurement Procedures

### 9.1 Tests to be performed

In order to determine the highest value of the peak spatial-average SAR of a handset, all device positions, configurations and operational modes shall be tested for each frequency band according to steps 1 to 3 below. A flowchart of the test process is shown in picture 9.1.

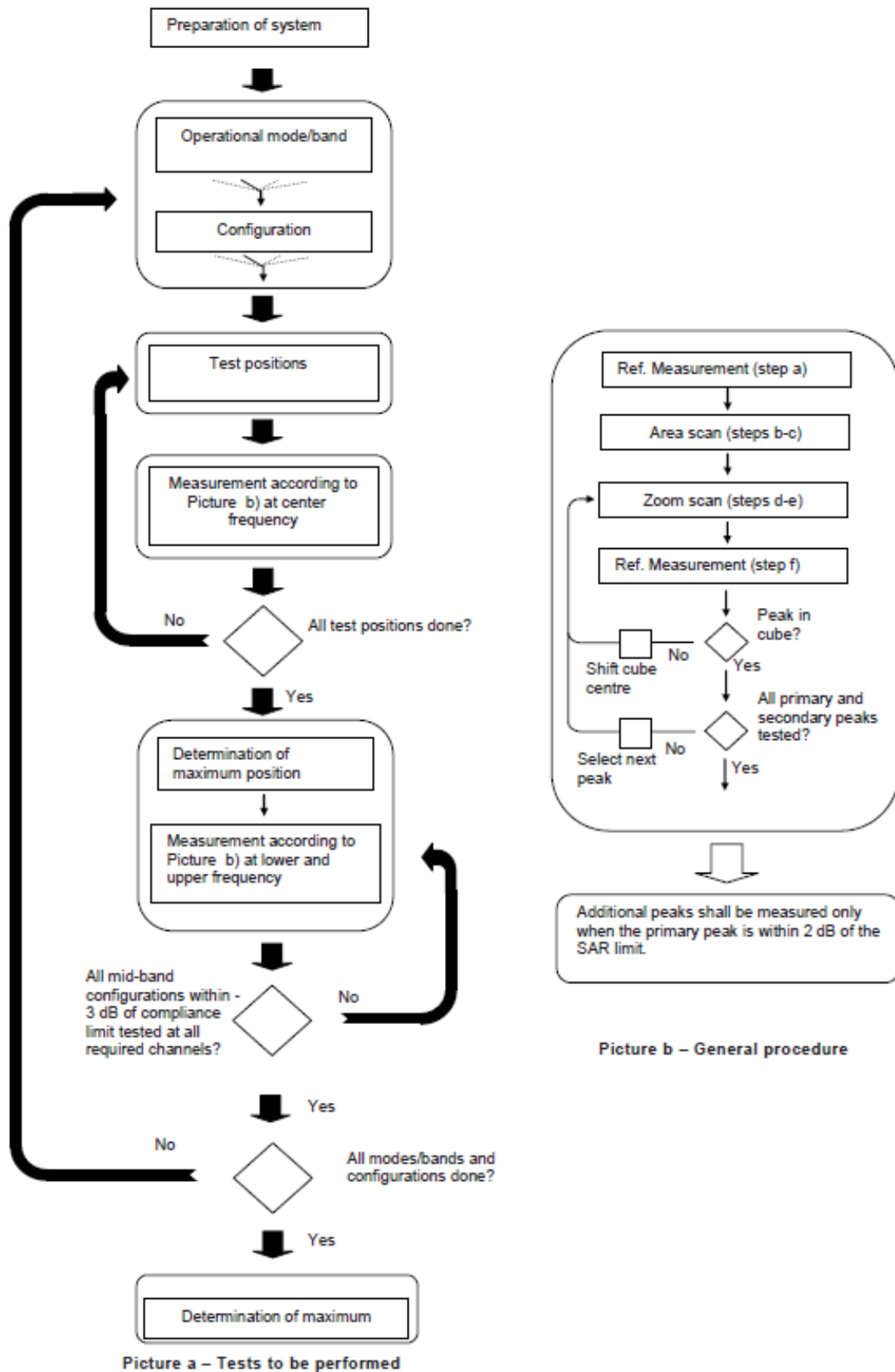
**Step 1:** The tests described in 9.2 shall be performed at the channel that is closest to the centre of the transmit frequency band ( $f_c$ ) for:

- a) all device positions (cheek and tilt, for both left and right sides of the SAM phantom, as described in annex D),
- b) all configurations for each device position in a), e.g., antenna extended and retracted, and
- c) all operational modes, e.g., analogue and digital, for each device position in a) and configuration in b) in each frequency band.

If more than three frequencies need to be tested according to 11.1 (i.e.,  $N_c > 3$ ), then all frequencies, configurations and modes shall be tested for all of the above test conditions.

**Step 2:** For the condition providing highest peak spatial-average SAR determined in Step 1, perform all tests described in 9.2 at all other test frequencies, i.e., lowest and highest frequencies. In addition, for all other conditions (device position, configuration and operational mode) where the peak spatial-average SAR value determined in Step 1 is within 3 dB of the applicable SAR limit, it is recommended that all other test frequencies shall be tested as well.

**Step 3:** Examine all data to determine the highest value of the peak spatial-average SAR found in Steps 1 to 2.



Picture 9.1Block diagram of the tests to be performed

## 9.2 General Measurement Procedure

The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements and fully documented in SAR reports to qualify for TCB approval. Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std 1528-2003. The results should be documented as part of the system validation records and may be requested to support test results when all the measurement parameters in the following table are not satisfied.

|                                                                                                                                                                                                                                                                                                      |                                    |                                                                                      | $\leq 3$ GHz                                                                                                                                                                                                                                                           | $> 3$ GHz                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface                                                                                                                                                                                               |                                    |                                                                                      | $5 \pm 1$ mm                                                                                                                                                                                                                                                           | $\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm                            |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location                                                                                                                                                                                                            |                                    |                                                                                      | $30^\circ \pm 1^\circ$                                                                                                                                                                                                                                                 | $20^\circ \pm 1^\circ$                                                        |
| Maximum area scan spatial resolution: $\Delta x_{Area}$ , $\Delta y_{Area}$                                                                                                                                                                                                                          |                                    |                                                                                      | $\leq 2$ GHz: $\leq 15$ mm<br>2 – 3 GHz: $\leq 12$ mm                                                                                                                                                                                                                  | 3 – 4 GHz: $\leq 12$ mm<br>4 – 6 GHz: $\leq 10$ mm                            |
|                                                                                                                                                                                                                                                                                                      |                                    |                                                                                      | When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device. |                                                                               |
| Maximum zoom scan spatial resolution: $\Delta x_{Zoom}$ , $\Delta y_{Zoom}$                                                                                                                                                                                                                          |                                    |                                                                                      | $\leq 2$ 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 |
| Note: $\delta$ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.                                                                                                                                                    |                                    |                                                                                      |                                                                                                                                                                                                                                                                        |                                                                               |
| * When zoom scan is required and the <u>reported</u> SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is $\leq 1.4$ W/kg, $\leq 8$ mm, $\leq 7$ mm and $\leq 5$ mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz. |                                    |                                                                                      |                                                                                                                                                                                                                                                                        |                                                                               |

### 9.3 WCDMA Measurement Procedures for SAR

The following procedures are applicable to WCDMA handsets operating under 3GPP Release99, Release 5 and Release 6. The default test configuration is to measure SAR with an established radio link between the DUT and a communication test set using a 12.2kbps RMC (reference measurement channel) configured in Test Loop Mode 1. SAR is selectively confirmed for other physical channel configurations (DPCCH & DPDCH<sub>n</sub>), HSDPA and HSPA (HSUPA/HSDPA) modes according to output power, exposure conditions and device operating capabilities. Both uplink and downlink should be configured with the same RMC or AMR, when required. SAR for Release 5 HSDPA and Release 6 HSPA are measured using the applicable FRC (fixed reference channel) and E-DCH reference channel configurations. Maximum output power is verified according to applicable versions of 3GPP TS 34.121 and SAR must be measured according to these maximum output conditions. When Maximum Power Reduction (MPR) is not implemented according to Cubic Metric (CM) requirements for Release 6 HSPA, the following procedures do not apply.

#### For Release 5 HSDPA Data Devices:

| Sub-test | $\beta_c$ | $\beta_d$ | $\beta_d$ (SF) | $\beta_c / \beta_d$ | $\beta_{hs}$ | CM/dB |
|----------|-----------|-----------|----------------|---------------------|--------------|-------|
| 1        | 2/15      | 15/15     | 64             | 2/15                | 4/15         | 0.0   |
| 2        | 12/15     | 15/15     | 64             | 12/15               | 24/25        | 1.0   |
| 3        | 15/15     | 8/15      | 64             | 15/8                | 30/15        | 1.5   |
| 4        | 15/15     | 4/15      | 64             | 15/4                | 30/15        | 1.5   |

#### For Release 6 HSPA Data Devices

| Sub-test | $\beta_c$ | $\beta_d$ | $\beta_d$ (SF) | $\beta_c / \beta_d$ | $\beta_{hs}$ | $\beta_{ec}$ | $\beta_{ed}$                               | $\beta_{ed}$ (SF) | $\beta_{ed}$ (codes) | CM (dB) | MPR (dB) | AG Index | E-TFCI |
|----------|-----------|-----------|----------------|---------------------|--------------|--------------|--------------------------------------------|-------------------|----------------------|---------|----------|----------|--------|
| 1        | 11/15     | 15/15     | 64             | 11/15               | 22/15        | 209/225      | 1039/225                                   | 4                 | 1                    | 1.5     | 1.5      | 20       | 75     |
| 2        | 6/15      | 15/15     | 64             | 6/15                | 12/15        | 12/15        | 12/15                                      | 4                 | 1                    | 1.5     | 1.5      | 12       | 67     |
| 3        | 15/15     | 9/15      | 64             | 15/9                | 30/15        | 30/15        | $\beta_{ed1}:47/15$<br>$\beta_{ed2}:47/15$ | 4                 | 2                    | 1.5     | 1.5      | 15       | 92     |
| 4        | 2/15      | 15/15     | 64             | 2/15                | 4/15         | 4/15         | 56/75                                      | 4                 | 1                    | 1.5     | 1.5      | 17       | 71     |
| 5        | 15/15     | 15/15     | 64             | 15/15               | 24/15        | 30/15        | 134/15                                     | 4                 | 1                    | 1.5     | 1.5      | 21       | 81     |

#### Rel.8 DC-HSDPA (Cat 24)

SAR test exclusion for Rel.8 DC-HSDPA must satisfy the SAR test exclusion requirements of Rel.5 HSDPA. SAR test exclusion for DC-HSDPA devices is determined by power measurements according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to qualify for SAR test exclusion.

## 9.4 SAR Measurement for LTE

SAR tests for LTE are performed with a base station simulator, Rohde & Schwarz CMW500. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. All powers were measured with the CMW 500.

It is performed for conducted power and SAR based on the KDB941225 D05.

SAR is evaluated separately according to the following procedures for the different test positions in each exposure condition – head, body, body-worn accessories and other use conditions. The procedures in the following subsections are applied separately to test each LTE frequency band.

### 1) 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 among 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.

### 2) QPSK with 50% RB allocation

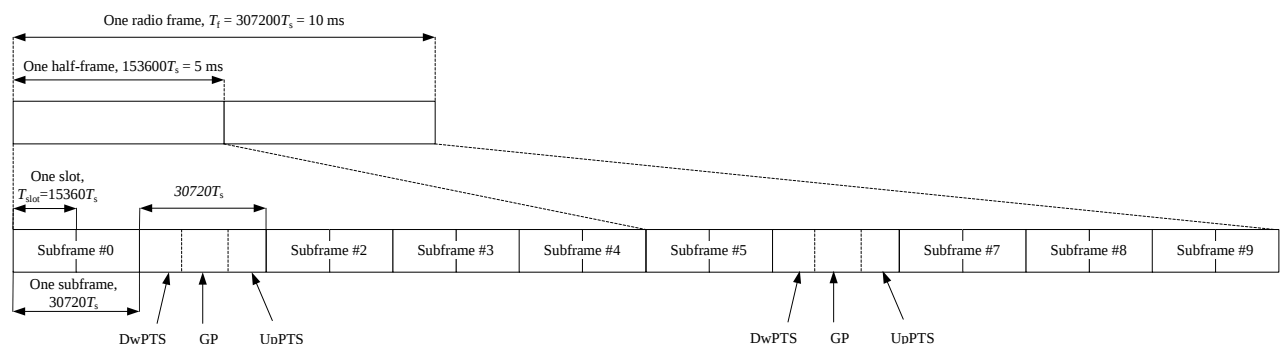
The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.

### 3) 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 1) and 2) 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.

## TDD test:

TDD testing is performed using guidance from FCC KDB 941225 D05 and the SAR test guidance provided in April 2013 TCB works hop notes. TDD is tested at the highest duty factor using UL-DL configuration 0 with special subframe configuration 6 and applying the FDD LTE procedures in KDB 941225 D05. SAR testing is performed using the extended cyclic prefix listed in 3GPP TS 36.211.



**Figure 9.2: Frame structure type 2 (for 5 ms switch-point periodicity)**

**Table 9.1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)**

| Special subframe configuration | Normal cyclic prefix in downlink |                                |                                  | Extended cyclic prefix in downlink |                                |                                  |
|--------------------------------|----------------------------------|--------------------------------|----------------------------------|------------------------------------|--------------------------------|----------------------------------|
|                                | DwPTS                            | UpPTS                          |                                  | DwPTS                              | UpPTS                          |                                  |
|                                |                                  | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |                                    | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |
| 0                              | $6592 \cdot T_s$                 | $2192 \cdot T_s$               | $2560 \cdot T_s$                 | $7680 \cdot T_s$                   | $2192 \cdot T_s$               | $2560 \cdot T_s$                 |
| 1                              | $19760 \cdot T_s$                |                                |                                  | $20480 \cdot T_s$                  |                                |                                  |
| 2                              | $21952 \cdot T_s$                |                                |                                  | $23040 \cdot T_s$                  |                                |                                  |
| 3                              | $24144 \cdot T_s$                |                                |                                  | $25600 \cdot T_s$                  |                                |                                  |
| 4                              | $26336 \cdot T_s$                | $4384 \cdot T_s$               | $5120 \cdot T_s$                 | $7680 \cdot T_s$                   | $4384 \cdot T_s$               | $5120 \cdot T_s$                 |
| 5                              | $6592 \cdot T_s$                 |                                |                                  | $20480 \cdot T_s$                  |                                |                                  |
| 6                              | $19760 \cdot T_s$                |                                |                                  | $23040 \cdot T_s$                  |                                |                                  |
| 7                              | $21952 \cdot T_s$                |                                |                                  | $12800 \cdot T_s$                  |                                |                                  |
| 8                              | $24144 \cdot T_s$                |                                |                                  | -                                  | -                              | -                                |
| 9                              | $13168 \cdot T_s$                |                                |                                  | -                                  | -                              | -                                |

**Table 9.2: Uplink-downlink configurations**

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

Duty factor is calculated by:

$$\begin{aligned}
 \text{Duty factor} &= \text{uplink frame} \cdot 6 + \text{UpPTS} \cdot 2 / \text{one frame length} \\
 &= (30720 \cdot T_s \cdot 6 + 5120 \cdot T_s \cdot 2) / 307200 \cdot T_s \\
 &= 0.633
 \end{aligned}$$

## 9.5 Bluetooth & Wi-Fi Measurement Procedures for SAR

Normal network operating configurations are not suitable for measuring the SAR of 802.11 transmitters in general. 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 that the results are consistent and reliable.

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in a test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters. The test frequencies should correspond to actual channel frequencies defined for domestic use. SAR for devices with switched diversity should be measured with only one antenna transmitting at a time during each SAR measurement, according to a fixed modulation and data rate. The same data pattern should be used for all measurements.

## 9.6 Power Drift

To control the output power stability during the SAR test, DASY5 system calculates the power drift by measuring the E-field at the same location at the beginning and at the end of the measurement for each test position. These drift values can be found in section 14 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is within 5%.

## 10 Area Scan Based 1-g SAR

### 10.1 Requirement of KDB

According to the KDB447498 D01, when the implementation is based the specific polynomial fit algorithm as presented at the 29th Bioelectromagnetics Society meeting (2007) and the estimated 1-gSAR is  $\leq 1.2$  W/kg, a zoom scan measurement is not required provided it is also not needed for any other purpose; for example, if the peak SAR location required for simultaneous transmission SAR test exclusion can be determined accurately by the SAR system or manually to discriminate between distinctive peaks and scattered noisy SAR distributions from area scans.

There must not be any warning or alert messages due to various measurement concerns identified by the SAR system; for example, noise in measurements, peaks too close to scan boundary, peaks are too sharp, spatial resolution and uncertainty issues etc. The SAR system verification must also demonstrate that the area scan estimated 1-g SAR is within 3% of the zoom scan 1-g SAR (See Annex B). When all the SAR results for each exposure condition in a frequency band and wireless mode are based on estimated 1-g SAR, the 1-g SAR for the highest SAR configuration must be determined by a zoom scan.

### 10.2 Fast SAR Algorithms

The approach is based on the area scan measurement applying a frequency dependent attenuation parameter. This attenuation parameter was empirically determined by analyzing a large number of phones. The MOTOROLA FAST SAR was developed and validated by the MOTOROLA Research Group in Ft. Lauderdale.

In the initial study, an approximation algorithm based on Linear fit was developed. The accuracy of the algorithm has been demonstrated across a broad frequency range (136-2450 MHz) and for both 1- and 10-g averaged SAR using a sample of 264 SAR measurements from 55 wireless handsets. For the sample size studied, the root-mean-squared errors of the algorithm are 1.2% and 5.8% for 1- and 10-g averaged SAR, respectively. The paper describing the algorithm in detail is expected to be published in August 2004 within the Special Issue of Transactions on MTT.

In the second step, the same research group optimized the fitting algorithm to an Polynomial fit whereby the frequency validity was extended to cover the range 30-6000MHz. Details of this study can be found in the BEMS 2007 Proceedings.

Both algorithms are implemented in DASY software.

## 11 Conducted Output Power

| Antenna      | Receiver on<br>(head scenario) | Receiver off+<br>Hotspot off<br>(body scenario) | Receiver off+<br>Hotspot on<br>(body/other scenario) |
|--------------|--------------------------------|-------------------------------------------------|------------------------------------------------------|
| Main Antenna | Power Level A1                 | Power Level B1                                  | Power Level C1                                       |

For WWAN, when the phone receiver is off and hotspot is off, the power reduction (Power level B1) will be implemented immediately at GSM1900, WCDMA B2/B4 and LTE B25/B41/B66 and normal power (Power Level A1) is applied for other bands. When the phone receiver is off and hotspot is on, the power reduction (Power Level C1) will be implemented immediately at GSM1900, WCDMA B2/B4 and LTE B25/B41/B66 and normal power (Power Level A1) is applied for other bands. If receiver is on, normal Power (Power Level A1) is applied for all bands.

### 11.1 GSM Measurement result

**Table 11.1-1: The conducted power measurement results–GSM850 (Power Level A1/B1/C1)**

| GSM 850<br>Speech (GMSK)   | Measured timeslot-averaged<br>output power (dBm) |       |       | Tune up | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|----------------------------|--------------------------------------------------|-------|-------|---------|-------------|--------------------------------------------------|-------|-------|
|                            | 251                                              | 190   | 128   |         |             | 251                                              | 190   | 128   |
| 1 Txslot                   | 32.43                                            | 32.45 | 32.42 | 33.50   | /           | /                                                | /     | /     |
| GSM 850<br>GPRS (GMSK)     | Measured timeslot-averaged<br>output power (dBm) |       |       |         | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|                            | 251                                              | 190   | 128   |         |             | 251                                              | 190   | 128   |
| 1 Txslot                   | 32.46                                            | 32.48 | 32.46 | 33.50   | -9.03       | 23.43                                            | 23.45 | 23.43 |
| <b>2 Txslots</b>           | 30.91                                            | 30.97 | 30.97 | 31.50   | -6.02       | 24.89                                            | 24.95 | 24.95 |
| 3 Txslots                  | 28.83                                            | 28.93 | 28.97 | 29.50   | -4.26       | 24.57                                            | 24.67 | 24.71 |
| 4 Txslots                  | 26.82                                            | 26.94 | 26.98 | 27.50   | -3.01       | 23.81                                            | 23.93 | 23.97 |
| GSM 850<br>EGPRS<br>(GMSK) | Measured timeslot-averaged<br>output power (dBm) |       |       |         | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|                            | 251                                              | 190   | 128   |         |             | 251                                              | 190   | 128   |
| 1 Txslot                   | 32.47                                            | 32.52 | 32.48 | 33.50   | -9.03       | 23.44                                            | 23.49 | 23.45 |
| <b>2 Txslots</b>           | 30.94                                            | 31.01 | 31.00 | 31.50   | -6.02       | 24.92                                            | 24.99 | 24.98 |
| 3 Txslots                  | 28.86                                            | 28.96 | 29.00 | 29.50   | -4.26       | 24.60                                            | 24.70 | 24.74 |
| 4 Txslots                  | 26.86                                            | 26.97 | 27.01 | 27.50   | -3.01       | 23.85                                            | 23.96 | 24.00 |
| GSM 850<br>EGPRS (8PSK)    | Measured timeslot-averaged<br>output power (dBm) |       |       |         | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|                            | 251                                              | 190   | 128   |         |             | 251                                              | 190   | 128   |
| 1 Txslot                   | 26.79                                            | 26.83 | 26.67 | 27.50   | -9.03       | 17.76                                            | 17.80 | 17.64 |
| 2 Txslots                  | 24.83                                            | 24.85 | 24.70 | 25.50   | -6.02       | 18.81                                            | 18.83 | 18.68 |
| 3Txslots                   | 22.81                                            | 22.80 | 22.65 | 23.50   | -4.26       | 18.55                                            | 18.54 | 18.39 |
| 4 Txslots                  | 20.63                                            | 20.62 | 20.74 | 21.50   | -3.01       | 17.62                                            | 17.61 | 17.73 |

NOTES:

1) Division Factors

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

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Page 27 of 206

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

**According to the conducted power as above, the body measurements are performed with 2Txslots for GSM850.**

**Table 11.1-2: The conducted power measurement results-GSM1900 (Power Level A1)**

| PCS1900<br>Speech (GMSK) | Measured timeslot-averaged<br>output power (dBm) |       |       | Tune up | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|--------------------------|--------------------------------------------------|-------|-------|---------|-------------|--------------------------------------------------|-------|-------|
|                          | 810                                              | 661   | 512   |         |             | 810                                              | 661   | 512   |
| 1 Txslot                 | 29.64                                            | 29.53 | 29.40 | 30.50   | /           | /                                                | /     | /     |
| PCS1900<br>GPRS (GMSK)   | Measured timeslot-averaged<br>output power (dBm) |       |       |         | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|                          | 810                                              | 661   | 512   |         |             | 810                                              | 661   | 512   |
| 1 Txslot                 | 29.61                                            | 29.49 | 29.34 | 30.50   | -9.03       | 20.58                                            | 20.46 | 20.31 |
| <b>2 Txslots</b>         | 28.07                                            | 27.95 | 27.81 | 28.50   | -6.02       | 22.05                                            | 21.93 | 21.79 |
| 3 Txslots                | 26.05                                            | 25.90 | 25.77 | 26.50   | -4.26       | 21.79                                            | 21.64 | 21.51 |
| 4 Txslots                | 24.03                                            | 23.88 | 23.77 | 24.50   | -3.01       | 21.02                                            | 20.87 | 20.76 |
| PCS1900<br>EGPRS (GMSK)  | Measured timeslot-averaged<br>output power (dBm) |       |       |         | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|                          | 810                                              | 661   | 512   |         |             | 810                                              | 661   | 512   |
| 1 Txslot                 | 29.58                                            | 29.49 | 29.33 | 30.50   | -9.03       | 20.55                                            | 20.46 | 20.30 |
| <b>2 Txslots</b>         | 28.06                                            | 27.95 | 27.79 | 28.50   | -6.02       | 22.04                                            | 21.93 | 21.77 |
| 3 Txslots                | 26.02                                            | 25.90 | 25.75 | 26.50   | -4.26       | 21.76                                            | 21.64 | 21.49 |
| 4 Txslots                | 24.00                                            | 23.88 | 23.75 | 24.50   | -3.01       | 20.99                                            | 20.87 | 20.74 |
| PCS1900<br>EGPRS (8PSK)  | Measured timeslot-averaged<br>output power (dBm) |       |       |         | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|                          | 810                                              | 661   | 512   |         |             | 810                                              | 661   | 512   |
| 1 Txslot                 | 25.89                                            | 25.96 | 25.86 | 26.50   | -9.03       | 16.86                                            | 16.93 | 16.83 |
| 2 Txslots                | 23.79                                            | 23.88 | 23.93 | 24.50   | -6.02       | 17.77                                            | 17.86 | 17.91 |
| 3Txslots                 | 21.64                                            | 21.72 | 22.28 | 22.50   | -4.26       | 17.38                                            | 17.46 | 18.02 |
| 4 Txslots                | 19.51                                            | 20.23 | 19.47 | 20.50   | -3.01       | 16.50                                            | 17.22 | 16.46 |

NOTES:

1) Division Factors

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

**According to the conducted power as above, the body measurements are performed with 2Txslots for GSM1900.**

**Table 11.1-3: The conducted power measurement results-GSM1900 (Power Level B1)**

| PCS1900<br>Speech (GMSK) | Measured timeslot-averaged<br>output power (dBm) |       |       | Tune up | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|--------------------------|--------------------------------------------------|-------|-------|---------|-------------|--------------------------------------------------|-------|-------|
|                          | 810                                              | 661   | 512   |         |             | 810                                              | 661   | 512   |
| 1 Txslot                 | 27.13                                            | 26.99 | 26.91 | 27.50   | /           | /                                                | /     | /     |
| PCS1900<br>GPRS (GMSK)   | Measured timeslot-averaged<br>output power (dBm) |       |       |         | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|                          | 810                                              | 661   | 512   |         |             | 810                                              | 661   | 512   |
| 1 Txslot                 | 27.13                                            | 26.95 | 26.87 | 27.50   | -9.03       | 18.10                                            | 17.92 | 17.84 |
| <b>2 Txslots</b>         | 24.15                                            | 24.01 | 23.98 | 25.50   | -6.02       | 18.13                                            | 17.99 | 17.96 |
| 3 Txslots                | 22.28                                            | 22.14 | 22.11 | 23.50   | -4.26       | 18.02                                            | 17.88 | 17.85 |
| 4 Txslots                | 21.00                                            | 20.88 | 20.81 | 21.50   | -3.01       | 17.99                                            | 17.87 | 17.80 |
| PCS1900<br>EGPRS (GMSK)  | Measured timeslot-averaged<br>output power (dBm) |       |       |         | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|                          | 810                                              | 661   | 512   |         |             | 810                                              | 661   | 512   |
| 1 Txslot                 | 27.12                                            | 26.92 | 26.91 | 27.50   | -9.03       | 18.09                                            | 17.89 | 17.88 |
| <b>2 Txslots</b>         | 24.14                                            | 24.01 | 23.97 | 25.50   | -6.02       | 18.12                                            | 17.99 | 17.95 |
| 3 Txslots                | 22.27                                            | 22.14 | 22.10 | 23.50   | -4.26       | 18.01                                            | 17.88 | 17.84 |
| 4 Txslots                | 20.98                                            | 20.87 | 20.80 | 21.50   | -3.01       | 17.97                                            | 17.86 | 17.79 |
| PCS1900<br>EGPRS (8PSK)  | Measured timeslot-averaged<br>output power (dBm) |       |       |         | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|                          | 810                                              | 661   | 512   |         |             | 810                                              | 661   | 512   |
| 1 Txslot                 | 25.89                                            | 25.96 | 25.88 | 26.50   | -9.03       | 16.86                                            | 16.93 | 16.85 |
| 2 Txslots                | 22.73                                            | 22.83 | 22.88 | 23.50   | -6.02       | 16.71                                            | 16.81 | 16.86 |
| 3Txslots                 | 20.85                                            | 21.04 | 20.92 | 21.50   | -4.26       | 16.59                                            | 16.78 | 16.66 |
| 4 Txslots                | 19.57                                            | 19.52 | 19.53 | 20.50   | -3.01       | 16.56                                            | 16.51 | 16.52 |

**NOTES:**
**1) Division Factors**

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

**According to the conducted power as above, the body measurements are performed with 2Txslots for GSM1900.**

**Table 11.1-4: The conducted power measurement results-GSM1900 (Power Level C1)**

| PCS1900<br>Speech (GMSK) | Measured timeslot-averaged<br>output power (dBm) |       |       | Tune up | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|--------------------------|--------------------------------------------------|-------|-------|---------|-------------|--------------------------------------------------|-------|-------|
|                          | 810                                              | 661   | 512   |         |             | 810                                              | 661   | 512   |
| 1 Txslot                 | 26.16                                            | 26.04 | 25.94 | 26.50   | /           | /                                                | /     | /     |
| PCS1900<br>GPRS (GMSK)   | Measured timeslot-averaged<br>output power (dBm) |       |       |         | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|                          | 810                                              | 661   | 512   |         |             | 810                                              | 661   | 512   |
| 1 Txslot                 | 26.24                                            | 26.11 | 26.04 | 26.50   | -9.03       | 17.21                                            | 17.08 | 17.01 |
| <b>2 Txslots</b>         | 23.54                                            | 23.33 | 23.36 | 24.50   | -6.02       | 17.52                                            | 17.31 | 17.34 |
| 3 Txslots                | 21.46                                            | 21.34 | 21.25 | 22.50   | -4.26       | 17.20                                            | 17.08 | 16.99 |
| 4 Txslots                | 20.09                                            | 20.01 | 19.95 | 20.50   | -3.01       | 17.08                                            | 17.00 | 16.94 |
| PCS1900<br>EGPRS (GMSK)  | Measured timeslot-averaged<br>output power (dBm) |       |       |         | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|                          | 810                                              | 661   | 512   |         |             | 810                                              | 661   | 512   |
| 1 Txslot                 | 26.15                                            | 26.06 | 25.96 | 26.50   | -9.03       | 17.12                                            | 17.03 | 16.93 |
| <b>2 Txslots</b>         | 23.57                                            | 23.39 | 23.31 | 24.50   | -6.02       | 17.55                                            | 17.37 | 17.29 |
| 3 Txslots                | 21.39                                            | 21.30 | 21.19 | 22.50   | -4.26       | 17.13                                            | 17.04 | 16.93 |
| 4 Txslots                | 20.02                                            | 19.96 | 19.90 | 20.50   | -3.01       | 17.01                                            | 16.95 | 16.89 |
| PCS1900<br>EGPRS (8PSK)  | Measured timeslot-averaged<br>output power (dBm) |       |       |         | calculation | Source-based time-averaged<br>output power (dBm) |       |       |
|                          | 810                                              | 661   | 512   |         |             | 810                                              | 661   | 512   |
| 1 Txslot                 | 25.93                                            | 25.94 | 25.91 | 26.50   | -9.03       | 16.90                                            | 16.91 | 16.88 |
| 2 Txslots                | 22.71                                            | 22.75 | 22.75 | 23.50   | -6.02       | 16.69                                            | 16.73 | 16.73 |
| 3Txslots                 | 20.84                                            | 20.82 | 20.82 | 21.50   | -4.26       | 16.58                                            | 16.56 | 16.56 |
| 4 Txslots                | 19.33                                            | 19.23 | 19.22 | 20.50   | -3.01       | 16.32                                            | 16.22 | 16.21 |

**NOTES:**
**1) Division Factors**

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

**According to the conducted power as above, the body measurements are performed with 2Txslots for GSM1900.**

## 11.2 WCDMA Measurement result

**Table 11.2-1: The conducted Power for WCDMA B5 (Power Level A1/B1/C1)**

| WCDMA850 | FDDV result (dBm)       |                         |                         | Tune up |
|----------|-------------------------|-------------------------|-------------------------|---------|
|          | 4233/4458<br>(846.6MHz) | 4183/4408<br>(836.6MHz) | 4132/4357<br>(826.4MHz) |         |
|          | 23.12                   | 23.13                   | 23.26                   |         |
| HSUPA    | 20.64                   | 20.28                   | 20.35                   | 21.50   |
|          | 20.26                   | 20.27                   | 20.33                   | 21.50   |
|          | 21.22                   | 21.28                   | 21.34                   | 22.50   |
|          | 19.76                   | 19.76                   | 19.82                   | 21.50   |
|          | 21.23                   | 21.26                   | 21.33                   | 22.50   |
| HSPA+    | 21.73                   | 21.87                   | 21.81                   | 23.00   |
| DC-HSDPA | 22.55                   | 22.57                   | 22.59                   | 23.00   |
|          | 22.04                   | 22.12                   | 22.17                   | 23.00   |
|          | 22.09                   | 22.06                   | 22.12                   | 22.50   |
|          | 21.74                   | 21.77                   | 21.76                   | 22.50   |

**Table 11.2-2: The conducted Power for WCDMA B2/B4 (Power Level A1)**

| WCDMA1900 | FDDII result (dBm)       |                        |                          | Tune up |
|-----------|--------------------------|------------------------|--------------------------|---------|
|           | 9538/9938<br>(1907.6MHz) | 9400/9800<br>(1880MHz) | 9262/9662<br>(1852.4MHz) |         |
|           | 22.92                    | 23.04                  | 22.97                    |         |
| HSUPA     | 19.96                    | 20.03                  | 20.05                    | 21.50   |
|           | 19.98                    | 20.02                  | 20.04                    | 21.50   |
|           | 20.97                    | 21.01                  | 21.05                    | 22.50   |
|           | 19.50                    | 19.52                  | 19.53                    | 21.50   |
|           | 20.94                    | 20.78                  | 21.02                    | 22.50   |
| HSPA+     | 21.51                    | 21.55                  | 21.56                    | 23.00   |
| DC-HSDPA  | 21.93                    | 22.03                  | 22.06                    | 23.50   |
|           | 21.78                    | 22.01                  | 22.05                    | 23.00   |
|           | 21.45                    | 21.54                  | 21.57                    | 23.00   |
|           | 21.42                    | 21.52                  | 21.56                    | 23.00   |

| WCDMA1700 | FDDIV result (dBm)       |                          |                          | Tune up |
|-----------|--------------------------|--------------------------|--------------------------|---------|
|           | 1513/1738<br>(1752.6MHz) | 1412/1637<br>(1732.4MHz) | 1312/1537<br>(1712.4MHz) |         |
|           | 23.14                    | 23.12                    | 23.21                    |         |
| HSUPA     | 20.16                    | 20.12                    | 20.23                    | 21.50   |
|           | 20.18                    | 20.13                    | 20.25                    | 21.50   |
|           | 21.16                    | 21.12                    | 21.21                    | 22.50   |
|           | 19.67                    | 19.65                    | 19.74                    | 21.50   |
|           | 21.13                    | 21.12                    | 21.22                    | 22.50   |
| HSPA+     | 21.77                    | 21.67                    | 21.76                    | 23.00   |
| DC-HSDPA  | 22.09                    | 22.11                    | 22.21                    | 23.00   |
|           | 21.95                    | 22.03                    | 22.08                    | 23.00   |
|           | 21.61                    | 21.59                    | 21.74                    | 22.50   |
|           | 21.63                    | 21.64                    | 21.72                    | 22.50   |

**Table 11.2-3: The conducted Power for WCDMA B2/B4 (Power Level B1)**

| WCDMA1900 | FDDII result (dBm)       |                        |                          | Tune up |
|-----------|--------------------------|------------------------|--------------------------|---------|
|           | 9538/9938<br>(1907.6MHz) | 9400/9800<br>(1880MHz) | 9262/9662<br>(1852.4MHz) |         |
|           | 20.02                    | 20.01                  | 20.12                    |         |
| HSUPA     | 17.94                    | 17.98                  | 17.95                    | 18.00   |
|           | 17.79                    | 17.80                  | 17.99                    | 18.00   |
|           | 18.97                    | 18.95                  | 19.97                    | 19.00   |
|           | 17.62                    | 17.40                  | 17.53                    | 18.00   |
|           | 18.93                    | 18.94                  | 18.94                    | 19.00   |
| HSPA+     | 19.42                    | 19.46                  | 19.47                    | 19.50   |
| DC-HSDPA  | 19.76                    | 19.97                  | 19.87                    | 20.00   |
|           | 19.43                    | 19.29                  | 19.23                    | 19.50   |
|           | 18.60                    | 18.78                  | 18.74                    | 19.50   |
|           | 18.74                    | 18.82                  | 18.73                    | 19.50   |

| WCDMA1700 | FDDIV result (dBm)       |                          |                          | Tune up |
|-----------|--------------------------|--------------------------|--------------------------|---------|
|           | 1513/1738<br>(1752.6MHz) | 1412/1637<br>(1732.4MHz) | 1312/1537<br>(1712.4MHz) |         |
|           | 20.07                    | 20.08                    | 20.18                    |         |
| HSUPA     | 18.31                    | 18.15                    | 18.18                    | 18.50   |
|           | 18.12                    | 18.15                    | 18.16                    | 18.50   |
|           | 18.82                    | 18.85                    | 18.99                    | 19.50   |
|           | 17.57                    | 17.75                    | 17.69                    | 18.50   |
|           | 19.00                    | 19.03                    | 19.11                    | 19.50   |
| HSPA+     | 19.53                    | 19.76                    | 19.71                    | 20.00   |
| DC-HSDPA  | 19.87                    | 19.73                    | 19.87                    | 20.00   |
|           | 19.95                    | 19.93                    | 19.89                    | 20.00   |
|           | 18.75                    | 18.88                    | 18.91                    | 19.50   |
|           | 18.71                    | 18.79                    | 18.88                    | 19.50   |

**Table 11.2-4: The conducted Power for WCDMA B2/B4 (Power Level C1)**

| WCDMA1900 | FDDII result (dBm)       |                        |                          | Tune up |
|-----------|--------------------------|------------------------|--------------------------|---------|
|           | 9538/9938<br>(1907.6MHz) | 9400/9800<br>(1880MHz) | 9262/9662<br>(1852.4MHz) |         |
|           | 16.99                    | 17.05                  | 17.11                    |         |
| HSUPA     | 14.91                    | 14.95                  | 14.96                    | 15.50   |
|           | 14.94                    | 14.93                  | 14.96                    | 15.50   |
|           | 15.94                    | 15.99                  | 15.96                    | 16.50   |
|           | 14.43                    | 14.48                  | 14.49                    | 15.50   |
|           | 15.89                    | 15.92                  | 15.96                    | 16.50   |
| HSPA+     | 16.53                    | 16.60                  | 16.57                    | 17.00   |
| DC-HSDPA  | 16.97                    | 17.06                  | 17.05                    | 17.50   |
|           | 16.97                    | 19.96                  | 16.95                    | 17.00   |
|           | 16.46                    | 16.58                  | 16.57                    | 17.00   |
|           | 16.47                    | 16.57                  | 16.55                    | 17.00   |

| WCDMA1700 | FDDIV result (dBm)       |                          |                          | Tune up |
|-----------|--------------------------|--------------------------|--------------------------|---------|
|           | 1513/1738<br>(1752.6MHz) | 1412/1637<br>(1732.4MHz) | 1312/1537<br>(1712.4MHz) |         |
|           | 17.12                    | 17.17                    | 17.23                    |         |
| HSUPA     | 15.00                    | 15.02                    | 15.10                    | 15.50   |
|           | 15.07                    | 15.01                    | 15.07                    | 15.50   |
|           | 16.06                    | 16.02                    | 16.07                    | 16.50   |
|           | 14.55                    | 14.51                    | 14.62                    | 15.50   |
|           | 16.04                    | 16.00                    | 16.10                    | 16.50   |
| HSPA+     | 16.70                    | 16.64                    | 16.85                    | 17.00   |
| DC-HSDPA  | 16.86                    | 16.86                    | 16.98                    | 17.00   |
|           | 16.85                    | 16.87                    | 16.97                    | 17.00   |
|           | 16.61                    | 16.63                    | 16.71                    | 16.50   |
|           | 16.58                    | 16.59                    | 16.68                    | 16.50   |

### 11.3 LTE Measurement result

#### Maximum Target Power for Production Unit

| Band        | Tune up (dBm)                  |                                                 |                                                      |
|-------------|--------------------------------|-------------------------------------------------|------------------------------------------------------|
|             | Receiver on<br>(head scenario) | Receiver off+<br>Hotspot off<br>(body scenario) | Receiver off+<br>Hotspot on<br>(body/other scenario) |
|             | Power Level A1                 | Power Level B1                                  | Power Level C1                                       |
| LTE B12     | 25                             | 25                                              | 25                                                   |
| LTE B25     | 24.5                           | 21                                              | 18.5                                                 |
| LTE B26     | 25                             | 25                                              | 25                                                   |
| LTE B41-PC3 | 24                             | 23                                              | 23                                                   |
| LTE B41-PC2 | 27                             | 26                                              | 26                                                   |
| LTE B66     | 24.5                           | 21                                              | 19.5                                                 |
| LTE B71     | 25                             | 25                                              | 25                                                   |

#### Maximum Power Reduction (MPR) for LTE

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

#### LTE Band12 (Power Level A1/B1/C1)

| LTE BAND12 |                |               |       |       |       |
|------------|----------------|---------------|-------|-------|-------|
| BANDWIDTH  | Number of RBs  | Frequency     | QPSK  | 16QAM | 64QAM |
| 1.4MHz     | 1RB-High (5)   | 715.3 (23173) | 23.76 | 23.13 | 22.08 |
|            |                | 707.5 (23095) | 23.84 | 23.28 | 22.10 |
|            |                | 699.7 (23017) | 23.84 | 23.20 | 22.13 |
|            | 1RB-Middle (3) | 715.3 (23173) | 23.95 | 23.31 | 22.24 |
|            |                | 707.5 (23095) | 23.97 | 23.26 | 22.15 |
|            |                | 699.7 (23017) | 23.98 | 23.40 | 22.24 |
|            | 1RB-Low (0)    | 715.3 (23173) | 23.78 | 23.14 | 22.15 |
|            |                | 707.5 (23095) | 23.81 | 23.13 | 22.01 |
|            |                | 699.7 (23017) | 23.83 | 23.12 | 22.09 |
|            | 3RB-High (3)   | 715.3 (23173) | 23.88 | 22.93 | 22.12 |
|            |                | 707.5 (23095) | 23.93 | 23.03 | 22.07 |
|            |                | 699.7 (23017) | 23.97 | 23.00 | 22.14 |
|            | 3RB-Middle (1) | 715.3 (23173) | 23.91 | 22.98 | 22.15 |

|      |                 |               |       |       |       |
|------|-----------------|---------------|-------|-------|-------|
|      |                 | 707.5 (23095) | 23.93 | 22.97 | 22.11 |
|      |                 | 699.7 (23017) | 23.97 | 23.02 | 22.06 |
|      | 3RB-Low (0)     | 715.3 (23173) | 23.89 | 22.96 | 22.10 |
|      |                 | 707.5 (23095) | 23.90 | 22.97 | 22.02 |
|      |                 | 699.7 (23017) | 23.91 | 22.90 | 22.04 |
|      | 6RB (0)         | 715.3 (23173) | 22.89 | 22.07 | 20.94 |
|      |                 | 707.5 (23095) | 22.94 | 22.05 | 20.94 |
|      |                 | 699.7 (23017) | 22.91 | 22.06 | 20.92 |
| 3MHz | 1RB-High (14)   | 714.5 (23165) | 23.83 | 23.23 | 22.17 |
|      |                 | 707.5 (23095) | 23.89 | 23.22 | 22.13 |
|      |                 | 700.5 (23025) | 23.91 | 23.25 | 22.14 |
|      | 1RB-Middle (7)  | 714.5 (23165) | 24.02 | 23.38 | 22.37 |
|      |                 | 707.5 (23095) | 24.05 | 23.43 | 22.25 |
|      |                 | 700.5 (23025) | 24.09 | 23.39 | 22.37 |
|      | 1RB-Low (0)     | 714.5 (23165) | 23.90 | 23.20 | 22.12 |
|      |                 | 707.5 (23095) | 23.91 | 23.31 | 22.23 |
|      |                 | 700.5 (23025) | 23.92 | 23.29 | 22.22 |
|      | 8RB-High (7)    | 714.5 (23165) | 22.94 | 22.07 | 21.01 |
|      |                 | 707.5 (23095) | 22.96 | 22.04 | 21.03 |
|      |                 | 700.5 (23025) | 22.96 | 22.01 | 21.03 |
|      | 8RB-Middle (4)  | 714.5 (23165) | 22.97 | 22.12 | 21.03 |
|      |                 | 707.5 (23095) | 23.00 | 22.08 | 21.02 |
|      |                 | 700.5 (23025) | 23.01 | 22.09 | 21.04 |
|      | 8RB-Low (0)     | 714.5 (23165) | 22.97 | 22.04 | 21.03 |
|      |                 | 707.5 (23095) | 22.95 | 22.01 | 20.98 |
|      |                 | 700.5 (23025) | 22.95 | 22.04 | 21.01 |
|      | 15RB (0)        | 714.5 (23165) | 22.91 | 21.96 | 20.93 |
|      |                 | 707.5 (23095) | 22.93 | 21.99 | 20.94 |
|      |                 | 700.5 (23025) | 22.92 | 21.95 | 20.97 |
| 5MHz | 1RB-High (24)   | 713.5 (23155) | 23.79 | 23.20 | 22.11 |
|      |                 | 707.5 (23095) | 23.80 | 23.08 | 21.98 |
|      |                 | 701.5 (23035) | 23.81 | 23.26 | 22.05 |
|      | 1RB-Middle (12) | 713.5 (23155) | 24.12 | 23.53 | 22.40 |
|      |                 | 707.5 (23095) | 24.11 | 23.43 | 22.34 |
|      |                 | 701.5 (23035) | 24.13 | 23.43 | 22.35 |
|      | 1RB-Low (0)     | 713.5 (23155) | 23.80 | 23.12 | 22.02 |
|      |                 | 707.5 (23095) | 23.85 | 23.30 | 22.07 |
|      |                 | 701.5 (23035) | 23.85 | 23.13 | 21.98 |
|      | 12RB-High (13)  | 713.5 (23155) | 22.93 | 21.96 | 20.95 |
|      |                 | 707.5 (23095) | 23.02 | 22.04 | 21.00 |
|      |                 | 701.5 (23035) | 22.94 | 21.94 | 20.95 |
|      | 12RB-Middle (6) | 713.5 (23155) | 23.02 | 22.05 | 21.02 |

|       |                 |               |       |       |       |
|-------|-----------------|---------------|-------|-------|-------|
| 10MHz | 12RB-Low (0)    | 707.5 (23095) | 23.06 | 22.05 | 21.05 |
|       |                 | 701.5 (23035) | 23.03 | 22.02 | 21.03 |
|       |                 | 713.5 (23155) | 23.03 | 22.05 | 21.03 |
|       | 25RB (0)        | 707.5 (23095) | 22.95 | 21.97 | 20.94 |
|       |                 | 701.5 (23035) | 22.98 | 22.00 | 20.98 |
|       |                 | 713.5 (23155) | 23.00 | 22.02 | 21.00 |
|       | 1RB-High (49)   | 707.5 (23095) | 22.99 | 22.02 | 20.98 |
|       |                 | 701.5 (23035) | 22.94 | 21.96 | 20.94 |
|       |                 | 711 (23130)   | 23.84 | 23.19 | 22.06 |
|       | 1RB-Middle (24) | 707.5 (23095) | 23.83 | 23.18 | 22.01 |
|       |                 | 704 (23060)   | 23.84 | 23.16 | 22.10 |
|       |                 | 711 (23130)   | 23.95 | 23.21 | 22.11 |

#### LTE Band25 (Power Level A1)

| LTE BAND25 |                |                |       |       |       |
|------------|----------------|----------------|-------|-------|-------|
| BANDWIDTH  | Number of RBs  | Frequency      | QPSK  | 16QAM | 64QAM |
| 1.4MHz     | 1RB-High (5)   | 1914.3 (26683) | 23.47 | 22.65 | 21.56 |
|            |                | 1882.5 (26365) | 23.38 | 22.74 | 21.61 |
|            |                | 1850.7 (26047) | 23.32 | 22.51 | 21.51 |
|            | 1RB-Middle (3) | 1914.3 (26683) | 23.54 | 22.73 | 21.62 |
|            |                | 1882.5 (26365) | 23.46 | 22.74 | 21.67 |
|            |                | 1850.7 (26047) | 23.40 | 22.70 | 21.51 |
|            | 1RB-Low (0)    | 1914.3 (26683) | 23.44 | 22.64 | 21.57 |
|            |                | 1882.5 (26365) | 23.40 | 22.63 | 21.57 |

|      |                 |                |                |       |       |       |
|------|-----------------|----------------|----------------|-------|-------|-------|
|      |                 |                | 1850.7 (26047) | 23.32 | 22.53 | 21.51 |
|      |                 | 3RB-High (3)   | 1914.3 (26683) | 23.54 | 22.46 | 21.60 |
|      |                 |                | 1882.5 (26365) | 23.48 | 22.49 | 21.65 |
|      |                 |                | 1850.7 (26047) | 23.42 | 22.38 | 21.51 |
|      |                 | 3RB-Middle (1) | 1914.3 (26683) | 23.54 | 22.58 | 21.63 |
|      |                 |                | 1882.5 (26365) | 23.52 | 22.50 | 21.64 |
|      |                 |                | 1850.7 (26047) | 23.44 | 22.43 | 21.52 |
|      |                 | 3RB-Low (0)    | 1914.3 (26683) | 23.53 | 22.48 | 21.62 |
|      |                 |                | 1882.5 (26365) | 23.49 | 22.50 | 21.60 |
|      |                 |                | 1850.7 (26047) | 23.38 | 22.45 | 21.47 |
|      |                 | 6RB (0)        | 1914.3 (26683) | 22.57 | 21.61 | 20.54 |
|      |                 |                | 1882.5 (26365) | 22.48 | 21.60 | 20.51 |
|      |                 |                | 1850.7 (26047) | 22.43 | 21.51 | 20.45 |
| 3MHz | 1RB-High (14)   |                | 1913.5 (26675) | 23.57 | 22.68 | 21.66 |
|      |                 |                | 1882.5 (26365) | 23.48 | 22.77 | 21.64 |
|      |                 |                | 1851.5 (26055) | 23.39 | 22.61 | 21.52 |
|      | 1RB-Middle (7)  |                | 1913.5 (26675) | 23.61 | 22.88 | 21.76 |
|      |                 |                | 1882.5 (26365) | 23.60 | 22.93 | 21.73 |
|      |                 |                | 1851.5 (26055) | 23.52 | 22.71 | 21.71 |
|      | 1RB-Low (0)     |                | 1913.5 (26675) | 23.55 | 22.75 | 21.61 |
|      |                 |                | 1882.5 (26365) | 23.49 | 22.87 | 21.66 |
|      |                 |                | 1851.5 (26055) | 23.41 | 22.71 | 21.62 |
|      | 8RB-High (7)    |                | 1913.5 (26675) | 22.55 | 21.63 | 20.58 |
|      |                 |                | 1882.5 (26365) | 22.50 | 21.58 | 20.55 |
|      |                 |                | 1851.5 (26055) | 22.41 | 21.45 | 20.48 |
|      | 8RB-Middle (4)  |                | 1913.5 (26675) | 22.60 | 21.63 | 20.63 |
|      |                 |                | 1882.5 (26365) | 22.54 | 21.59 | 20.59 |
|      |                 |                | 1851.5 (26055) | 22.43 | 21.47 | 20.48 |
|      | 8RB-Low (0)     |                | 1913.5 (26675) | 22.60 | 21.65 | 20.62 |
|      |                 |                | 1882.5 (26365) | 22.50 | 21.60 | 20.59 |
|      |                 |                | 1851.5 (26055) | 22.40 | 21.48 | 20.48 |
|      | 15RB (0)        |                | 1913.5 (26675) | 22.61 | 21.60 | 20.56 |
|      |                 |                | 1882.5 (26365) | 22.50 | 21.51 | 20.50 |
|      |                 |                | 1851.5 (26055) | 22.45 | 21.44 | 20.42 |
| 5MHz | 1RB-High (24)   |                | 1912.5 (26665) | 23.53 | 22.71 | 21.66 |
|      |                 |                | 1882.5 (26365) | 23.47 | 22.77 | 21.60 |
|      |                 |                | 1852.5 (26065) | 23.36 | 22.61 | 21.52 |
|      | 1RB-Middle (12) |                | 1912.5 (26665) | 23.70 | 22.77 | 21.82 |
|      |                 |                | 1882.5 (26365) | 23.59 | 22.88 | 21.74 |
|      |                 |                | 1852.5 (26065) | 23.51 | 22.65 | 21.60 |
|      | 1RB-Low (0)     |                | 1912.5 (26665) | 23.52 | 22.81 | 21.72 |
|      |                 |                | 1882.5 (26365) | 23.46 | 22.75 | 21.59 |

|       |                  |                 |                |       |       |       |
|-------|------------------|-----------------|----------------|-------|-------|-------|
|       |                  |                 | 1852.5 (26065) | 23.39 | 22.65 | 21.57 |
|       |                  | 12RB-High (13)  | 1912.5 (26665) | 22.59 | 21.57 | 20.54 |
|       |                  |                 | 1882.5 (26365) | 22.51 | 21.53 | 20.54 |
|       |                  |                 | 1852.5 (26065) | 22.40 | 21.40 | 20.46 |
|       |                  | 12RB-Middle (6) | 1912.5 (26665) | 22.65 | 21.61 | 20.65 |
|       |                  |                 | 1882.5 (26365) | 22.54 | 21.55 | 20.58 |
|       |                  |                 | 1852.5 (26065) | 22.46 | 21.47 | 20.50 |
|       |                  | 12RB-Low (0)    | 1912.5 (26665) | 22.61 | 21.59 | 20.58 |
|       |                  |                 | 1882.5 (26365) | 22.52 | 21.50 | 20.56 |
|       |                  |                 | 1852.5 (26065) | 22.41 | 21.41 | 20.50 |
|       |                  | 25RB (0)        | 1912.5 (26665) | 22.63 | 21.63 | 20.55 |
|       |                  |                 | 1882.5 (26365) | 22.53 | 21.56 | 20.56 |
|       |                  |                 | 1852.5 (26065) | 22.42 | 21.45 | 20.44 |
| 10MHz | 1RB-High (49)    |                 | 1910 (26640)   | 23.56 | 22.69 | 21.66 |
|       |                  |                 | 1882.5 (26365) | 23.47 | 22.73 | 21.66 |
|       |                  |                 | 1855 (26090)   | 23.39 | 22.59 | 21.56 |
|       | 1RB-Middle (24)  |                 | 1910 (26640)   | 23.64 | 22.75 | 21.74 |
|       |                  |                 | 1882.5 (26365) | 23.55 | 22.80 | 21.75 |
|       |                  |                 | 1855 (26090)   | 23.44 | 22.68 | 21.52 |
|       | 1RB-Low (0)      |                 | 1910 (26640)   | 23.56 | 22.88 | 21.72 |
|       |                  |                 | 1882.5 (26365) | 23.51 | 22.84 | 21.71 |
|       |                  |                 | 1855 (26090)   | 23.39 | 22.69 | 21.52 |
|       | 25RB-High (25)   |                 | 1910 (26640)   | 22.66 | 21.63 | 20.58 |
|       |                  |                 | 1882.5 (26365) | 22.55 | 21.54 | 20.56 |
|       |                  |                 | 1855 (26090)   | 22.46 | 21.44 | 20.47 |
|       | 25RB-Middle (12) |                 | 1910 (26640)   | 22.65 | 21.62 | 20.61 |
|       |                  |                 | 1882.5 (26365) | 22.56 | 21.57 | 20.58 |
|       |                  |                 | 1855 (26090)   | 22.46 | 21.47 | 20.47 |
|       | 25RB-Low (0)     |                 | 1910 (26640)   | 22.71 | 21.71 | 20.69 |
|       |                  |                 | 1882.5 (26365) | 22.58 | 21.58 | 20.57 |
|       |                  |                 | 1855 (26090)   | 22.43 | 21.47 | 20.47 |
|       | 50RB (0)         |                 | 1910 (26640)   | 22.70 | 21.67 | 20.62 |
|       |                  |                 | 1882.5 (26365) | 22.58 | 21.59 | 20.58 |
|       |                  |                 | 1855 (26090)   | 22.49 | 21.48 | 20.46 |
| 15MHz | 1RB-High (74)    |                 | 1907.5 (26615) | 23.49 | 22.76 | 21.63 |
|       |                  |                 | 1882.5 (26365) | 23.47 | 22.72 | 21.70 |
|       |                  |                 | 1857.5 (26115) | 23.36 | 22.65 | 21.56 |
|       | 1RB-Middle (37)  |                 | 1907.5 (26615) | 23.51 | 22.84 | 21.61 |
|       |                  |                 | 1882.5 (26365) | 23.45 | 22.76 | 21.67 |
|       |                  |                 | 1857.5 (26115) | 23.34 | 22.66 | 21.51 |
|       | 1RB-Low (0)      |                 | 1907.5 (26615) | 23.50 | 22.92 | 21.66 |
|       |                  |                 | 1882.5 (26365) | 23.47 | 22.85 | 21.70 |

|       |  |                  |                |       |       |       |
|-------|--|------------------|----------------|-------|-------|-------|
|       |  |                  | 1857.5 (26115) | 23.38 | 22.68 | 21.53 |
|       |  | 36RB-High (38)   | 1907.5 (26615) | 22.63 | 21.59 | 20.63 |
|       |  |                  | 1882.5 (26365) | 22.52 | 21.52 | 20.54 |
|       |  |                  | 1857.5 (26115) | 22.46 | 21.47 | 20.48 |
|       |  | 36RB-Middle (19) | 1907.5 (26615) | 22.63 | 21.61 | 20.66 |
|       |  |                  | 1882.5 (26365) | 22.56 | 21.55 | 20.60 |
|       |  |                  | 1857.5 (26115) | 22.45 | 21.42 | 20.46 |
|       |  | 36RB-Low (0)     | 1907.5 (26615) | 22.66 | 21.63 | 20.67 |
|       |  |                  | 1882.5 (26365) | 22.56 | 21.57 | 20.59 |
|       |  |                  | 1857.5 (26115) | 22.48 | 21.46 | 20.48 |
|       |  | 75RB (0)         | 1907.5 (26615) | 22.67 | 21.65 | 20.63 |
|       |  |                  | 1882.5 (26365) | 22.55 | 21.56 | 20.52 |
|       |  |                  | 1857.5 (26115) | 22.46 | 21.45 | 20.44 |
| 20MHz |  | 1RB-High (99)    | 1905 (26590)   | 23.37 | 22.60 | 21.45 |
|       |  |                  | 1882.5 (26365) | 23.34 | 22.55 | 21.51 |
|       |  |                  | 1860 (26140)   | 23.27 | 22.63 | 21.44 |
|       |  | 1RB-Middle (50)  | 1905 (26590)   | 23.60 | 22.88 | 21.76 |
|       |  |                  | 1882.5 (26365) | 23.52 | 22.75 | 21.71 |
|       |  |                  | 1860 (26140)   | 23.45 | 22.62 | 21.59 |
|       |  | 1RB-Low (0)      | 1905 (26590)   | 23.40 | 22.64 | 21.52 |
|       |  |                  | 1882.5 (26365) | 23.35 | 22.63 | 21.54 |
|       |  |                  | 1860 (26140)   | 23.25 | 22.46 | 21.36 |
|       |  | 50RB-High (50)   | 1905 (26590)   | 22.58 | 21.56 | 20.55 |
|       |  |                  | 1882.5 (26365) | 22.55 | 21.55 | 20.55 |
|       |  |                  | 1860 (26140)   | 22.53 | 21.53 | 20.53 |
|       |  | 50RB-Middle (25) | 1905 (26590)   | 22.63 | 21.63 | 20.65 |
|       |  |                  | 1882.5 (26365) | 22.59 | 21.60 | 20.59 |
|       |  |                  | 1860 (26140)   | 22.51 | 21.47 | 20.49 |
|       |  | 50RB-Low (0)     | 1905 (26590)   | 22.69 | 21.68 | 20.69 |
|       |  |                  | 1882.5 (26365) | 22.58 | 21.63 | 20.61 |
|       |  |                  | 1860 (26140)   | 22.52 | 21.52 | 20.52 |
|       |  | 100RB (0)        | 1905 (26590)   | 22.62 | 21.62 | 20.64 |
|       |  |                  | 1882.5 (26365) | 22.59 | 21.61 | 20.58 |
|       |  |                  | 1860 (26140)   | 22.52 | 21.51 | 20.51 |

## LTE Band25 (Power Level B1)

| LTE BAND25 |                |                |       |       |       |
|------------|----------------|----------------|-------|-------|-------|
| BANDWIDTH  | Number of RBs  | Frequency      | QPSK  | 16QAM | 64QAM |
| 1.4MHz     | 1RB-High (5)   | 1914.3 (26683) | 20.50 | 20.77 | 20.56 |
|            |                | 1882.5 (26365) | 20.42 | 20.79 | 20.60 |
|            |                | 1850.7 (26047) | 20.36 | 20.69 | 20.54 |
|            | 1RB-Middle (3) | 1914.3 (26683) | 20.63 | 20.80 | 20.65 |
|            |                | 1882.5 (26365) | 20.48 | 20.90 | 20.68 |
|            |                | 1850.7 (26047) | 20.40 | 20.72 | 20.60 |
|            | 1RB-Low (0)    | 1914.3 (26683) | 20.49 | 20.79 | 20.65 |
|            |                | 1882.5 (26365) | 20.44 | 20.72 | 20.57 |
|            |                | 1850.7 (26047) | 20.34 | 20.63 | 20.52 |
|            | 3RB-High (3)   | 1914.3 (26683) | 20.57 | 20.54 | 20.69 |
|            |                | 1882.5 (26365) | 20.53 | 20.51 | 20.64 |
|            |                | 1850.7 (26047) | 20.44 | 20.41 | 20.58 |
|            | 3RB-Middle (1) | 1914.3 (26683) | 20.63 | 20.63 | 20.67 |
|            |                | 1882.5 (26365) | 20.54 | 20.54 | 20.67 |
|            |                | 1850.7 (26047) | 20.47 | 20.55 | 20.56 |
|            | 3RB-Low (0)    | 1914.3 (26683) | 20.58 | 20.59 | 20.63 |
|            |                | 1882.5 (26365) | 20.54 | 20.56 | 20.65 |
|            |                | 1850.7 (26047) | 20.45 | 20.40 | 20.55 |
|            | 6RB (0)        | 1914.3 (26683) | 20.58 | 20.69 | 20.59 |
|            |                | 1882.5 (26365) | 20.48 | 20.62 | 20.54 |
|            |                | 1850.7 (26047) | 20.45 | 20.53 | 20.44 |
| 3MHz       | 1RB-High (14)  | 1913.5 (26675) | 20.59 | 20.80 | 20.75 |
|            |                | 1882.5 (26365) | 20.48 | 20.83 | 20.70 |
|            |                | 1851.5 (26055) | 20.41 | 20.69 | 20.61 |
|            | 1RB-Middle (7) | 1913.5 (26675) | 20.71 | 20.92 | 20.77 |
|            |                | 1882.5 (26365) | 20.62 | 21.03 | 20.80 |
|            |                | 1851.5 (26055) | 20.53 | 20.75 | 20.67 |
|            | 1RB-Low (0)    | 1913.5 (26675) | 20.58 | 20.90 | 20.78 |
|            |                | 1882.5 (26365) | 20.48 | 20.86 | 20.70 |
|            |                | 1851.5 (26055) | 20.44 | 20.78 | 20.63 |
|            | 8RB-High (7)   | 1913.5 (26675) | 20.61 | 20.66 | 20.63 |
|            |                | 1882.5 (26365) | 20.51 | 20.60 | 20.56 |
|            |                | 1851.5 (26055) | 20.43 | 20.51 | 20.47 |
|            | 8RB-Middle (4) | 1913.5 (26675) | 20.65 | 20.65 | 20.64 |
|            |                | 1882.5 (26365) | 20.54 | 20.63 | 20.59 |
|            |                | 1851.5 (26055) | 20.48 | 20.53 | 20.50 |
|            | 8RB-Low (0)    | 1913.5 (26675) | 20.62 | 20.67 | 20.65 |
|            |                | 1882.5 (26365) | 20.53 | 20.63 | 20.59 |

|       |                  |                |       |       |       |
|-------|------------------|----------------|-------|-------|-------|
|       | 15RB (0)         | 1851.5 (26055) | 20.47 | 20.54 | 20.49 |
|       |                  | 1913.5 (26675) | 20.61 | 20.63 | 20.55 |
|       |                  | 1882.5 (26365) | 20.50 | 20.55 | 20.52 |
|       |                  | 1851.5 (26055) | 20.44 | 20.45 | 20.44 |
| 5MHz  | 1RB-High (24)    | 1912.5 (26665) | 20.57 | 20.76 | 20.76 |
|       |                  | 1882.5 (26365) | 20.50 | 20.88 | 20.71 |
|       |                  | 1852.5 (26065) | 20.38 | 20.66 | 20.53 |
|       | 1RB-Middle (12)  | 1912.5 (26665) | 20.69 | 21.01 | 20.85 |
|       |                  | 1882.5 (26365) | 20.67 | 20.98 | 20.80 |
|       |                  | 1852.5 (26065) | 20.56 | 20.82 | 20.81 |
|       | 1RB-Low (0)      | 1912.5 (26665) | 20.56 | 20.89 | 20.77 |
|       |                  | 1882.5 (26365) | 20.49 | 20.86 | 20.68 |
|       |                  | 1852.5 (26065) | 20.40 | 20.75 | 20.56 |
|       | 12RB-High (13)   | 1912.5 (26665) | 20.54 | 20.56 | 20.56 |
|       |                  | 1882.5 (26365) | 20.54 | 20.52 | 20.56 |
|       |                  | 1852.5 (26065) | 20.43 | 20.43 | 20.51 |
|       | 12RB-Middle (6)  | 1912.5 (26665) | 20.64 | 20.60 | 20.66 |
|       |                  | 1882.5 (26365) | 20.56 | 20.58 | 20.59 |
|       |                  | 1852.5 (26065) | 20.47 | 20.52 | 20.53 |
|       | 12RB-Low (0)     | 1912.5 (26665) | 20.60 | 20.60 | 20.61 |
|       |                  | 1882.5 (26365) | 20.52 | 20.52 | 20.57 |
|       |                  | 1852.5 (26065) | 20.46 | 20.45 | 20.51 |
|       | 25RB (0)         | 1912.5 (26665) | 20.60 | 20.60 | 20.56 |
|       |                  | 1882.5 (26365) | 20.53 | 20.59 | 20.57 |
|       |                  | 1852.5 (26065) | 20.42 | 20.47 | 20.47 |
| 10MHz | 1RB-High (49)    | 1910 (26640)   | 20.54 | 20.82 | 20.66 |
|       |                  | 1882.5 (26365) | 20.49 | 20.69 | 20.69 |
|       |                  | 1855 (26090)   | 20.40 | 20.67 | 20.58 |
|       | 1RB-Middle (24)  | 1910 (26640)   | 20.66 | 20.94 | 20.81 |
|       |                  | 1882.5 (26365) | 20.59 | 20.98 | 20.74 |
|       |                  | 1855 (26090)   | 20.47 | 20.65 | 20.63 |
|       | 1RB-Low (0)      | 1910 (26640)   | 20.58 | 20.94 | 20.77 |
|       |                  | 1882.5 (26365) | 20.50 | 20.83 | 20.72 |
|       |                  | 1855 (26090)   | 20.43 | 20.61 | 20.62 |
|       | 25RB-High (25)   | 1910 (26640)   | 20.58 | 20.59 | 20.56 |
|       |                  | 1882.5 (26365) | 20.55 | 20.57 | 20.56 |
|       |                  | 1855 (26090)   | 20.45 | 20.46 | 20.48 |
|       | 25RB-Middle (12) | 1910 (26640)   | 20.64 | 20.65 | 20.66 |
|       |                  | 1882.5 (26365) | 20.55 | 20.59 | 20.58 |
|       |                  | 1855 (26090)   | 20.47 | 20.48 | 20.49 |
|       | 25RB-Low (0)     | 1910 (26640)   | 20.70 | 20.71 | 20.70 |
|       |                  | 1882.5 (26365) | 20.57 | 20.61 | 20.60 |

|       |                  |                |       |       |       |
|-------|------------------|----------------|-------|-------|-------|
|       | 50RB (0)         | 1855 (26090)   | 20.46 | 20.49 | 20.47 |
|       |                  | 1910 (26640)   | 20.62 | 20.69 | 20.64 |
|       |                  | 1882.5 (26365) | 20.57 | 20.61 | 20.60 |
|       |                  | 1855 (26090)   | 20.46 | 20.49 | 20.47 |
| 15MHz | 1RB-High (74)    | 1907.5 (26615) | 20.56 | 20.84 | 20.70 |
|       |                  | 1882.5 (26365) | 20.52 | 20.83 | 20.70 |
|       |                  | 1857.5 (26115) | 20.41 | 20.63 | 20.55 |
|       | 1RB-Middle (37)  | 1907.5 (26615) | 20.55 | 20.85 | 20.72 |
|       |                  | 1882.5 (26365) | 20.50 | 20.73 | 20.60 |
|       |                  | 1857.5 (26115) | 20.39 | 20.56 | 20.49 |
|       | 1RB-Low (0)      | 1907.5 (26615) | 20.59 | 20.85 | 20.72 |
|       |                  | 1882.5 (26365) | 20.50 | 20.84 | 20.77 |
|       |                  | 1857.5 (26115) | 20.43 | 20.75 | 20.64 |
|       | 36RB-High (38)   | 1907.5 (26615) | 20.62 | 20.58 | 20.61 |
|       |                  | 1882.5 (26365) | 20.54 | 20.51 | 20.56 |
|       |                  | 1857.5 (26115) | 20.48 | 20.46 | 20.50 |
|       | 36RB-Middle (19) | 1907.5 (26615) | 20.64 | 20.63 | 20.65 |
|       |                  | 1882.5 (26365) | 20.58 | 20.56 | 20.60 |
|       |                  | 1857.5 (26115) | 20.45 | 20.44 | 20.46 |
|       | 36RB-Low (0)     | 1907.5 (26615) | 20.68 | 20.68 | 20.70 |
|       |                  | 1882.5 (26365) | 20.56 | 20.56 | 20.60 |
|       |                  | 1857.5 (26115) | 20.49 | 20.48 | 20.49 |
|       | 75RB (0)         | 1907.5 (26615) | 20.62 | 20.64 | 20.64 |
|       |                  | 1882.5 (26365) | 20.56 | 20.58 | 20.57 |
|       |                  | 1857.5 (26115) | 20.45 | 20.46 | 20.46 |
| 20MHz | 1RB-High (99)    | 1905 (26590)   | 20.40 | 20.77 | 20.50 |
|       |                  | 1882.5 (26365) | 20.36 | 20.71 | 20.51 |
|       |                  | 1860 (26140)   | 20.30 | 20.61 | 20.53 |
|       | 1RB-Middle (50)  | 1905 (26590)   | 20.75 | 20.89 | 20.76 |
|       |                  | 1882.5 (26365) | 20.73 | 20.89 | 20.73 |
|       |                  | 1860 (26140)   | 20.71 | 20.83 | 20.63 |
|       | 1RB-Low (0)      | 1905 (26590)   | 20.41 | 20.71 | 20.57 |
|       |                  | 1882.5 (26365) | 20.33 | 20.66 | 20.53 |
|       |                  | 1860 (26140)   | 20.27 | 20.47 | 20.49 |
|       | 50RB-High (50)   | 1905 (26590)   | 20.54 | 20.58 | 20.56 |
|       |                  | 1882.5 (26365) | 20.51 | 20.53 | 20.54 |
|       |                  | 1860 (26140)   | 20.51 | 20.52 | 20.51 |
|       | 50RB-Middle (25) | 1905 (26590)   | 20.60 | 20.65 | 20.65 |
|       |                  | 1882.5 (26365) | 20.58 | 20.60 | 20.62 |
|       |                  | 1860 (26140)   | 20.45 | 20.52 | 20.51 |
|       | 50RB-Low (0)     | 1905 (26590)   | 20.76 | 20.69 | 20.71 |
|       |                  | 1882.5 (26365) | 20.74 | 20.62 | 20.61 |

|  |           |                |       |       |       |
|--|-----------|----------------|-------|-------|-------|
|  |           | 1860 (26140)   | 20.73 | 20.52 | 20.53 |
|  | 100RB (0) | 1905 (26590)   | 20.61 | 20.60 | 20.65 |
|  |           | 1882.5 (26365) | 20.56 | 20.58 | 20.59 |
|  |           | 1860 (26140)   | 20.69 | 20.50 | 20.53 |

**LTE Band25 (Power Level C1)**

| LTE BAND25 |                |                |       |       |       |
|------------|----------------|----------------|-------|-------|-------|
| BANDWIDTH  | Number of RBs  | Frequency      | QPSK  | 16QAM | 64QAM |
| 1.4MHz     | 1RB-High (5)   | 1914.3 (26683) | 17.43 | 17.83 | 17.69 |
|            |                | 1882.5 (26365) | 17.41 | 17.75 | 17.63 |
|            |                | 1850.7 (26047) | 17.32 | 17.64 | 17.52 |
|            | 1RB-Middle (3) | 1914.3 (26683) | 17.53 | 17.88 | 17.67 |
|            |                | 1882.5 (26365) | 17.46 | 17.83 | 17.72 |
|            |                | 1850.7 (26047) | 17.37 | 17.65 | 17.65 |
|            | 1RB-Low (0)    | 1914.3 (26683) | 17.45 | 17.78 | 17.64 |
|            |                | 1882.5 (26365) | 17.39 | 17.70 | 17.64 |
|            |                | 1850.7 (26047) | 17.32 | 17.59 | 17.53 |
|            | 3RB-High (3)   | 1914.3 (26683) | 17.55 | 17.59 | 17.68 |
|            |                | 1882.5 (26365) | 17.46 | 17.51 | 17.58 |
|            |                | 1850.7 (26047) | 17.39 | 17.47 | 17.59 |
|            | 3RB-Middle (1) | 1914.3 (26683) | 17.60 | 17.62 | 17.77 |
|            |                | 1882.5 (26365) | 17.49 | 17.61 | 17.72 |
|            |                | 1850.7 (26047) | 17.46 | 17.46 | 17.57 |
|            | 3RB-Low (0)    | 1914.3 (26683) | 17.55 | 17.54 | 17.70 |
|            |                | 1882.5 (26365) | 17.47 | 17.56 | 17.61 |
|            |                | 1850.7 (26047) | 17.42 | 17.47 | 17.52 |
|            | 6RB (0)        | 1914.3 (26683) | 17.58 | 17.69 | 17.62 |
|            |                | 1882.5 (26365) | 17.47 | 17.62 | 17.50 |
|            |                | 1850.7 (26047) | 17.43 | 17.55 | 17.45 |
| 3MHz       | 1RB-High (14)  | 1913.5 (26675) | 17.54 | 17.80 | 17.74 |
|            |                | 1882.5 (26365) | 17.47 | 17.79 | 17.66 |
|            |                | 1851.5 (26055) | 17.37 | 17.75 | 17.61 |
|            | 1RB-Middle (7) | 1913.5 (26675) | 17.61 | 18.02 | 17.83 |
|            |                | 1882.5 (26365) | 17.60 | 17.91 | 17.80 |
|            |                | 1851.5 (26055) | 17.48 | 17.81 | 17.73 |
|            | 1RB-Low (0)    | 1913.5 (26675) | 17.53 | 17.92 | 17.76 |
|            |                | 1882.5 (26365) | 17.47 | 17.83 | 17.66 |
|            |                | 1851.5 (26055) | 17.40 | 17.73 | 17.62 |
|            | 8RB-High (7)   | 1913.5 (26675) | 17.55 | 17.64 | 17.66 |
|            |                | 1882.5 (26365) | 17.47 | 17.60 | 17.57 |
|            |                | 1851.5 (26055) | 17.43 | 17.53 | 17.49 |

|       |                 |                |       |       |       |
|-------|-----------------|----------------|-------|-------|-------|
|       | 8RB-Middle (4)  | 1913.5 (26675) | 17.58 | 17.67 | 17.68 |
|       |                 | 1882.5 (26365) | 17.48 | 17.60 | 17.60 |
|       |                 | 1851.5 (26055) | 17.40 | 17.53 | 17.50 |
|       | 8RB-Low (0)     | 1913.5 (26675) | 17.59 | 17.70 | 17.65 |
|       |                 | 1882.5 (26365) | 17.49 | 17.58 | 17.60 |
|       |                 | 1851.5 (26055) | 17.40 | 17.56 | 17.49 |
|       | 15RB (0)        | 1913.5 (26675) | 17.58 | 17.63 | 17.61 |
|       |                 | 1882.5 (26365) | 17.49 | 17.52 | 17.53 |
|       |                 | 1851.5 (26055) | 17.43 | 17.47 | 17.47 |
| 5MHz  | 1RB-High (24)   | 1912.5 (26665) | 17.52 | 17.89 | 17.69 |
|       |                 | 1882.5 (26365) | 17.50 | 17.78 | 17.65 |
|       |                 | 1852.5 (26065) | 17.34 | 17.73 | 17.53 |
|       | 1RB-Middle (12) | 1912.5 (26665) | 17.66 | 17.87 | 17.90 |
|       |                 | 1882.5 (26365) | 17.62 | 17.94 | 17.86 |
|       |                 | 1852.5 (26065) | 17.52 | 17.76 | 17.72 |
|       | 1RB-Low (0)     | 1912.5 (26665) | 17.55 | 17.88 | 17.80 |
|       |                 | 1882.5 (26365) | 17.46 | 17.70 | 17.70 |
|       |                 | 1852.5 (26065) | 17.41 | 17.69 | 17.54 |
|       | 12RB-High (13)  | 1912.5 (26665) | 17.57 | 17.55 | 17.55 |
|       |                 | 1882.5 (26365) | 17.52 | 17.55 | 17.52 |
|       |                 | 1852.5 (26065) | 17.38 | 17.40 | 17.44 |
|       | 12RB-Middle (6) | 1912.5 (26665) | 17.63 | 17.65 | 17.67 |
|       |                 | 1882.5 (26365) | 17.53 | 17.57 | 17.59 |
|       |                 | 1852.5 (26065) | 17.45 | 17.44 | 17.49 |
|       | 12RB-Low (0)    | 1912.5 (26665) | 17.57 | 17.59 | 17.59 |
|       |                 | 1882.5 (26365) | 17.51 | 17.53 | 17.58 |
|       |                 | 1852.5 (26065) | 17.41 | 17.42 | 17.45 |
|       | 25RB (0)        | 1912.5 (26665) | 17.59 | 17.61 | 17.59 |
|       |                 | 1882.5 (26365) | 17.53 | 17.55 | 17.55 |
|       |                 | 1852.5 (26065) | 17.40 | 17.45 | 17.45 |
| 10MHz | 1RB-High (49)   | 1910 (26640)   | 17.53 | 17.91 | 17.72 |
|       |                 | 1882.5 (26365) | 17.50 | 17.86 | 17.70 |
|       |                 | 1855 (26090)   | 17.37 | 17.71 | 17.59 |
|       | 1RB-Middle (24) | 1910 (26640)   | 17.63 | 18.00 | 17.82 |
|       |                 | 1882.5 (26365) | 17.57 | 17.91 | 17.83 |
|       |                 | 1855 (26090)   | 17.47 | 17.69 | 17.65 |
|       | 1RB-Low (0)     | 1910 (26640)   | 17.56 | 17.85 | 17.70 |
|       |                 | 1882.5 (26365) | 17.48 | 17.82 | 17.72 |
|       |                 | 1855 (26090)   | 17.39 | 17.73 | 17.62 |
|       | 25RB-High (25)  | 1910 (26640)   | 17.61 | 17.59 | 17.56 |
|       |                 | 1882.5 (26365) | 17.53 | 17.54 | 17.56 |
|       |                 | 1855 (26090)   | 17.44 | 17.47 | 17.47 |

|       |                  |                |       |       |       |
|-------|------------------|----------------|-------|-------|-------|
|       | 25RB-Middle (12) | 1910 (26640)   | 17.65 | 17.62 | 17.62 |
|       |                  | 1882.5 (26365) | 17.53 | 17.57 | 17.56 |
|       |                  | 1855 (26090)   | 17.47 | 17.47 | 17.47 |
|       | 25RB-Low (0)     | 1910 (26640)   | 17.67 | 17.69 | 17.68 |
|       |                  | 1882.5 (26365) | 17.59 | 17.57 | 17.57 |
|       |                  | 1855 (26090)   | 17.45 | 17.46 | 17.49 |
|       | 50RB (0)         | 1910 (26640)   | 17.61 | 17.64 | 17.66 |
|       |                  | 1882.5 (26365) | 17.60 | 17.58 | 17.58 |
|       |                  | 1855 (26090)   | 17.46 | 17.50 | 17.45 |
| 15MHz | 1RB-High (74)    | 1907.5 (26615) | 17.51 | 17.85 | 17.70 |
|       |                  | 1882.5 (26365) | 17.50 | 17.74 | 17.65 |
|       |                  | 1857.5 (26115) | 17.37 | 17.76 | 17.55 |
|       | 1RB-Middle (37)  | 1907.5 (26615) | 17.53 | 17.87 | 17.74 |
|       |                  | 1882.5 (26365) | 17.45 | 17.79 | 17.71 |
|       |                  | 1857.5 (26115) | 17.38 | 17.62 | 17.58 |
|       | 1RB-Low (0)      | 1907.5 (26615) | 17.56 | 17.92 | 17.78 |
|       |                  | 1882.5 (26365) | 17.49 | 17.74 | 17.70 |
|       |                  | 1857.5 (26115) | 17.41 | 17.69 | 17.61 |
|       | 36RB-High (38)   | 1907.5 (26615) | 17.61 | 17.60 | 17.61 |
|       |                  | 1882.5 (26365) | 17.56 | 17.53 | 17.55 |
|       |                  | 1857.5 (26115) | 17.47 | 17.47 | 17.48 |
|       | 36RB-Middle (19) | 1907.5 (26615) | 17.65 | 17.63 | 17.68 |
|       |                  | 1882.5 (26365) | 17.58 | 17.55 | 17.58 |
|       |                  | 1857.5 (26115) | 17.45 | 17.46 | 17.47 |
|       | 36RB-Low (0)     | 1907.5 (26615) | 17.68 | 17.65 | 17.64 |
|       |                  | 1882.5 (26365) | 17.57 | 17.56 | 17.58 |
|       |                  | 1857.5 (26115) | 17.48 | 17.46 | 17.45 |
|       | 75RB (0)         | 1907.5 (26615) | 17.63 | 17.65 | 17.66 |
|       |                  | 1882.5 (26365) | 17.56 | 17.59 | 17.56 |
|       |                  | 1857.5 (26115) | 17.46 | 17.46 | 17.45 |
| 20MHz | 1RB-High (99)    | 1905 (26590)   | 17.40 | 17.67 | 17.62 |
|       |                  | 1882.5 (26365) | 17.36 | 17.71 | 17.56 |
|       |                  | 1860 (26140)   | 17.29 | 17.51 | 17.49 |
|       | 1RB-Middle (50)  | 1905 (26590)   | 17.82 | 17.93 | 17.80 |
|       |                  | 1882.5 (26365) | 17.78 | 17.88 | 17.63 |
|       |                  | 1860 (26140)   | 17.75 | 17.73 | 17.63 |
|       | 1RB-Low (0)      | 1905 (26590)   | 17.40 | 17.67 | 17.60 |
|       |                  | 1882.5 (26365) | 17.32 | 17.63 | 17.50 |
|       |                  | 1860 (26140)   | 17.27 | 17.65 | 17.43 |
|       | 50RB-High (50)   | 1905 (26590)   | 17.57 | 17.58 | 17.59 |
|       |                  | 1882.5 (26365) | 17.54 | 17.57 | 17.56 |
|       |                  | 1860 (26140)   | 17.48 | 17.53 | 17.52 |

|  |                  |                |       |       |       |
|--|------------------|----------------|-------|-------|-------|
|  | 50RB-Middle (25) | 1905 (26590)   | 17.61 | 17.64 | 17.64 |
|  |                  | 1882.5 (26365) | 17.57 | 17.60 | 17.61 |
|  |                  | 1860 (26140)   | 17.47 | 17.50 | 17.46 |
|  | 50RB-Low (0)     | 1905 (26590)   | 17.80 | 17.70 | 17.68 |
|  |                  | 1882.5 (26365) | 17.75 | 17.62 | 17.63 |
|  |                  | 1860 (26140)   | 17.71 | 17.54 | 17.51 |
|  | 100RB (0)        | 1905 (26590)   | 17.62 | 17.63 | 17.62 |
|  |                  | 1882.5 (26365) | 17.59 | 17.60 | 17.59 |
|  |                  | 1860 (26140)   | 17.68 | 17.54 | 17.50 |

#### LTE Band26 (Power Level A1/B1/C1)

| LTE BAND26 |                |               |       |       |       |
|------------|----------------|---------------|-------|-------|-------|
| BANDWIDTH  | Number of RBs  | Frequency     | QPSK  | 16QAM | 64QAM |
| 1.4MHz     | 1RB-High (5)   | 848.3 (27033) | 23.74 | 22.97 | 21.87 |
|            |                | 831.5 (26865) | 23.80 | 22.99 | 22.02 |
|            |                | 814.7 (26697) | 23.77 | 22.95 | 21.92 |
|            | 1RB-Middle (3) | 848.3 (27033) | 23.84 | 23.06 | 22.03 |
|            |                | 831.5 (26865) | 23.91 | 23.21 | 22.12 |
|            |                | 814.7 (26697) | 23.86 | 23.02 | 21.98 |
|            | 1RB-Low (0)    | 848.3 (27033) | 23.73 | 22.96 | 21.92 |
|            |                | 831.5 (26865) | 23.80 | 23.03 | 21.99 |
|            |                | 814.7 (26697) | 23.78 | 22.96 | 22.02 |
|            | 3RB-High (3)   | 848.3 (27033) | 23.82 | 22.81 | 21.98 |
|            |                | 831.5 (26865) | 23.88 | 22.91 | 21.99 |
|            |                | 814.7 (26697) | 23.91 | 22.80 | 21.95 |
|            | 3RB-Middle (1) | 848.3 (27033) | 23.87 | 22.87 | 22.03 |
|            |                | 831.5 (26865) | 23.92 | 22.92 | 22.01 |
|            |                | 814.7 (26697) | 23.93 | 22.86 | 21.97 |
|            | 3RB-Low (0)    | 848.3 (27033) | 23.83 | 22.81 | 21.94 |
|            |                | 831.5 (26865) | 23.89 | 22.87 | 21.99 |
|            |                | 814.7 (26697) | 23.89 | 22.87 | 21.95 |
|            | 6RB (0)        | 848.3 (27033) | 22.86 | 21.97 | 20.88 |
|            |                | 831.5 (26865) | 22.93 | 22.02 | 20.87 |
|            |                | 814.7 (26697) | 22.90 | 21.99 | 20.85 |
| 3MHz       | 1RB-High (14)  | 847.5 (27025) | 23.77 | 23.01 | 22.08 |
|            |                | 831.5 (26865) | 23.90 | 23.11 | 22.10 |
|            |                | 815.5 (26705) | 23.11 | 22.30 | 21.13 |
|            | 1RB-Middle (7) | 847.5 (27025) | 23.90 | 23.15 | 22.13 |
|            |                | 831.5 (26865) | 23.98 | 23.19 | 22.20 |
|            |                | 815.5 (26705) | 23.13 | 22.44 | 21.28 |
|            | 1RB-Low (0)    | 847.5 (27025) | 23.79 | 23.07 | 21.92 |

|       |  |                 |               |       |       |       |
|-------|--|-----------------|---------------|-------|-------|-------|
|       |  |                 | 831.5 (26865) | 23.87 | 23.11 | 22.07 |
|       |  |                 | 815.5 (26705) | 23.08 | 22.36 | 21.25 |
|       |  |                 | 847.5 (27025) | 22.83 | 21.90 | 20.83 |
|       |  | 8RB-High (7)    | 831.5 (26865) | 22.92 | 21.95 | 20.93 |
|       |  |                 | 815.5 (26705) | 22.08 | 21.14 | 20.16 |
|       |  |                 | 847.5 (27025) | 22.84 | 21.90 | 20.89 |
|       |  | 8RB-Middle (4)  | 831.5 (26865) | 22.91 | 21.97 | 20.92 |
|       |  |                 | 815.5 (26705) | 22.11 | 21.16 | 20.18 |
|       |  |                 | 847.5 (27025) | 22.84 | 21.93 | 20.86 |
|       |  | 8RB-Low (0)     | 831.5 (26865) | 22.90 | 21.95 | 20.94 |
|       |  |                 | 815.5 (26705) | 22.10 | 21.18 | 20.17 |
|       |  |                 | 847.5 (27025) | 22.82 | 21.88 | 20.79 |
|       |  | 15RB (0)        | 831.5 (26865) | 22.91 | 21.93 | 20.91 |
|       |  |                 | 815.5 (26705) | 22.10 | 21.12 | 20.09 |
|       |  |                 | 846.5 (27015) | 23.77 | 22.96 | 22.03 |
| 5MHz  |  | 1RB-High (24)   | 831.5 (26865) | 23.84 | 23.16 | 22.13 |
|       |  |                 | 816.5 (26715) | 23.87 | 23.10 | 22.09 |
|       |  |                 | 846.5 (27015) | 23.93 | 23.17 | 22.06 |
|       |  | 1RB-Middle (12) | 831.5 (26865) | 23.99 | 23.17 | 22.14 |
|       |  |                 | 816.5 (26715) | 24.00 | 23.20 | 22.15 |
|       |  |                 | 846.5 (27015) | 23.77 | 22.96 | 21.95 |
|       |  | 1RB-Low (0)     | 831.5 (26865) | 23.84 | 23.19 | 22.07 |
|       |  |                 | 816.5 (26715) | 23.82 | 23.14 | 22.01 |
|       |  |                 | 846.5 (27015) | 22.83 | 21.82 | 20.84 |
|       |  | 12RB-High (13)  | 831.5 (26865) | 22.92 | 21.93 | 20.93 |
|       |  |                 | 816.5 (26715) | 22.96 | 21.95 | 20.95 |
|       |  |                 | 846.5 (27015) | 22.85 | 21.89 | 20.86 |
|       |  | 12RB-Middle (6) | 831.5 (26865) | 22.94 | 21.95 | 20.94 |
|       |  |                 | 816.5 (26715) | 22.95 | 21.94 | 20.93 |
|       |  |                 | 846.5 (27015) | 22.92 | 21.92 | 20.88 |
|       |  | 12RB-Low (0)    | 831.5 (26865) | 22.91 | 21.89 | 20.89 |
|       |  |                 | 816.5 (26715) | 22.94 | 21.89 | 20.92 |
|       |  |                 | 846.5 (27015) | 22.92 | 21.95 | 20.91 |
|       |  | 25RB (0)        | 831.5 (26865) | 22.91 | 21.93 | 20.89 |
|       |  |                 | 816.5 (26715) | 22.94 | 21.94 | 20.91 |
|       |  |                 | 844 (26990)   | 23.79 | 23.02 | 21.99 |
| 10MHz |  | 1RB-High (49)   | 831.5 (26865) | 23.86 | 23.18 | 21.96 |
|       |  |                 | 820 (26750)   | 23.87 | 23.20 | 22.10 |
|       |  |                 | 844 (26990)   | 23.86 | 23.15 | 22.87 |
|       |  | 1RB-Middle (24) | 831.5 (26865) | 23.92 | 23.23 | 22.02 |
|       |  |                 | 820 (26750)   | 23.94 | 23.23 | 22.18 |
|       |  |                 | 844 (26990)   | 23.86 | 23.22 | 22.35 |
|       |  | 1RB-Low (0)     | 844 (26990)   | 23.86 | 23.22 | 22.35 |

|       |                  |               |       |       |       |
|-------|------------------|---------------|-------|-------|-------|
|       |                  | 831.5 (26865) | 23.91 | 23.16 | 22.10 |
|       |                  | 820 (26750)   | 23.86 | 23.15 | 22.00 |
|       | 25RB-High (25)   | 844 (26990)   | 22.77 | 21.79 | 21.79 |
|       |                  | 831.5 (26865) | 22.93 | 21.95 | 20.95 |
|       |                  | 820 (26750)   | 23.01 | 22.04 | 21.02 |
|       | 25RB-Middle (12) | 844 (26990)   | 22.88 | 21.87 | 21.89 |
|       |                  | 831.5 (26865) | 22.94 | 21.94 | 20.94 |
|       |                  | 820 (26750)   | 22.98 | 22.00 | 21.01 |
|       | 25RB-Low (0)     | 844 (26990)   | 22.92 | 21.95 | 21.95 |
|       |                  | 831.5 (26865) | 22.98 | 22.01 | 20.95 |
|       |                  | 820 (26750)   | 23.01 | 22.03 | 21.04 |
|       | 50RB (0)         | 844 (26990)   | 22.86 | 21.88 | 20.86 |
|       |                  | 831.5 (26865) | 22.97 | 21.97 | 20.95 |
|       |                  | 820 (26750)   | 23.03 | 22.07 | 21.04 |
| 15MHz | 1RB-High (74)    | 841.5 (26965) | 23.74 | 23.05 | 21.95 |
|       |                  | 831.5 (26865) | 23.79 | 23.15 | 22.03 |
|       |                  | 822.5 (26775) | 23.80 | 23.06 | 22.01 |
|       | 1RB-Middle (37)  | 841.5 (26965) | 23.82 | 23.15 | 21.95 |
|       |                  | 831.5 (26865) | 23.84 | 23.04 | 22.04 |
|       |                  | 822.5 (26775) | 23.83 | 23.27 | 22.07 |
|       | 1RB-Low (0)      | 841.5 (26965) | 23.87 | 23.24 | 22.03 |
|       |                  | 831.5 (26865) | 23.88 | 23.25 | 22.03 |
|       |                  | 822.5 (26775) | 23.85 | 23.07 | 22.01 |
|       | 36RB-High (38)   | 841.5 (26965) | 22.80 | 21.81 | 20.81 |
|       |                  | 831.5 (26865) | 22.99 | 21.95 | 20.96 |
|       |                  | 822.5 (26775) | 22.99 | 21.95 | 20.95 |
|       | 36RB-Middle (19) | 841.5 (26965) | 22.94 | 21.94 | 20.91 |
|       |                  | 831.5 (26865) | 22.96 | 21.93 | 20.94 |
|       |                  | 822.5 (26775) | 22.95 | 21.92 | 20.94 |
|       | 36RB-Low (0)     | 841.5 (26965) | 22.96 | 21.96 | 20.94 |
|       |                  | 831.5 (26865) | 23.01 | 21.95 | 20.98 |
|       |                  | 822.5 (26775) | 22.97 | 21.95 | 20.95 |
|       | 75RB (0)         | 841.5 (26965) | 22.86 | 21.89 | 20.84 |
|       |                  | 831.5 (26865) | 22.97 | 21.98 | 20.96 |
|       |                  | 822.5 (26775) | 22.98 | 21.97 | 20.97 |

## LTE Band41 PC3 (Power Level A1)

| LTE BAND41-PC3 |                 |                |       |       |       |
|----------------|-----------------|----------------|-------|-------|-------|
| BANDWIDTH      | Number of RBs   | Frequency      | QPSK  | 16QAM | 64QAM |
| 5MHz           | 1RB-High (24)   | 2687.5 (41565) | 23.11 | 22.26 | 20.76 |
|                |                 | 2640.3(41093)  | 23.09 | 22.15 | 20.76 |
|                |                 | 2593 (40620)   | 22.96 | 22.05 | 20.58 |
|                |                 | 2545.8(40148)  | 23.04 | 22.14 | 20.69 |
|                |                 | 2498.5 (39675) | 22.83 | 21.95 | 20.48 |
|                | 1RB-Middle (12) | 2687.5 (41565) | 23.28 | 22.40 | 21.10 |
|                |                 | 2640.3(41093)  | 23.24 | 22.36 | 20.91 |
|                |                 | 2593 (40620)   | 23.12 | 22.20 | 20.88 |
|                |                 | 2545.8(40148)  | 23.23 | 22.33 | 20.87 |
|                |                 | 2498.5 (39675) | 22.99 | 22.10 | 20.74 |
|                | 1RB-Low (0)     | 2687.5 (41565) | 23.18 | 22.24 | 20.72 |
|                |                 | 2640.3(41093)  | 23.10 | 22.22 | 20.76 |
|                |                 | 2593 (40620)   | 23.01 | 22.08 | 20.64 |
|                |                 | 2545.8(40148)  | 23.07 | 22.16 | 20.70 |
|                |                 | 2498.5 (39675) | 22.84 | 21.95 | 20.48 |
|                | 12RB-High (13)  | 2687.5 (41565) | 22.12 | 21.13 | 20.19 |
|                |                 | 2640.3(41093)  | 22.08 | 21.05 | 20.11 |
|                |                 | 2593 (40620)   | 21.95 | 20.90 | 20.00 |
|                |                 | 2545.8(40148)  | 22.07 | 20.99 | 20.10 |
|                |                 | 2498.5 (39675) | 21.85 | 20.73 | 19.84 |
|                | 12RB-Middle (6) | 2687.5 (41565) | 22.22 | 21.16 | 20.22 |
|                |                 | 2640.3(41093)  | 22.15 | 21.09 | 20.20 |
|                |                 | 2593 (40620)   | 22.04 | 20.96 | 20.09 |
|                |                 | 2545.8(40148)  | 22.14 | 21.07 | 20.14 |
|                |                 | 2498.5 (39675) | 21.89 | 20.77 | 19.94 |
|                | 12RB-Low (0)    | 2687.5 (41565) | 22.15 | 21.07 | 20.17 |
|                |                 | 2640.3(41093)  | 22.11 | 21.00 | 20.12 |
|                |                 | 2593 (40620)   | 21.95 | 20.87 | 19.99 |
|                |                 | 2545.8(40148)  | 22.06 | 20.95 | 20.12 |
|                |                 | 2498.5 (39675) | 21.77 | 20.72 | 19.82 |
|                | 25RB (0)        | 2687.5 (41565) | 22.18 | 21.17 | 20.21 |
|                |                 | 2640.3(41093)  | 22.14 | 21.14 | 20.17 |
|                |                 | 2593 (40620)   | 21.99 | 20.97 | 20.07 |
|                |                 | 2545.8(40148)  | 22.08 | 21.09 | 20.13 |
|                |                 | 2498.5 (39675) | 21.79 | 20.84 | 19.96 |
| 10MHz          | 1RB-High (49)   | 2685 (41540)   | 23.19 | 22.30 | 20.81 |

|       |                  |                |       |       |       |
|-------|------------------|----------------|-------|-------|-------|
|       |                  | 2639(41080)    | 23.13 | 22.57 | 20.76 |
|       |                  | 2593 (40620)   | 23.05 | 22.09 | 20.64 |
|       |                  | 2547(40160)    | 23.13 | 22.20 | 20.76 |
|       |                  | 2501 (39700)   | 22.93 | 21.98 | 20.54 |
|       | 1RB-Middle (24)  | 2685 (41540)   | 23.28 | 22.38 | 20.96 |
|       |                  | 2639(41080)    | 23.21 | 22.31 | 20.85 |
|       |                  | 2593 (40620)   | 23.05 | 22.15 | 20.70 |
|       |                  | 2547(40160)    | 23.18 | 22.26 | 20.79 |
|       |                  | 2501 (39700)   | 22.92 | 22.08 | 20.56 |
|       | 1RB-Low (0)      | 2685 (41540)   | 23.27 | 22.35 | 20.88 |
|       |                  | 2639(41080)    | 22.98 | 22.12 | 20.88 |
|       |                  | 2593 (40620)   | 23.13 | 22.20 | 20.71 |
|       |                  | 2547(40160)    | 23.16 | 22.25 | 20.76 |
|       |                  | 2501 (39700)   | 22.91 | 21.99 | 20.53 |
|       | 25RB-High (25)   | 2685 (41540)   | 22.20 | 21.18 | 20.20 |
|       |                  | 2639(41080)    | 22.13 | 21.12 | 20.12 |
|       |                  | 2593 (40620)   | 22.06 | 21.03 | 20.04 |
|       |                  | 2547(40160)    | 22.08 | 21.10 | 20.10 |
|       |                  | 2501 (39700)   | 21.85 | 20.86 | 19.88 |
|       | 25RB-Middle (12) | 2685 (41540)   | 22.23 | 21.21 | 20.31 |
|       |                  | 2639(41080)    | 22.16 | 21.17 | 20.16 |
|       |                  | 2593 (40620)   | 22.02 | 21.02 | 20.06 |
|       |                  | 2547(40160)    | 22.18 | 21.14 | 20.18 |
|       |                  | 2501 (39700)   | 21.90 | 20.92 | 19.92 |
|       | 25RB-Low (0)     | 2685 (41540)   | 22.24 | 21.24 | 20.24 |
|       |                  | 2639(41080)    | 22.17 | 21.14 | 20.17 |
|       |                  | 2593 (40620)   | 22.06 | 21.05 | 20.13 |
|       |                  | 2547(40160)    | 22.11 | 21.13 | 20.12 |
|       |                  | 2501 (39700)   | 21.83 | 20.85 | 19.88 |
|       | 50RB (0)         | 2685 (41540)   | 22.23 | 21.27 | 20.28 |
|       |                  | 2639(41080)    | 22.17 | 21.15 | 20.12 |
|       |                  | 2593 (40620)   | 22.03 | 21.07 | 20.09 |
|       |                  | 2547(40160)    | 22.13 | 21.16 | 20.10 |
|       |                  | 2501 (39700)   | 21.83 | 20.90 | 19.84 |
| 15MHz | 1RB-High (74)    | 2682.5 (41515) | 23.09 | 22.36 | 20.60 |
|       |                  | 2637.8(41068)  | 23.23 | 22.30 | 20.77 |
|       |                  | 2593 (40620)   | 23.10 | 22.13 | 20.66 |
|       |                  | 2548.3(40173)  | 23.20 | 22.33 | 20.74 |
|       |                  | 2503.5 (39725) | 22.98 | 22.00 | 20.51 |
|       | 1RB-Middle (37)  | 2682.5 (41515) | 23.46 | 22.47 | 20.96 |

|       |                  |                |       |       |       |
|-------|------------------|----------------|-------|-------|-------|
|       |                  | 2637.8(41068)  | 23.38 | 22.43 | 20.89 |
|       |                  | 2593 (40620)   | 23.21 | 22.21 | 20.73 |
|       |                  | 2548.3(40173)  | 23.26 | 22.29 | 20.83 |
|       |                  | 2503.5 (39725) | 23.05 | 22.06 | 20.60 |
|       | 1RB-Low (0)      | 2682.5 (41515) | 23.40 | 22.42 | 20.95 |
|       |                  | 2637.8(41068)  | 23.39 | 22.39 | 20.86 |
|       |                  | 2593 (40620)   | 23.27 | 22.28 | 20.77 |
|       |                  | 2548.3(40173)  | 23.26 | 22.30 | 20.87 |
|       |                  | 2503.5 (39725) | 23.01 | 22.02 | 20.58 |
|       | 36RB-High (38)   | 2682.5 (41515) | 22.42 | 21.28 | 20.21 |
|       |                  | 2637.8(41068)  | 22.33 | 21.20 | 20.21 |
|       |                  | 2593 (40620)   | 22.18 | 21.08 | 20.03 |
|       |                  | 2548.3(40173)  | 22.28 | 21.20 | 20.14 |
|       |                  | 2503.5 (39725) | 22.06 | 20.97 | 19.94 |
|       | 36RB-Middle (19) | 2682.5 (41515) | 22.43 | 21.32 | 20.29 |
|       |                  | 2637.8(41068)  | 22.35 | 21.21 | 20.23 |
|       |                  | 2593 (40620)   | 22.22 | 21.12 | 20.08 |
|       |                  | 2548.3(40173)  | 22.30 | 21.16 | 20.15 |
|       |                  | 2503.5 (39725) | 22.03 | 20.91 | 19.94 |
|       | 36RB-Low (0)     | 2682.5 (41515) | 22.47 | 21.30 | 20.27 |
|       |                  | 2637.8(41068)  | 22.42 | 21.25 | 20.23 |
|       |                  | 2593 (40620)   | 22.27 | 21.12 | 20.13 |
|       |                  | 2548.3(40173)  | 22.27 | 21.15 | 20.16 |
|       |                  | 2503.5 (39725) | 21.96 | 20.92 | 19.88 |
|       | 75RB (0)         | 2682.5 (41515) | 22.42 | 21.39 | 20.35 |
|       |                  | 2637.8(41068)  | 22.35 | 21.30 | 20.24 |
|       |                  | 2593 (40620)   | 22.24 | 21.25 | 20.15 |
|       |                  | 2548.3(40173)  | 22.27 | 21.27 | 20.22 |
|       |                  | 2503.5 (39725) | 22.00 | 20.98 | 19.94 |
| 20MHz | 1RB-High (99)    | 2680 (41490)   | 23.11 | 22.16 | 20.63 |
|       |                  | 2636.5(41055)  | 23.02 | 22.06 | 20.55 |
|       |                  | 2593 (40620)   | 22.85 | 21.84 | 20.43 |
|       |                  | 2549.5(40185)  | 22.97 | 22.02 | 20.56 |
|       |                  | 2506 (39750)   | 22.77 | 21.83 | 20.33 |
|       | 1RB-Middle (50)  | 2680 (41490)   | 23.44 | 22.45 | 20.91 |
|       |                  | 2636.5(41055)  | 23.32 | 22.41 | 20.84 |
|       |                  | 2593 (40620)   | 23.13 | 22.23 | 20.74 |
|       |                  | 2549.5(40185)  | 23.21 | 22.25 | 20.77 |
|       |                  | 2506 (39750)   | 23.01 | 22.05 | 20.68 |
|       | 1RB-Low (0)      | 2680 (41490)   | 23.23 | 22.25 | 20.76 |

|  |                  |               |       |       |       |
|--|------------------|---------------|-------|-------|-------|
|  |                  | 2636.5(41055) | 23.13 | 22.17 | 20.59 |
|  |                  | 2593 (40620)  | 23.06 | 22.12 | 20.59 |
|  |                  | 2549.5(40185) | 23.02 | 22.11 | 20.60 |
|  |                  | 2506 (39750)  | 22.74 | 21.81 | 20.30 |
|  |                  |               |       |       |       |
|  | 50RB-High (50)   | 2680 (41490)  | 22.38 | 21.38 | 20.30 |
|  |                  | 2636.5(41055) | 22.21 | 21.23 | 20.22 |
|  |                  | 2593 (40620)  | 22.11 | 21.14 | 20.08 |
|  |                  | 2549.5(40185) | 22.18 | 21.20 | 20.09 |
|  |                  | 2506 (39750)  | 22.01 | 21.03 | 19.97 |
|  | 50RB-Middle (25) | 2680 (41490)  | 22.42 | 21.41 | 20.35 |
|  |                  | 2636.5(41055) | 22.27 | 21.22 | 20.18 |
|  |                  | 2593 (40620)  | 22.12 | 21.14 | 20.09 |
|  |                  | 2549.5(40185) | 22.20 | 21.20 | 20.08 |
|  |                  | 2506 (39750)  | 21.90 | 20.96 | 19.86 |
|  | 50RB-Low (0)     | 2680 (41490)  | 22.43 | 21.45 | 20.41 |
|  |                  | 2636.5(41055) | 22.31 | 21.31 | 20.24 |
|  |                  | 2593 (40620)  | 22.14 | 21.19 | 20.17 |
|  |                  | 2549.5(40185) | 22.18 | 21.21 | 20.13 |
|  |                  | 2506 (39750)  | 21.84 | 20.94 | 19.90 |
|  | 100RB (0)        | 2680 (41490)  | 22.43 | 21.34 | 20.34 |
|  |                  | 2636.5(41055) | 22.33 | 21.28 | 20.25 |
|  |                  | 2593 (40620)  | 22.15 | 21.20 | 20.15 |
|  |                  | 2549.5(40185) | 22.22 | 21.14 | 20.12 |
|  |                  | 2506 (39750)  | 21.97 | 20.94 | 19.89 |

#### LTE Band41 PC3 (Power Level B1/C1)

| LTE BAND41-PC3 |                 |                |       |       |       |
|----------------|-----------------|----------------|-------|-------|-------|
| BANDWIDTH      | Number of RBs   | Frequency      | QPSK  | 16QAM | 64QAM |
| 5MHz           | 1RB-High (24)   | 2687.5 (41565) | 22.05 | 22.23 | 20.79 |
|                |                 | 2640.3(41093)  | 22.07 | 22.07 | 20.77 |
|                |                 | 2593 (40620)   | 21.97 | 22.05 | 20.62 |
|                |                 | 2545.8(40148)  | 22.04 | 22.19 | 20.71 |
|                |                 | 2498.5 (39675) | 21.86 | 21.99 | 20.51 |
|                | 1RB-Middle (12) | 2687.5 (41565) | 22.42 | 22.44 | 21.05 |
|                |                 | 2640.3(41093)  | 22.27 | 22.39 | 20.92 |
|                |                 | 2593 (40620)   | 22.19 | 22.28 | 20.85 |
|                |                 | 2545.8(40148)  | 22.26 | 22.34 | 20.90 |
|                |                 | 2498.5 (39675) | 22.10 | 22.14 | 20.75 |
|                | 1RB-Low (0)     | 2687.5 (41565) | 22.22 | 22.28 | 20.81 |

|       |                 |                |       |       |       |
|-------|-----------------|----------------|-------|-------|-------|
|       |                 | 2640.3(41093)  | 22.13 | 22.15 | 20.76 |
|       |                 | 2593 (40620)   | 22.00 | 22.12 | 20.64 |
|       |                 | 2545.8(40148)  | 22.09 | 22.22 | 20.75 |
|       |                 | 2498.5 (39675) | 21.89 | 22.00 | 20.58 |
|       | 12RB-High (13)  | 2687.5 (41565) | 22.15 | 21.03 | 20.19 |
|       |                 | 2640.3(41093)  | 22.10 | 21.04 | 20.13 |
|       |                 | 2593 (40620)   | 21.96 | 20.92 | 19.98 |
|       |                 | 2545.8(40148)  | 22.08 | 21.03 | 20.12 |
|       |                 | 2498.5 (39675) | 21.88 | 20.84 | 19.91 |
|       | 12RB-Middle (6) | 2687.5 (41565) | 22.22 | 21.10 | 20.24 |
|       |                 | 2640.3(41093)  | 22.16 | 21.08 | 20.19 |
|       |                 | 2593 (40620)   | 22.02 | 20.99 | 20.11 |
|       |                 | 2545.8(40148)  | 22.12 | 21.08 | 20.17 |
|       |                 | 2498.5 (39675) | 21.85 | 20.92 | 19.97 |
|       | 12RB-Low (0)    | 2687.5 (41565) | 22.16 | 21.07 | 20.23 |
|       |                 | 2640.3(41093)  | 22.11 | 21.05 | 20.14 |
|       |                 | 2593 (40620)   | 22.00 | 20.95 | 20.04 |
|       |                 | 2545.8(40148)  | 22.09 | 21.02 | 20.12 |
|       |                 | 2498.5 (39675) | 21.86 | 20.83 | 19.89 |
|       | 25RB (0)        | 2687.5 (41565) | 22.10 | 21.22 | 20.27 |
|       |                 | 2640.3(41093)  | 22.16 | 21.12 | 20.18 |
|       |                 | 2593 (40620)   | 22.02 | 21.06 | 20.04 |
|       |                 | 2545.8(40148)  | 22.14 | 21.13 | 20.15 |
|       |                 | 2498.5 (39675) | 21.90 | 20.92 | 19.94 |
| 10MHz | 1RB-High (49)   | 2685 (41540)   | 22.12 | 22.26 | 20.84 |
|       |                 | 2639(41080)    | 22.10 | 22.11 | 20.79 |
|       |                 | 2593 (40620)   | 22.00 | 22.06 | 20.65 |
|       |                 | 2547(40160)    | 22.09 | 22.18 | 20.75 |
|       |                 | 2501 (39700)   | 21.92 | 22.03 | 20.54 |
|       | 1RB-Middle (24) | 2685 (41540)   | 22.19 | 22.35 | 20.85 |
|       |                 | 2639(41080)    | 22.18 | 22.29 | 20.87 |
|       |                 | 2593 (40620)   | 21.94 | 22.14 | 20.62 |
|       |                 | 2547(40160)    | 22.19 | 22.26 | 20.84 |
|       |                 | 2501 (39700)   | 21.86 | 22.08 | 20.53 |
|       | 1RB-Low (0)     | 2685 (41540)   | 22.14 | 22.31 | 20.80 |
|       |                 | 2639(41080)    | 22.20 | 22.29 | 20.86 |
|       |                 | 2593 (40620)   | 22.06 | 22.23 | 20.72 |
|       |                 | 2547(40160)    | 22.13 | 22.27 | 20.80 |
|       |                 | 2501 (39700)   | 21.90 | 22.02 | 20.59 |
|       | 25RB-High (25)  | 2685 (41540)   | 22.14 | 21.14 | 20.22 |

|       |                  |                |       |       |       |
|-------|------------------|----------------|-------|-------|-------|
|       |                  | 2639(41080)    | 22.10 | 21.10 | 20.16 |
|       |                  | 2593 (40620)   | 22.02 | 21.08 | 20.07 |
|       |                  | 2547(40160)    | 22.04 | 21.11 | 20.14 |
|       |                  | 2501 (39700)   | 21.86 | 20.91 | 19.98 |
|       |                  |                |       |       |       |
|       | 25RB-Middle (12) | 2685 (41540)   | 22.17 | 21.22 | 20.23 |
|       |                  | 2639(41080)    | 22.17 | 21.13 | 20.22 |
|       |                  | 2593 (40620)   | 21.97 | 21.03 | 20.05 |
|       |                  | 2547(40160)    | 22.11 | 21.12 | 20.20 |
|       |                  | 2501 (39700)   | 21.87 | 20.94 | 19.99 |
|       | 25RB-Low (0)     | 2685 (41540)   | 22.21 | 21.20 | 20.26 |
|       |                  | 2639(41080)    | 22.10 | 21.14 | 20.18 |
|       |                  | 2593 (40620)   | 22.02 | 21.05 | 20.11 |
|       |                  | 2547(40160)    | 22.11 | 21.13 | 20.18 |
|       |                  | 2501 (39700)   | 21.85 | 20.93 | 19.91 |
|       | 50RB (0)         | 2685 (41540)   | 22.15 | 21.22 | 20.27 |
|       |                  | 2639(41080)    | 22.16 | 21.15 | 20.16 |
|       |                  | 2593 (40620)   | 22.07 | 21.15 | 20.07 |
|       |                  | 2547(40160)    | 22.08 | 21.16 | 20.13 |
|       |                  | 2501 (39700)   | 21.89 | 20.96 | 19.91 |
| 15MHz | 1RB-High (74)    | 2682.5 (41515) | 22.01 | 22.21 | 20.77 |
|       |                  | 2637.8(41068)  | 22.02 | 22.12 | 20.68 |
|       |                  | 2593 (40620)   | 21.90 | 22.00 | 20.59 |
|       |                  | 2548.3(40173)  | 22.02 | 22.20 | 20.72 |
|       |                  | 2503.5 (39725) | 21.85 | 21.98 | 20.54 |
|       | 1RB-Middle (37)  | 2682.5 (41515) | 22.16 | 22.29 | 20.88 |
|       |                  | 2637.8(41068)  | 22.08 | 22.26 | 20.81 |
|       |                  | 2593 (40620)   | 21.93 | 22.14 | 20.63 |
|       |                  | 2548.3(40173)  | 22.10 | 22.21 | 20.77 |
|       |                  | 2503.5 (39725) | 21.94 | 22.06 | 20.60 |
|       | 1RB-Low (0)      | 2682.5 (41515) | 22.05 | 22.28 | 20.71 |
|       |                  | 2637.8(41068)  | 22.18 | 22.17 | 20.83 |
|       |                  | 2593 (40620)   | 22.05 | 22.17 | 20.70 |
|       |                  | 2548.3(40173)  | 22.09 | 22.21 | 20.78 |
|       |                  | 2503.5 (39725) | 21.87 | 21.95 | 20.55 |
|       | 36RB-High (38)   | 2682.5 (41515) | 22.11 | 21.16 | 20.15 |
|       |                  | 2637.8(41068)  | 22.11 | 21.08 | 20.09 |
|       |                  | 2593 (40620)   | 21.98 | 21.00 | 19.96 |
|       |                  | 2548.3(40173)  | 22.08 | 21.09 | 20.08 |
|       |                  | 2503.5 (39725) | 21.93 | 20.87 | 19.93 |
|       | 36RB-Middle (19) | 2682.5 (41515) | 22.20 | 21.16 | 20.20 |

|       |                  |                |       |       |       |
|-------|------------------|----------------|-------|-------|-------|
|       |                  | 2637.8(41068)  | 22.15 | 21.09 | 20.14 |
|       |                  | 2593 (40620)   | 21.97 | 21.00 | 20.02 |
|       |                  | 2548.3(40173)  | 22.13 | 21.11 | 20.13 |
|       |                  | 2503.5 (39725) | 21.91 | 20.82 | 19.89 |
|       | 36RB-Low (0)     | 2682.5 (41515) | 22.21 | 21.18 | 20.24 |
|       |                  | 2637.8(41068)  | 22.18 | 21.14 | 20.15 |
|       |                  | 2593 (40620)   | 22.05 | 21.04 | 20.06 |
|       |                  | 2548.3(40173)  | 22.08 | 21.06 | 20.12 |
|       |                  | 2503.5 (39725) | 21.88 | 20.86 | 19.86 |
|       | 75RB (0)         | 2682.5 (41515) | 22.18 | 21.25 | 20.27 |
|       |                  | 2637.8(41068)  | 22.14 | 21.15 | 20.14 |
|       |                  | 2593 (40620)   | 22.07 | 21.12 | 20.10 |
|       |                  | 2548.3(40173)  | 22.14 | 21.16 | 20.16 |
|       |                  | 2503.5 (39725) | 21.84 | 20.95 | 19.90 |
| 20MHz | 1RB-High (99)    | 2680 (41490)   | 21.86 | 22.04 | 20.56 |
|       |                  | 2636.5(41055)  | 21.82 | 21.97 | 20.48 |
|       |                  | 2593 (40620)   | 21.70 | 21.74 | 20.37 |
|       |                  | 2549.5(40185)  | 21.81 | 21.94 | 20.45 |
|       |                  | 2506 (39750)   | 21.62 | 21.78 | 20.30 |
|       | 1RB-Middle (50)  | 2680 (41490)   | 22.12 | 22.35 | 20.85 |
|       |                  | 2636.5(41055)  | 22.11 | 22.18 | 20.78 |
|       |                  | 2593 (40620)   | 22.02 | 22.05 | 20.77 |
|       |                  | 2549.5(40185)  | 22.02 | 22.14 | 20.77 |
|       |                  | 2506 (39750)   | 21.85 | 21.99 | 20.49 |
|       | 1RB-Low (0)      | 2680 (41490)   | 21.97 | 22.11 | 20.67 |
|       |                  | 2636.5(41055)  | 21.91 | 22.03 | 20.62 |
|       |                  | 2593 (40620)   | 21.89 | 21.99 | 20.48 |
|       |                  | 2549.5(40185)  | 21.88 | 22.00 | 20.54 |
|       |                  | 2506 (39750)   | 21.62 | 21.72 | 20.28 |
|       | 50RB-High (50)   | 2680 (41490)   | 22.13 | 21.21 | 20.21 |
|       |                  | 2636.5(41055)  | 22.03 | 21.15 | 20.11 |
|       |                  | 2593 (40620)   | 21.90 | 21.00 | 20.03 |
|       |                  | 2549.5(40185)  | 22.01 | 21.11 | 20.07 |
|       |                  | 2506 (39750)   | 21.85 | 20.88 | 19.95 |
|       | 50RB-Middle (25) | 2680 (41490)   | 22.18 | 21.25 | 20.25 |
|       |                  | 2636.5(41055)  | 22.05 | 21.10 | 20.08 |
|       |                  | 2593 (40620)   | 21.95 | 21.06 | 20.06 |
|       |                  | 2549.5(40185)  | 22.04 | 21.10 | 20.06 |
|       |                  | 2506 (39750)   | 21.78 | 20.84 | 19.79 |
|       | 50RB-Low (0)     | 2680 (41490)   | 22.23 | 21.32 | 20.30 |

|  |           |               |       |       |       |
|--|-----------|---------------|-------|-------|-------|
|  |           | 2636.5(41055) | 22.12 | 21.14 | 20.18 |
|  |           | 2593 (40620)  | 22.03 | 21.07 | 20.10 |
|  |           | 2549.5(40185) | 22.00 | 21.09 | 20.08 |
|  |           | 2506 (39750)  | 21.73 | 20.81 | 19.84 |
|  | 100RB (0) | 2680 (41490)  | 22.21 | 21.24 | 20.27 |
|  |           | 2636.5(41055) | 22.14 | 21.18 | 20.11 |
|  |           | 2593 (40620)  | 22.07 | 21.05 | 20.10 |
|  |           | 2549.5(40185) | 22.04 | 21.08 | 20.07 |
|  |           | 2506 (39750)  | 21.83 | 20.82 | 19.89 |
|  |           |               |       |       |       |

#### LTE Band41 PC2 (Power Level A1)

| LTE BAND41-PC2 |                 |                |       |       |       |
|----------------|-----------------|----------------|-------|-------|-------|
| BANDWIDTH      | Number of RBs   | Frequency      | QPSK  | 16QAM | 64QAM |
| 5MHz           | 1RB-High (24)   | 2687.5 (41565) | 26.08 | 25.31 | 24.10 |
|                |                 | 2640.3(41093)  | 26.02 | 25.24 | 24.02 |
|                |                 | 2593 (40620)   | 25.89 | 25.08 | 23.88 |
|                |                 | 2545.8(40148)  | 25.99 | 25.20 | 23.99 |
|                |                 | 2498.5 (39675) | 25.78 | 24.98 | 23.78 |
|                | 1RB-Middle (12) | 2687.5 (41565) | 26.12 | 25.35 | 24.14 |
|                |                 | 2640.3(41093)  | 26.08 | 25.31 | 24.04 |
|                |                 | 2593 (40620)   | 25.97 | 25.13 | 23.92 |
|                |                 | 2545.8(40148)  | 26.07 | 25.24 | 23.94 |
|                |                 | 2498.5 (39675) | 25.81 | 25.01 | 23.77 |
|                | 1RB-Low (0)     | 2687.5 (41565) | 26.10 | 25.34 | 24.14 |
|                |                 | 2640.3(41093)  | 26.07 | 25.25 | 24.04 |
|                |                 | 2593 (40620)   | 25.95 | 25.13 | 23.94 |
|                |                 | 2545.8(40148)  | 26.02 | 25.23 | 23.99 |
|                |                 | 2498.5 (39675) | 25.79 | 24.99 | 23.79 |
|                | 12RB-High (13)  | 2687.5 (41565) | 25.12 | 24.15 | 23.20 |
|                |                 | 2640.3(41093)  | 25.10 | 24.12 | 23.18 |
|                |                 | 2593 (40620)   | 24.96 | 23.99 | 23.01 |
|                |                 | 2545.8(40148)  | 25.03 | 24.08 | 23.12 |
|                |                 | 2498.5 (39675) | 24.83 | 23.87 | 22.88 |
|                | 12RB-Middle (6) | 2687.5 (41565) | 25.14 | 24.20 | 23.22 |
|                |                 | 2640.3(41093)  | 25.11 | 24.15 | 23.20 |
|                |                 | 2593 (40620)   | 24.99 | 24.02 | 23.06 |
|                |                 | 2545.8(40148)  | 25.10 | 24.11 | 23.16 |
|                |                 | 2498.5 (39675) | 24.87 | 23.90 | 22.92 |
|                | 12RB-Low (0)    | 2687.5 (41565) | 25.13 | 24.17 | 23.21 |

|       |                  |                |       |       |       |
|-------|------------------|----------------|-------|-------|-------|
| 10MHz |                  | 2640.3(41093)  | 25.10 | 24.14 | 23.17 |
|       |                  | 2593 (40620)   | 24.98 | 24.01 | 23.03 |
|       |                  | 2545.8(40148)  | 25.04 | 24.06 | 23.12 |
|       |                  | 2498.5 (39675) | 24.84 | 23.86 | 22.86 |
|       |                  | 2687.5 (41565) | 25.14 | 24.20 | 23.23 |
|       | 25RB (0)         | 2640.3(41093)  | 25.11 | 24.15 | 23.20 |
|       |                  | 2593 (40620)   | 24.99 | 24.02 | 23.04 |
|       |                  | 2545.8(40148)  | 25.09 | 24.17 | 23.14 |
|       |                  | 2498.5 (39675) | 24.84 | 23.89 | 22.91 |
|       |                  | 2685 (41540)   | 26.09 | 25.31 | 24.12 |
|       | 1RB-High (49)    | 2639(41080)    | 26.03 | 25.24 | 24.03 |
|       |                  | 2593 (40620)   | 25.93 | 25.12 | 23.89 |
|       |                  | 2547(40160)    | 26.00 | 25.24 | 23.94 |
|       |                  | 2501 (39700)   | 25.80 | 25.04 | 23.82 |
|       |                  | 2685 (41540)   | 26.16 | 25.43 | 24.20 |
|       | 1RB-Middle (24)  | 2639(41080)    | 26.10 | 25.32 | 24.11 |
|       |                  | 2593 (40620)   | 25.98 | 25.17 | 23.96 |
|       |                  | 2547(40160)    | 26.10 | 25.31 | 24.07 |
|       |                  | 2501 (39700)   | 25.83 | 25.04 | 23.85 |
|       |                  | 2685 (41540)   | 26.16 | 25.39 | 24.15 |
|       | 1RB-Low (0)      | 2639(41080)    | 26.11 | 25.32 | 24.08 |
|       |                  | 2593 (40620)   | 26.01 | 25.21 | 23.98 |
|       |                  | 2547(40160)    | 26.08 | 25.25 | 24.04 |
|       |                  | 2501 (39700)   | 25.80 | 25.00 | 23.80 |
|       |                  | 2685 (41540)   | 25.13 | 24.18 | 23.25 |
|       | 25RB-High (25)   | 2639(41080)    | 25.12 | 24.15 | 23.21 |
|       |                  | 2593 (40620)   | 25.01 | 24.06 | 23.06 |
|       |                  | 2547(40160)    | 25.03 | 24.08 | 23.15 |
|       |                  | 2501 (39700)   | 24.86 | 23.93 | 22.93 |
|       |                  | 2685 (41540)   | 25.16 | 24.22 | 23.26 |
|       | 25RB-Middle (12) | 2639(41080)    | 25.11 | 24.16 | 23.24 |
|       |                  | 2593 (40620)   | 25.00 | 24.02 | 23.05 |
|       |                  | 2547(40160)    | 25.07 | 24.13 | 23.18 |
|       |                  | 2501 (39700)   | 24.87 | 23.88 | 22.94 |
|       |                  | 2685 (41540)   | 25.20 | 24.25 | 23.30 |
|       | 25RB-Low (0)     | 2639(41080)    | 25.14 | 24.18 | 23.23 |
|       |                  | 2593 (40620)   | 25.04 | 24.09 | 23.08 |
|       |                  | 2547(40160)    | 25.01 | 24.04 | 23.13 |
|       |                  | 2501 (39700)   | 24.84 | 23.88 | 22.87 |
|       |                  | 2685 (41540)   | 25.18 | 24.22 | 23.20 |
|       | 50RB (0)         | 2685 (41540)   | 25.18 | 24.22 | 23.20 |

|       |                  |                |       |       |       |
|-------|------------------|----------------|-------|-------|-------|
|       |                  | 2639(41080)    | 25.13 | 24.19 | 23.17 |
|       |                  | 2593 (40620)   | 25.06 | 24.11 | 23.04 |
|       |                  | 2547(40160)    | 25.04 | 24.10 | 23.09 |
|       |                  | 2501 (39700)   | 24.86 | 23.92 | 22.86 |
| 15MHz | 1RB-High (74)    | 2682.5 (41515) | 26.02 | 25.26 | 24.04 |
|       |                  | 2637.8(41068)  | 25.97 | 25.18 | 23.96 |
|       |                  | 2593 (40620)   | 25.82 | 25.04 | 23.82 |
|       |                  | 2548.3(40173)  | 25.99 | 25.16 | 23.82 |
|       |                  | 2503.5 (39725) | 25.77 | 24.98 | 23.69 |
|       | 1RB-Middle (37)  | 2682.5 (41515) | 26.09 | 25.35 | 24.14 |
|       |                  | 2637.8(41068)  | 26.03 | 25.28 | 24.04 |
|       |                  | 2593 (40620)   | 25.92 | 25.11 | 23.89 |
|       |                  | 2548.3(40173)  | 26.04 | 25.21 | 23.99 |
|       |                  | 2503.5 (39725) | 25.78 | 25.00 | 23.79 |
|       | 1RB-Low (0)      | 2682.5 (41515) | 26.10 | 25.37 | 24.14 |
|       |                  | 2637.8(41068)  | 26.07 | 25.30 | 24.06 |
|       |                  | 2593 (40620)   | 25.99 | 25.18 | 23.96 |
|       |                  | 2548.3(40173)  | 26.03 | 25.22 | 23.90 |
|       |                  | 2503.5 (39725) | 25.74 | 24.93 | 23.73 |
|       | 36RB-High (38)   | 2682.5 (41515) | 25.13 | 24.10 | 23.13 |
|       |                  | 2637.8(41068)  | 25.10 | 24.06 | 23.06 |
|       |                  | 2593 (40620)   | 24.99 | 23.95 | 22.96 |
|       |                  | 2548.3(40173)  | 25.03 | 24.02 | 23.04 |
|       |                  | 2503.5 (39725) | 24.85 | 23.77 | 22.86 |
|       | 36RB-Middle (19) | 2682.5 (41515) | 25.16 | 24.13 | 23.15 |
|       |                  | 2637.8(41068)  | 25.12 | 24.09 | 23.08 |
|       |                  | 2593 (40620)   | 24.99 | 23.95 | 22.97 |
|       |                  | 2548.3(40173)  | 25.06 | 24.05 | 23.08 |
|       |                  | 2503.5 (39725) | 24.75 | 23.89 | 22.83 |
|       | 36RB-Low (0)     | 2682.5 (41515) | 25.18 | 24.16 | 23.20 |
|       |                  | 2637.8(41068)  | 25.14 | 24.11 | 23.14 |
|       |                  | 2593 (40620)   | 25.04 | 24.01 | 23.01 |
|       |                  | 2548.3(40173)  | 25.07 | 24.04 | 23.06 |
|       |                  | 2503.5 (39725) | 24.89 | 23.85 | 22.81 |
|       | 75RB (0)         | 2682.5 (41515) | 25.15 | 24.18 | 23.19 |
|       |                  | 2637.8(41068)  | 25.10 | 24.14 | 23.23 |
|       |                  | 2593 (40620)   | 25.02 | 24.05 | 23.03 |
|       |                  | 2548.3(40173)  | 25.04 | 24.08 | 23.08 |
|       |                  | 2503.5 (39725) | 24.81 | 23.93 | 22.86 |
| 20MHz | 1RB-High (99)    | 2680 (41490)   | 25.87 | 25.08 | 23.87 |

|  |                  |               |       |       |       |
|--|------------------|---------------|-------|-------|-------|
|  |                  | 2636.5(41055) | 25.80 | 25.01 | 23.79 |
|  |                  | 2593 (40620)  | 25.66 | 24.84 | 23.62 |
|  |                  | 2549.5(40185) | 25.80 | 24.99 | 23.75 |
|  |                  | 2506 (39750)  | 25.58 | 24.80 | 23.58 |
|  | 1RB-Middle (50)  | 2680 (41490)  | 26.14 | 25.36 | 24.15 |
|  |                  | 2636.5(41055) | 26.08 | 25.27 | 24.06 |
|  |                  | 2593 (40620)  | 25.95 | 25.12 | 23.91 |
|  |                  | 2549.5(40185) | 26.05 | 25.22 | 24.01 |
|  |                  | 2506 (39750)  | 25.78 | 24.96 | 23.78 |
|  | 1RB-Low (0)      | 2680 (41490)  | 25.98 | 25.21 | 23.99 |
|  |                  | 2636.5(41055) | 25.91 | 25.07 | 23.87 |
|  |                  | 2593 (40620)  | 25.85 | 25.05 | 23.81 |
|  |                  | 2549.5(40185) | 25.84 | 25.02 | 23.81 |
|  |                  | 2506 (39750)  | 25.56 | 24.74 | 23.54 |
|  | 50RB-High (50)   | 2680 (41490)  | 25.11 | 24.17 | 23.15 |
|  |                  | 2636.5(41055) | 25.08 | 24.13 | 23.12 |
|  |                  | 2593 (40620)  | 24.96 | 24.00 | 22.94 |
|  |                  | 2549.5(40185) | 25.04 | 24.08 | 23.06 |
|  |                  | 2506 (39750)  | 24.85 | 23.92 | 22.85 |
|  | 50RB-Middle (25) | 2680 (41490)  | 25.19 | 24.25 | 23.23 |
|  |                  | 2636.5(41055) | 25.09 | 24.15 | 23.11 |
|  |                  | 2593 (40620)  | 25.01 | 24.06 | 23.02 |
|  |                  | 2549.5(40185) | 25.04 | 24.11 | 23.06 |
|  |                  | 2506 (39750)  | 24.76 | 23.85 | 22.80 |
|  | 50RB-Low (0)     | 2680 (41490)  | 25.20 | 24.23 | 23.24 |
|  |                  | 2636.5(41055) | 25.13 | 24.20 | 23.16 |
|  |                  | 2593 (40620)  | 25.01 | 24.07 | 23.03 |
|  |                  | 2549.5(40185) | 25.04 | 24.07 | 23.05 |
|  |                  | 2506 (39750)  | 24.74 | 23.82 | 22.77 |
|  | 100RB (0)        | 2680 (41490)  | 25.18 | 24.22 | 23.21 |
|  |                  | 2636.5(41055) | 25.12 | 24.15 | 23.14 |
|  |                  | 2593 (40620)  | 25.03 | 24.03 | 23.01 |
|  |                  | 2549.5(40185) | 25.06 | 24.08 | 23.04 |
|  |                  | 2506 (39750)  | 24.79 | 23.83 | 22.81 |

## LTE Band41 PC2 (Power Level B1/C1)

| LTE BAND41-PC2 |                 |                |       |       |       |
|----------------|-----------------|----------------|-------|-------|-------|
| BANDWIDTH      | Number of RBs   | Frequency      | QPSK  | 16QAM | 64QAM |
| 5MHz           | 1RB-High (24)   | 2687.5 (41565) | 25.09 | 25.28 | 24.08 |
|                |                 | 2640.3(41093)  | 25.06 | 25.24 | 24.03 |
|                |                 | 2593 (40620)   | 24.94 | 25.07 | 23.88 |
|                |                 | 2545.8(40148)  | 24.95 | 25.21 | 23.95 |
|                |                 | 2498.5 (39675) | 24.84 | 25.00 | 23.81 |
|                | 1RB-Middle (12) | 2687.5 (41565) | 25.14 | 25.32 | 24.15 |
|                |                 | 2640.3(41093)  | 25.12 | 25.26 | 24.08 |
|                |                 | 2593 (40620)   | 25.00 | 25.13 | 23.93 |
|                |                 | 2545.8(40148)  | 25.02 | 25.25 | 23.98 |
|                |                 | 2498.5 (39675) | 24.86 | 25.03 | 23.83 |
|                | 1RB-Low (0)     | 2687.5 (41565) | 25.12 | 25.30 | 24.14 |
|                |                 | 2640.3(41093)  | 25.09 | 25.24 | 24.06 |
|                |                 | 2593 (40620)   | 24.99 | 25.13 | 23.94 |
|                |                 | 2545.8(40148)  | 25.14 | 25.23 | 24.04 |
|                |                 | 2498.5 (39675) | 24.84 | 24.98 | 23.82 |
|                | 12RB-High (13)  | 2687.5 (41565) | 25.14 | 24.18 | 23.22 |
|                |                 | 2640.3(41093)  | 25.13 | 24.15 | 23.19 |
|                |                 | 2593 (40620)   | 24.98 | 24.02 | 23.02 |
|                |                 | 2545.8(40148)  | 25.16 | 24.17 | 23.18 |
|                |                 | 2498.5 (39675) | 24.91 | 23.92 | 22.94 |
|                | 12RB-Middle (6) | 2687.5 (41565) | 25.17 | 24.22 | 23.26 |
|                |                 | 2640.3(41093)  | 25.15 | 24.15 | 23.20 |
|                |                 | 2593 (40620)   | 25.03 | 24.04 | 23.07 |
|                |                 | 2545.8(40148)  | 25.15 | 24.22 | 23.21 |
|                |                 | 2498.5 (39675) | 24.92 | 23.95 | 22.99 |
|                | 12RB-Low (0)    | 2687.5 (41565) | 25.15 | 24.19 | 23.23 |
|                |                 | 2640.3(41093)  | 25.13 | 24.13 | 23.20 |
|                |                 | 2593 (40620)   | 25.02 | 24.04 | 23.02 |
|                |                 | 2545.8(40148)  | 25.09 | 24.14 | 23.16 |
|                |                 | 2498.5 (39675) | 24.88 | 23.92 | 22.92 |
|                | 25RB (0)        | 2687.5 (41565) | 25.16 | 24.21 | 23.25 |
|                |                 | 2640.3(41093)  | 25.15 | 24.19 | 23.22 |
|                |                 | 2593 (40620)   | 25.00 | 24.05 | 23.06 |
|                |                 | 2545.8(40148)  | 25.10 | 24.12 | 23.17 |
|                |                 | 2498.5 (39675) | 24.89 | 23.95 | 22.97 |
| 10MHz          | 1RB-High (49)   | 2685 (41540)   | 25.11 | 25.33 | 24.12 |

|       |                  |                |       |       |       |
|-------|------------------|----------------|-------|-------|-------|
|       |                  | 2639(41080)    | 25.07 | 25.25 | 24.04 |
|       |                  | 2593 (40620)   | 24.96 | 25.15 | 23.91 |
|       |                  | 2547(40160)    | 25.07 | 25.24 | 24.13 |
|       |                  | 2501 (39700)   | 24.89 | 25.06 | 23.87 |
|       | 1RB-Middle (24)  | 2685 (41540)   | 25.19 | 25.39 | 24.21 |
|       |                  | 2639(41080)    | 25.16 | 25.33 | 24.12 |
|       |                  | 2593 (40620)   | 25.02 | 25.20 | 24.00 |
|       |                  | 2547(40160)    | 25.13 | 25.33 | 24.11 |
|       |                  | 2501 (39700)   | 24.91 | 25.07 | 23.87 |
|       | 1RB-Low (0)      | 2685 (41540)   | 25.15 | 25.37 | 24.18 |
|       |                  | 2639(41080)    | 25.13 | 25.33 | 24.10 |
|       |                  | 2593 (40620)   | 25.02 | 25.22 | 24.00 |
|       |                  | 2547(40160)    | 25.10 | 25.29 | 24.09 |
|       |                  | 2501 (39700)   | 24.85 | 25.08 | 23.85 |
|       | 25RB-High (25)   | 2685 (41540)   | 25.15 | 24.20 | 23.26 |
|       |                  | 2639(41080)    | 25.13 | 24.19 | 23.24 |
|       |                  | 2593 (40620)   | 25.05 | 24.08 | 23.10 |
|       |                  | 2547(40160)    | 25.08 | 24.15 | 23.20 |
|       |                  | 2501 (39700)   | 24.93 | 23.96 | 22.99 |
|       | 25RB-Middle (12) | 2685 (41540)   | 25.18 | 24.22 | 23.28 |
|       |                  | 2639(41080)    | 25.12 | 24.18 | 23.23 |
|       |                  | 2593 (40620)   | 25.00 | 24.05 | 23.09 |
|       |                  | 2547(40160)    | 25.10 | 24.16 | 23.23 |
|       |                  | 2501 (39700)   | 24.88 | 23.95 | 23.00 |
|       | 25RB-Low (0)     | 2685 (41540)   | 25.20 | 24.26 | 23.29 |
|       |                  | 2639(41080)    | 25.16 | 24.22 | 23.27 |
|       |                  | 2593 (40620)   | 25.08 | 24.12 | 23.11 |
|       |                  | 2547(40160)    | 25.06 | 24.13 | 23.18 |
|       |                  | 2501 (39700)   | 24.91 | 23.96 | 22.95 |
|       | 50RB (0)         | 2685 (41540)   | 25.19 | 24.24 | 23.24 |
|       |                  | 2639(41080)    | 25.16 | 24.21 | 23.19 |
|       |                  | 2593 (40620)   | 25.07 | 24.13 | 23.05 |
|       |                  | 2547(40160)    | 25.07 | 24.11 | 23.15 |
|       |                  | 2501 (39700)   | 24.92 | 23.98 | 22.91 |
| 15MHz | 1RB-High (74)    | 2682.5 (41515) | 25.02 | 25.23 | 24.04 |
|       |                  | 2637.8(41068)  | 24.99 | 25.18 | 23.99 |
|       |                  | 2593 (40620)   | 24.98 | 25.05 | 23.83 |
|       |                  | 2548.3(40173)  | 24.97 | 25.18 | 24.04 |
|       |                  | 2503.5 (39725) | 24.91 | 25.00 | 23.78 |
|       | 1RB-Middle (37)  | 2682.5 (41515) | 25.13 | 25.33 | 24.13 |

|       |                  |                |       |       |       |
|-------|------------------|----------------|-------|-------|-------|
|       |                  | 2637.8(41068)  | 25.05 | 25.21 | 24.06 |
|       |                  | 2593 (40620)   | 24.98 | 25.12 | 23.91 |
|       |                  | 2548.3(40173)  | 25.05 | 25.23 | 24.02 |
|       |                  | 2503.5 (39725) | 24.97 | 25.02 | 23.83 |
|       | 1RB-Low (0)      | 2682.5 (41515) | 25.12 | 25.33 | 24.14 |
|       |                  | 2637.8(41068)  | 25.09 | 25.29 | 24.08 |
|       |                  | 2593 (40620)   | 24.99 | 25.18 | 23.99 |
|       |                  | 2548.3(40173)  | 25.03 | 25.23 | 24.03 |
|       |                  | 2503.5 (39725) | 24.80 | 24.97 | 23.78 |
|       | 36RB-High (38)   | 2682.5 (41515) | 25.12 | 24.09 | 23.17 |
|       |                  | 2637.8(41068)  | 25.10 | 24.08 | 23.10 |
|       |                  | 2593 (40620)   | 24.98 | 23.99 | 22.98 |
|       |                  | 2548.3(40173)  | 25.08 | 24.04 | 23.08 |
|       |                  | 2503.5 (39725) | 25.00 | 23.91 | 22.93 |
|       | 36RB-Middle (19) | 2682.5 (41515) | 25.16 | 24.13 | 23.15 |
|       |                  | 2637.8(41068)  | 25.11 | 24.10 | 23.14 |
|       |                  | 2593 (40620)   | 25.02 | 23.96 | 23.02 |
|       |                  | 2548.3(40173)  | 25.10 | 24.06 | 23.09 |
|       |                  | 2503.5 (39725) | 24.94 | 23.79 | 22.88 |
|       | 36RB-Low (0)     | 2682.5 (41515) | 25.19 | 24.17 | 23.21 |
|       |                  | 2637.8(41068)  | 25.15 | 24.13 | 23.13 |
|       |                  | 2593 (40620)   | 25.05 | 24.03 | 23.02 |
|       |                  | 2548.3(40173)  | 25.09 | 24.07 | 23.10 |
|       |                  | 2503.5 (39725) | 24.85 | 23.85 | 22.87 |
|       | 75RB (0)         | 2682.5 (41515) | 25.15 | 24.19 | 23.22 |
|       |                  | 2637.8(41068)  | 25.12 | 24.15 | 23.15 |
|       |                  | 2593 (40620)   | 24.96 | 24.04 | 23.05 |
|       |                  | 2548.3(40173)  | 25.08 | 24.12 | 23.12 |
|       |                  | 2503.5 (39725) | 24.78 | 23.91 | 22.91 |
| 20MHz | 1RB-High (99)    | 2680 (41490)   | 24.92 | 25.14 | 23.93 |
|       |                  | 2636.5(41055)  | 24.88 | 25.07 | 23.86 |
|       |                  | 2593 (40620)   | 24.72 | 24.91 | 23.68 |
|       |                  | 2549.5(40185)  | 24.84 | 25.04 | 23.81 |
|       |                  | 2506 (39750)   | 24.67 | 24.90 | 23.67 |
|       | 1RB-Middle (50)  | 2680 (41490)   | 25.19 | 25.42 | 24.20 |
|       |                  | 2636.5(41055)  | 25.15 | 25.33 | 24.12 |
|       |                  | 2593 (40620)   | 25.03 | 25.18 | 23.99 |
|       |                  | 2549.5(40185)  | 25.11 | 25.30 | 24.06 |
|       |                  | 2506 (39750)   | 24.89 | 25.10 | 23.87 |
|       | 1RB-Low (0)      | 2680 (41490)   | 25.03 | 25.25 | 24.03 |

|  |                  |               |       |       |       |
|--|------------------|---------------|-------|-------|-------|
|  |                  | 2636.5(41055) | 24.96 | 25.15 | 23.94 |
|  |                  | 2593 (40620)  | 24.89 | 25.12 | 23.89 |
|  |                  | 2549.5(40185) | 24.93 | 25.13 | 23.89 |
|  |                  | 2506 (39750)  | 24.65 | 24.85 | 23.62 |
|  | 50RB-High (50)   | 2680 (41490)  | 25.10 | 24.16 | 23.20 |
|  |                  | 2636.5(41055) | 25.14 | 24.20 | 23.17 |
|  |                  | 2593 (40620)  | 24.97 | 24.05 | 23.02 |
|  |                  | 2549.5(40185) | 25.06 | 24.08 | 23.10 |
|  |                  | 2506 (39750)  | 24.90 | 23.98 | 22.95 |
|  | 50RB-Middle (25) | 2680 (41490)  | 25.19 | 24.24 | 23.24 |
|  |                  | 2636.5(41055) | 25.11 | 24.19 | 23.18 |
|  |                  | 2593 (40620)  | 25.04 | 24.08 | 23.07 |
|  |                  | 2549.5(40185) | 25.08 | 24.14 | 23.12 |
|  |                  | 2506 (39750)  | 24.82 | 23.91 | 22.89 |
|  | 50RB-Low (0)     | 2680 (41490)  | 25.22 | 24.24 | 23.25 |
|  |                  | 2636.5(41055) | 25.19 | 24.22 | 23.21 |
|  |                  | 2593 (40620)  | 25.05 | 24.10 | 23.08 |
|  |                  | 2549.5(40185) | 25.09 | 24.16 | 23.10 |
|  |                  | 2506 (39750)  | 24.85 | 23.88 | 22.87 |
|  | 100RB (0)        | 2680 (41490)  | 25.18 | 24.23 | 23.24 |
|  |                  | 2636.5(41055) | 25.16 | 24.18 | 23.19 |
|  |                  | 2593 (40620)  | 25.04 | 24.09 | 23.07 |
|  |                  | 2549.5(40185) | 25.09 | 24.12 | 23.10 |
|  |                  | 2506 (39750)  | 24.86 | 23.92 | 22.89 |

**LTE Band66 (Power Level A1)**

| LTE BAND66 |                |                 |       |       |       |
|------------|----------------|-----------------|-------|-------|-------|
| BANDWIDTH  | Number of RBs  | Frequency       | QPSK  | 16QAM | 64QAM |
| 1.4MHz     | 1RB-High (5)   | 1779.3 (132665) | 23.53 | 22.65 | 21.62 |
|            |                | 1745 (132322)   | 23.48 | 22.77 | 21.69 |
|            |                | 1710.7 (131979) | 23.60 | 22.84 | 21.70 |
|            | 1RB-Middle (3) | 1779.3 (132665) | 23.66 | 22.77 | 21.66 |
|            |                | 1745 (132322)   | 23.58 | 22.81 | 21.67 |
|            |                | 1710.7 (131979) | 23.73 | 22.92 | 21.73 |
|            | 1RB-Low (0)    | 1779.3 (132665) | 23.53 | 22.69 | 21.64 |
|            |                | 1745 (132322)   | 23.46 | 22.75 | 21.71 |
|            |                | 1710.7 (131979) | 23.58 | 22.79 | 21.70 |
|            | 3RB-High (3)   | 1779.3 (132665) | 23.59 | 22.59 | 21.72 |
|            |                | 1745 (132322)   | 23.58 | 22.58 | 21.69 |
|            |                | 1710.7 (131979) | 23.70 | 22.67 | 21.81 |

|      |                 |                 |       |       |       |
|------|-----------------|-----------------|-------|-------|-------|
|      | 3RB-Middle (1)  | 1779.3 (132665) | 23.65 | 22.66 | 21.75 |
|      |                 | 1745 (132322)   | 23.65 | 22.60 | 21.72 |
|      |                 | 1710.7 (131979) | 23.74 | 22.74 | 21.80 |
|      | 3RB-Low (0)     | 1779.3 (132665) | 23.63 | 22.57 | 21.68 |
|      |                 | 1745 (132322)   | 23.59 | 22.58 | 21.66 |
|      |                 | 1710.7 (131979) | 23.68 | 22.69 | 21.74 |
|      | 6RB (0)         | 1779.3 (132665) | 22.64 | 21.71 | 20.59 |
|      |                 | 1745 (132322)   | 22.59 | 21.70 | 20.56 |
|      |                 | 1710.7 (131979) | 22.70 | 21.80 | 20.70 |
| 3MHz | 1RB-High (14)   | 1778.5 (132657) | 23.59 | 22.81 | 21.64 |
|      |                 | 1745 (132322)   | 23.46 | 22.73 | 21.64 |
|      |                 | 1711.5 (131987) | 23.59 | 22.86 | 21.76 |
|      | 1RB-Middle (7)  | 1778.5 (132657) | 23.64 | 22.73 | 21.76 |
|      |                 | 1745 (132322)   | 23.64 | 22.86 | 21.84 |
|      |                 | 1711.5 (131987) | 23.75 | 22.97 | 21.78 |
|      | 1RB-Low (0)     | 1778.5 (132657) | 23.50 | 22.72 | 21.60 |
|      |                 | 1745 (132322)   | 23.50 | 22.84 | 21.67 |
|      |                 | 1711.5 (131987) | 23.63 | 22.93 | 21.70 |
|      | 8RB-High (7)    | 1778.5 (132657) | 22.57 | 21.63 | 20.56 |
|      |                 | 1745 (132322)   | 22.52 | 21.60 | 20.51 |
|      |                 | 1711.5 (131987) | 22.59 | 21.72 | 20.66 |
|      | 8RB-Middle (4)  | 1778.5 (132657) | 22.61 | 21.62 | 20.59 |
|      |                 | 1745 (132322)   | 22.53 | 21.59 | 20.57 |
|      |                 | 1711.5 (131987) | 22.65 | 21.70 | 20.72 |
|      | 8RB-Low (0)     | 1778.5 (132657) | 22.59 | 21.58 | 20.59 |
|      |                 | 1745 (132322)   | 22.52 | 21.59 | 20.58 |
|      |                 | 1711.5 (131987) | 22.64 | 21.73 | 20.68 |
|      | 15RB (0)        | 1778.5 (132657) | 22.59 | 21.58 | 20.57 |
|      |                 | 1745 (132322)   | 22.54 | 21.55 | 20.51 |
|      |                 | 1711.5 (131987) | 22.60 | 21.66 | 20.57 |
| 5MHz | 1RB-High (24)   | 1777.5 (132647) | 23.51 | 22.72 | 21.60 |
|      |                 | 1745 (132322)   | 23.43 | 22.68 | 21.65 |
|      |                 | 1712.5 (131997) | 23.54 | 22.93 | 21.68 |
|      | 1RB-Middle (12) | 1777.5 (132647) | 23.69 | 22.74 | 21.77 |
|      |                 | 1745 (132322)   | 23.63 | 22.95 | 21.83 |
|      |                 | 1712.5 (131997) | 23.69 | 23.00 | 21.76 |
|      | 1RB-Low (0)     | 1777.5 (132647) | 23.47 | 22.57 | 21.55 |
|      |                 | 1745 (132322)   | 23.49 | 22.77 | 21.74 |
|      |                 | 1712.5 (131997) | 23.60 | 22.84 | 21.73 |
|      | 12RB-High (13)  | 1777.5 (132647) | 22.56 | 21.49 | 20.44 |
|      |                 | 1745 (132322)   | 22.52 | 21.51 | 20.53 |
|      |                 | 1712.5 (131997) | 22.59 | 21.64 | 20.64 |

|       |                  |                 |       |       |       |
|-------|------------------|-----------------|-------|-------|-------|
|       | 12RB-Middle (6)  | 1777.5 (132647) | 22.61 | 21.54 | 20.53 |
|       |                  | 1745 (132322)   | 22.58 | 21.57 | 20.59 |
|       |                  | 1712.5 (131997) | 22.64 | 21.67 | 20.69 |
|       | 12RB-Low (0)     | 1777.5 (132647) | 22.59 | 21.53 | 20.56 |
|       |                  | 1745 (132322)   | 22.56 | 21.56 | 20.55 |
|       |                  | 1712.5 (131997) | 22.62 | 21.63 | 20.64 |
|       | 25RB (0)         | 1777.5 (132647) | 22.57 | 21.55 | 20.49 |
|       |                  | 1745 (132322)   | 22.55 | 21.54 | 20.53 |
|       |                  | 1712.5 (131997) | 22.61 | 21.65 | 20.62 |
| 10MHz | 1RB-High (49)    | 1775 (132622)   | 23.59 | 22.84 | 21.59 |
|       |                  | 1745 (132322)   | 23.52 | 22.81 | 21.65 |
|       |                  | 1715 (132022)   | 23.62 | 22.97 | 21.79 |
|       | 1RB-Middle (24)  | 1775 (132622)   | 23.52 | 22.74 | 21.73 |
|       |                  | 1745 (132322)   | 23.60 | 22.85 | 21.74 |
|       |                  | 1715 (132022)   | 23.64 | 22.98 | 21.76 |
|       | 1RB-Low (0)      | 1775 (132622)   | 23.53 | 22.71 | 21.69 |
|       |                  | 1745 (132322)   | 23.59 | 22.87 | 21.66 |
|       |                  | 1715 (132022)   | 23.63 | 22.93 | 21.75 |
|       | 25RB-High (25)   | 1775 (132622)   | 22.44 | 21.43 | 20.44 |
|       |                  | 1745 (132322)   | 22.54 | 21.56 | 20.54 |
|       |                  | 1715 (132022)   | 22.68 | 21.71 | 20.70 |
|       | 25RB-Middle (12) | 1775 (132622)   | 22.57 | 21.55 | 20.55 |
|       |                  | 1745 (132322)   | 22.60 | 21.60 | 20.59 |
|       |                  | 1715 (132022)   | 22.64 | 21.68 | 20.65 |
|       | 25RB-Low (0)     | 1775 (132622)   | 22.63 | 21.61 | 20.62 |
|       |                  | 1745 (132322)   | 22.61 | 21.63 | 20.58 |
|       |                  | 1715 (132022)   | 22.64 | 21.65 | 20.63 |
|       | 50RB (0)         | 1775 (132622)   | 22.55 | 21.52 | 20.55 |
|       |                  | 1745 (132322)   | 22.59 | 21.62 | 20.60 |
|       |                  | 1715 (132022)   | 22.70 | 21.69 | 20.70 |
| 15MHz | 1RB-High (74)    | 1772.5 (132597) | 23.51 | 22.75 | 21.57 |
|       |                  | 1745 (132322)   | 23.40 | 22.81 | 21.63 |
|       |                  | 1717.5 (132047) | 23.54 | 22.85 | 21.76 |
|       | 1RB-Middle (37)  | 1772.5 (132597) | 23.42 | 22.65 | 21.61 |
|       |                  | 1745 (132322)   | 23.49 | 22.84 | 21.66 |
|       |                  | 1717.5 (132047) | 23.56 | 22.90 | 21.77 |
|       | 1RB-Low (0)      | 1772.5 (132597) | 23.44 | 22.76 | 21.64 |
|       |                  | 1745 (132322)   | 23.49 | 22.87 | 21.63 |
|       |                  | 1717.5 (132047) | 23.57 | 22.92 | 21.67 |
|       | 36RB-High (38)   | 1772.5 (132597) | 22.51 | 21.45 | 20.49 |
|       |                  | 1745 (132322)   | 22.55 | 21.53 | 20.53 |
|       |                  | 1717.5 (132047) | 22.71 | 21.68 | 20.72 |

|       |                  |                 |       |       |       |
|-------|------------------|-----------------|-------|-------|-------|
|       | 36RB-Middle (19) | 1772.5 (132597) | 22.60 | 21.57 | 20.56 |
|       |                  | 1745 (132322)   | 22.61 | 21.56 | 20.58 |
|       |                  | 1717.5 (132047) | 22.68 | 21.62 | 20.71 |
|       | 36RB-Low (0)     | 1772.5 (132597) | 22.63 | 21.60 | 20.62 |
|       |                  | 1745 (132322)   | 22.64 | 21.59 | 20.62 |
|       |                  | 1717.5 (132047) | 22.65 | 21.61 | 20.63 |
|       | 75RB (0)         | 1772.5 (132597) | 22.58 | 21.53 | 20.52 |
|       |                  | 1745 (132322)   | 22.57 | 21.55 | 20.56 |
|       |                  | 1717.5 (132047) | 22.67 | 21.67 | 20.67 |
| 20MHz | 1RB-High (99)    | 1770 (132572)   | 23.37 | 22.59 | 21.50 |
|       |                  | 1745 (132322)   | 23.32 | 22.63 | 21.57 |
|       |                  | 1720 (132072)   | 23.40 | 22.78 | 21.66 |
|       | 1RB-Middle (50)  | 1770 (132572)   | 23.55 | 22.81 | 21.68 |
|       |                  | 1745 (132322)   | 23.55 | 22.83 | 21.75 |
|       |                  | 1720 (132072)   | 23.67 | 23.06 | 21.85 |
|       | 1RB-Low (0)      | 1770 (132572)   | 23.34 | 22.64 | 21.55 |
|       |                  | 1745 (132322)   | 23.40 | 22.75 | 21.59 |
|       |                  | 1720 (132072)   | 23.48 | 22.70 | 21.64 |
|       | 50RB-High (50)   | 1770 (132572)   | 22.47 | 21.46 | 20.46 |
|       |                  | 1745 (132322)   | 22.53 | 21.54 | 20.54 |
|       |                  | 1720 (132072)   | 22.76 | 21.75 | 20.76 |
|       | 50RB-Middle (25) | 1770 (132572)   | 22.61 | 21.62 | 20.63 |
|       |                  | 1745 (132322)   | 22.63 | 21.63 | 20.63 |
|       |                  | 1720 (132072)   | 22.69 | 21.69 | 20.68 |
|       | 50RB-Low (0)     | 1770 (132572)   | 22.67 | 21.68 | 20.69 |
|       |                  | 1745 (132322)   | 22.71 | 21.73 | 20.70 |
|       |                  | 1720 (132072)   | 22.69 | 21.71 | 20.71 |
|       | 100RB (0)        | 1770 (132572)   | 22.58 | 21.55 | 20.57 |
|       |                  | 1745 (132322)   | 22.62 | 21.62 | 20.64 |
|       |                  | 1720 (132072)   | 22.70 | 21.70 | 20.70 |

## LTE Band66 (Power Level B1)

| LTE BAND66 |                |                 |       |       |       |
|------------|----------------|-----------------|-------|-------|-------|
| BANDWIDTH  | Number of RBs  | Frequency       | QPSK  | 16QAM | 64QAM |
| 1.4MHz     | 1RB-High (5)   | 1779.3 (132665) | 20.03 | 20.29 | 20.18 |
|            |                | 1745 (132322)   | 20.01 | 20.35 | 20.26 |
|            |                | 1710.7 (131979) | 20.13 | 20.40 | 20.28 |
|            | 1RB-Middle (3) | 1779.3 (132665) | 20.11 | 20.25 | 20.29 |
|            |                | 1745 (132322)   | 20.14 | 20.41 | 20.31 |
|            |                | 1710.7 (131979) | 20.21 | 20.52 | 20.34 |
|            | 1RB-Low (0)    | 1779.3 (132665) | 20.03 | 20.23 | 20.21 |
|            |                | 1745 (132322)   | 20.03 | 20.34 | 20.20 |
|            |                | 1710.7 (131979) | 20.06 | 20.41 | 20.29 |
|            | 3RB-High (3)   | 1779.3 (132665) | 20.16 | 20.06 | 20.21 |
|            |                | 1745 (132322)   | 20.14 | 20.10 | 20.16 |
|            |                | 1710.7 (131979) | 20.21 | 20.21 | 20.31 |
|            | 3RB-Middle (1) | 1779.3 (132665) | 20.19 | 20.17 | 20.25 |
|            |                | 1745 (132322)   | 20.15 | 20.19 | 20.23 |
|            |                | 1710.7 (131979) | 20.29 | 20.23 | 20.33 |
|            | 3RB-Low (0)    | 1779.3 (132665) | 20.14 | 20.13 | 20.26 |
|            |                | 1745 (132322)   | 20.11 | 20.06 | 20.24 |
|            |                | 1710.7 (131979) | 20.21 | 20.24 | 20.32 |
|            | 6RB (0)        | 1779.3 (132665) | 20.16 | 20.22 | 20.15 |
|            |                | 1745 (132322)   | 20.11 | 20.25 | 20.11 |
|            |                | 1710.7 (131979) | 20.22 | 20.32 | 20.17 |
| 3MHz       | 1RB-High (14)  | 1778.5 (132657) | 20.08 | 20.29 | 20.13 |
|            |                | 1745 (132322)   | 20.05 | 20.35 | 20.16 |
|            |                | 1711.5 (131987) | 20.11 | 20.44 | 20.24 |
|            | 1RB-Middle (7) | 1778.5 (132657) | 20.23 | 20.37 | 20.37 |
|            |                | 1745 (132322)   | 20.20 | 20.46 | 20.33 |
|            |                | 1711.5 (131987) | 20.30 | 20.53 | 20.37 |
|            | 1RB-Low (0)    | 1778.5 (132657) | 20.04 | 20.22 | 20.12 |
|            |                | 1745 (132322)   | 20.03 | 20.42 | 20.31 |
|            |                | 1711.5 (131987) | 20.18 | 20.49 | 20.28 |
|            | 8RB-High (7)   | 1778.5 (132657) | 20.09 | 20.12 | 20.12 |
|            |                | 1745 (132322)   | 20.06 | 20.13 | 20.11 |
|            |                | 1711.5 (131987) | 20.14 | 20.23 | 20.14 |
|            | 8RB-Middle (4) | 1778.5 (132657) | 20.11 | 20.15 | 20.13 |
|            |                | 1745 (132322)   | 20.08 | 20.13 | 20.09 |
|            |                | 1711.5 (131987) | 20.17 | 20.26 | 20.20 |
|            | 8RB-Low (0)    | 1778.5 (132657) | 20.12 | 20.13 | 20.14 |
|            |                | 1745 (132322)   | 20.07 | 20.14 | 20.12 |

|       |                  |                 |       |       |       |
|-------|------------------|-----------------|-------|-------|-------|
|       | 15RB (0)         | 1711.5 (131987) | 20.19 | 20.27 | 20.18 |
|       |                  | 1778.5 (132657) | 20.09 | 20.09 | 20.09 |
|       |                  | 1745 (132322)   | 20.06 | 20.08 | 20.04 |
|       |                  | 1711.5 (131987) | 20.13 | 20.15 | 20.12 |
| 5MHz  | 1RB-High (24)    | 1777.5 (132647) | 20.06 | 20.27 | 20.11 |
|       |                  | 1745 (132322)   | 20.02 | 20.26 | 20.14 |
|       |                  | 1712.5 (131997) | 20.08 | 20.41 | 20.26 |
|       | 1RB-Middle (12)  | 1777.5 (132647) | 20.21 | 20.31 | 20.22 |
|       |                  | 1745 (132322)   | 20.17 | 20.57 | 20.32 |
|       |                  | 1712.5 (131997) | 20.27 | 20.58 | 20.35 |
|       | 1RB-Low (0)      | 1777.5 (132647) | 20.00 | 20.24 | 20.15 |
|       |                  | 1745 (132322)   | 20.04 | 20.30 | 20.21 |
|       |                  | 1712.5 (131997) | 20.13 | 20.44 | 20.23 |
|       | 12RB-High (13)   | 1777.5 (132647) | 20.01 | 19.99 | 20.02 |
|       |                  | 1745 (132322)   | 20.04 | 20.06 | 20.05 |
|       |                  | 1712.5 (131997) | 20.13 | 20.13 | 20.17 |
|       | 12RB-Middle (6)  | 1777.5 (132647) | 20.10 | 20.08 | 20.10 |
|       |                  | 1745 (132322)   | 20.10 | 20.12 | 20.10 |
|       |                  | 1712.5 (131997) | 20.17 | 20.18 | 20.24 |
|       | 12RB-Low (0)     | 1777.5 (132647) | 20.12 | 20.11 | 20.09 |
|       |                  | 1745 (132322)   | 20.07 | 20.08 | 20.09 |
|       |                  | 1712.5 (131997) | 20.15 | 20.15 | 20.16 |
|       | 25RB (0)         | 1777.5 (132647) | 20.06 | 20.05 | 20.04 |
|       |                  | 1745 (132322)   | 20.07 | 20.10 | 20.06 |
|       |                  | 1712.5 (131997) | 20.14 | 20.16 | 20.18 |
| 10MHz | 1RB-High (49)    | 1775 (132622)   | 20.08 | 20.28 | 20.24 |
|       |                  | 1745 (132322)   | 20.04 | 20.38 | 20.26 |
|       |                  | 1715 (132022)   | 20.14 | 20.54 | 20.30 |
|       | 1RB-Middle (24)  | 1775 (132622)   | 20.09 | 20.29 | 20.22 |
|       |                  | 1745 (132322)   | 20.13 | 20.44 | 20.29 |
|       |                  | 1715 (132022)   | 20.20 | 20.52 | 20.38 |
|       | 1RB-Low (0)      | 1775 (132622)   | 20.07 | 20.40 | 20.30 |
|       |                  | 1745 (132322)   | 20.10 | 20.46 | 20.24 |
|       |                  | 1715 (132022)   | 20.20 | 20.40 | 20.35 |
|       | 25RB-High (25)   | 1775 (132622)   | 19.98 | 19.99 | 19.95 |
|       |                  | 1745 (132322)   | 20.06 | 20.06 | 20.07 |
|       |                  | 1715 (132022)   | 20.22 | 20.24 | 20.22 |
|       | 25RB-Middle (12) | 1775 (132622)   | 20.08 | 20.11 | 20.08 |
|       |                  | 1745 (132322)   | 20.13 | 20.12 | 20.14 |
|       |                  | 1715 (132022)   | 20.17 | 20.18 | 20.17 |
|       | 25RB-Low (0)     | 1775 (132622)   | 20.15 | 20.16 | 20.15 |
|       |                  | 1745 (132322)   | 20.14 | 20.15 | 20.16 |

|       |                  |                 |       |       |       |
|-------|------------------|-----------------|-------|-------|-------|
|       | 50RB (0)         | 1715 (132022)   | 20.15 | 20.19 | 20.17 |
|       |                  | 1775 (132622)   | 20.05 | 20.08 | 20.08 |
|       |                  | 1745 (132322)   | 20.10 | 20.11 | 20.10 |
|       |                  | 1715 (132022)   | 20.22 | 20.22 | 20.22 |
| 15MHz | 1RB-High (74)    | 1772.5 (132597) | 20.02 | 20.25 | 20.15 |
|       |                  | 1745 (132322)   | 20.00 | 20.24 | 20.10 |
|       |                  | 1717.5 (132047) | 20.13 | 20.36 | 20.32 |
|       | 1RB-Middle (37)  | 1772.5 (132597) | 20.01 | 20.30 | 20.08 |
|       |                  | 1745 (132322)   | 20.07 | 20.41 | 20.20 |
|       |                  | 1717.5 (132047) | 20.13 | 20.38 | 20.32 |
|       | 1RB-Low (0)      | 1772.5 (132597) | 20.06 | 20.36 | 20.17 |
|       |                  | 1745 (132322)   | 20.09 | 20.40 | 20.28 |
|       |                  | 1717.5 (132047) | 20.15 | 20.44 | 20.25 |
|       | 36RB-High (38)   | 1772.5 (132597) | 20.05 | 20.02 | 20.03 |
|       |                  | 1745 (132322)   | 20.09 | 20.06 | 20.07 |
|       |                  | 1717.5 (132047) | 20.24 | 20.22 | 20.25 |
|       | 36RB-Middle (19) | 1772.5 (132597) | 20.14 | 20.10 | 20.14 |
|       |                  | 1745 (132322)   | 20.11 | 20.15 | 20.16 |
|       |                  | 1717.5 (132047) | 20.20 | 20.17 | 20.20 |
|       | 36RB-Low (0)     | 1772.5 (132597) | 20.15 | 20.14 | 20.17 |
|       |                  | 1745 (132322)   | 20.16 | 20.17 | 20.15 |
|       |                  | 1717.5 (132047) | 20.17 | 20.16 | 20.18 |
|       | 75RB (0)         | 1772.5 (132597) | 20.09 | 20.10 | 20.09 |
|       |                  | 1745 (132322)   | 20.10 | 20.12 | 20.09 |
|       |                  | 1717.5 (132047) | 20.20 | 20.22 | 20.20 |
| 20MHz | 1RB-High (99)    | 1770 (132572)   | 20.07 | 20.33 | 20.20 |
|       |                  | 1745 (132322)   | 20.05 | 20.37 | 20.25 |
|       |                  | 1720 (132072)   | 20.14 | 20.48 | 20.32 |
|       | 1RB-Middle (50)  | 1770 (132572)   | 20.30 | 20.56 | 20.39 |
|       |                  | 1745 (132322)   | 20.31 | 20.61 | 20.48 |
|       |                  | 1720 (132072)   | 20.43 | 20.61 | 20.61 |
|       | 1RB-Low (0)      | 1770 (132572)   | 20.09 | 20.39 | 20.22 |
|       |                  | 1745 (132322)   | 20.14 | 20.43 | 20.29 |
|       |                  | 1720 (132072)   | 20.25 | 20.42 | 20.32 |
|       | 50RB-High (50)   | 1770 (132572)   | 20.22 | 20.22 | 20.21 |
|       |                  | 1745 (132322)   | 20.23 | 20.27 | 20.24 |
|       |                  | 1720 (132072)   | 20.44 | 20.43 | 20.45 |
|       | 50RB-Middle (25) | 1770 (132572)   | 20.33 | 20.33 | 20.31 |
|       |                  | 1745 (132322)   | 20.32 | 20.35 | 20.32 |
|       |                  | 1720 (132072)   | 20.37 | 20.40 | 20.38 |
|       | 50RB-Low (0)     | 1770 (132572)   | 20.35 | 20.36 | 20.36 |
|       |                  | 1745 (132322)   | 20.37 | 20.39 | 20.40 |

|  |           |               |       |       |       |
|--|-----------|---------------|-------|-------|-------|
|  |           | 1720 (132072) | 20.38 | 20.40 | 20.37 |
|  | 100RB (0) | 1770 (132572) | 20.25 | 20.27 | 20.28 |
|  |           | 1745 (132322) | 20.31 | 20.30 | 20.31 |
|  |           | 1720 (132072) | 20.39 | 20.37 | 20.40 |

**LTE Band66 (Power Level C1)**

| LTE BAND66 |                |                 |       |       |       |
|------------|----------------|-----------------|-------|-------|-------|
| BANDWIDTH  | Number of RBs  | Frequency       | QPSK  | 16QAM | 64QAM |
| 1.4MHz     | 1RB-High (5)   | 1779.3 (132665) | 18.51 | 18.75 | 18.59 |
|            |                | 1745 (132322)   | 18.51 | 18.71 | 18.68 |
|            |                | 1710.7 (131979) | 18.60 | 18.76 | 18.81 |
|            | 1RB-Middle (3) | 1779.3 (132665) | 18.58 | 18.84 | 18.67 |
|            |                | 1745 (132322)   | 18.58 | 18.91 | 18.76 |
|            |                | 1710.7 (131979) | 18.71 | 18.93 | 18.82 |
|            | 1RB-Low (0)    | 1779.3 (132665) | 18.50 | 18.60 | 18.62 |
|            |                | 1745 (132322)   | 18.49 | 18.68 | 18.68 |
|            |                | 1710.7 (131979) | 18.58 | 18.79 | 18.70 |
|            | 3RB-High (3)   | 1779.3 (132665) | 18.61 | 18.61 | 18.63 |
|            |                | 1745 (132322)   | 18.61 | 18.58 | 18.64 |
|            |                | 1710.7 (131979) | 18.70 | 18.70 | 18.69 |
|            | 3RB-Middle (1) | 1779.3 (132665) | 18.65 | 18.64 | 18.68 |
|            |                | 1745 (132322)   | 18.64 | 18.62 | 18.71 |
|            |                | 1710.7 (131979) | 18.77 | 18.76 | 18.82 |
|            | 3RB-Low (0)    | 1779.3 (132665) | 18.62 | 18.56 | 18.72 |
|            |                | 1745 (132322)   | 18.59 | 18.60 | 18.73 |
|            |                | 1710.7 (131979) | 18.71 | 18.72 | 18.77 |
|            | 6RB (0)        | 1779.3 (132665) | 18.62 | 18.72 | 18.59 |
|            |                | 1745 (132322)   | 18.58 | 18.69 | 18.60 |
|            |                | 1710.7 (131979) | 18.69 | 18.81 | 18.67 |
| 3MHz       | 1RB-High (14)  | 1778.5 (132657) | 18.54 | 18.73 | 18.66 |
|            |                | 1745 (132322)   | 18.53 | 18.75 | 18.70 |
|            |                | 1711.5 (131987) | 18.58 | 18.85 | 18.79 |
|            | 1RB-Middle (7) | 1778.5 (132657) | 18.65 | 18.96 | 18.72 |
|            |                | 1745 (132322)   | 18.65 | 18.84 | 18.79 |
|            |                | 1711.5 (131987) | 18.77 | 19.00 | 18.90 |
|            | 1RB-Low (0)    | 1778.5 (132657) | 18.52 | 18.77 | 18.56 |
|            |                | 1745 (132322)   | 18.52 | 18.82 | 18.71 |
|            |                | 1711.5 (131987) | 18.63 | 18.85 | 18.74 |
|            | 8RB-High (7)   | 1778.5 (132657) | 18.52 | 18.59 | 18.55 |
|            |                | 1745 (132322)   | 18.54 | 18.60 | 18.56 |
|            |                | 1711.5 (131987) | 18.59 | 18.69 | 18.63 |

|       |                 |                 |       |       |       |
|-------|-----------------|-----------------|-------|-------|-------|
|       | 8RB-Middle (4)  | 1778.5 (132657) | 18.57 | 18.60 | 18.58 |
|       |                 | 1745 (132322)   | 18.53 | 18.66 | 18.57 |
|       |                 | 1711.5 (131987) | 18.68 | 18.73 | 18.72 |
|       | 8RB-Low (0)     | 1778.5 (132657) | 18.59 | 18.60 | 18.60 |
|       |                 | 1745 (132322)   | 18.53 | 18.61 | 18.57 |
|       |                 | 1711.5 (131987) | 18.63 | 18.74 | 18.67 |
|       | 15RB (0)        | 1778.5 (132657) | 18.56 | 18.56 | 18.54 |
|       |                 | 1745 (132322)   | 18.51 | 18.54 | 18.55 |
|       |                 | 1711.5 (131987) | 18.58 | 18.65 | 18.62 |
| 5MHz  | 1RB-High (24)   | 1777.5 (132647) | 18.51 | 18.74 | 18.50 |
|       |                 | 1745 (132322)   | 18.49 | 18.83 | 18.67 |
|       |                 | 1712.5 (131997) | 18.57 | 18.76 | 18.74 |
|       | 1RB-Middle (12) | 1777.5 (132647) | 18.65 | 18.80 | 18.75 |
|       |                 | 1745 (132322)   | 18.65 | 18.94 | 18.75 |
|       |                 | 1712.5 (131997) | 18.67 | 18.98 | 18.82 |
|       | 1RB-Low (0)     | 1777.5 (132647) | 18.44 | 18.69 | 18.61 |
|       |                 | 1745 (132322)   | 18.50 | 18.73 | 18.70 |
|       |                 | 1712.5 (131997) | 18.60 | 18.76 | 18.75 |
|       | 12RB-High (13)  | 1777.5 (132647) | 18.48 | 18.45 | 18.48 |
|       |                 | 1745 (132322)   | 18.53 | 18.54 | 18.57 |
|       |                 | 1712.5 (131997) | 18.62 | 18.63 | 18.67 |
|       | 12RB-Middle (6) | 1777.5 (132647) | 18.59 | 18.54 | 18.59 |
|       |                 | 1745 (132322)   | 18.58 | 18.58 | 18.60 |
|       |                 | 1712.5 (131997) | 18.70 | 18.68 | 18.69 |
|       | 12RB-Low (0)    | 1777.5 (132647) | 18.58 | 18.56 | 18.58 |
|       |                 | 1745 (132322)   | 18.57 | 18.56 | 18.58 |
|       |                 | 1712.5 (131997) | 18.62 | 18.61 | 18.63 |
|       | 25RB (0)        | 1777.5 (132647) | 18.52 | 18.54 | 18.51 |
|       |                 | 1745 (132322)   | 18.54 | 18.56 | 18.57 |
|       |                 | 1712.5 (131997) | 18.63 | 18.65 | 18.64 |
| 10MHz | 1RB-High (49)   | 1775 (132622)   | 18.52 | 18.72 | 18.58 |
|       |                 | 1745 (132322)   | 18.54 | 18.86 | 18.67 |
|       |                 | 1715 (132022)   | 18.62 | 18.94 | 18.84 |
|       | 1RB-Middle (24) | 1775 (132622)   | 18.54 | 18.81 | 18.62 |
|       |                 | 1745 (132322)   | 18.61 | 18.86 | 18.75 |
|       |                 | 1715 (132022)   | 18.69 | 18.98 | 18.90 |
|       | 1RB-Low (0)     | 1775 (132622)   | 18.57 | 18.86 | 18.64 |
|       |                 | 1745 (132322)   | 18.59 | 18.75 | 18.76 |
|       |                 | 1715 (132022)   | 18.64 | 18.88 | 18.74 |
|       | 25RB-High (25)  | 1775 (132622)   | 18.44 | 18.44 | 18.42 |
|       |                 | 1745 (132322)   | 18.53 | 18.54 | 18.54 |
|       |                 | 1715 (132022)   | 18.63 | 18.67 | 18.69 |

|       |                  |                 |       |       |       |
|-------|------------------|-----------------|-------|-------|-------|
|       | 25RB-Middle (12) | 1775 (132622)   | 18.55 | 18.53 | 18.56 |
|       |                  | 1745 (132322)   | 18.58 | 18.60 | 18.58 |
|       |                  | 1715 (132022)   | 18.67 | 18.64 | 18.66 |
|       | 25RB-Low (0)     | 1775 (132622)   | 18.58 | 18.59 | 18.59 |
|       |                  | 1745 (132322)   | 18.62 | 18.62 | 18.61 |
|       |                  | 1715 (132022)   | 18.63 | 18.64 | 18.63 |
|       | 50RB (0)         | 1775 (132622)   | 18.53 | 18.53 | 18.51 |
|       |                  | 1745 (132322)   | 18.60 | 18.56 | 18.60 |
|       |                  | 1715 (132022)   | 18.66 | 18.69 | 18.71 |
| 15MHz | 1RB-High (74)    | 1772.5 (132597) | 18.51 | 18.68 | 18.58 |
|       |                  | 1745 (132322)   | 18.50 | 18.83 | 18.63 |
|       |                  | 1717.5 (132047) | 18.58 | 18.86 | 18.77 |
|       | 1RB-Middle (37)  | 1772.5 (132597) | 18.49 | 18.79 | 18.65 |
|       |                  | 1745 (132322)   | 18.56 | 18.79 | 18.67 |
|       |                  | 1717.5 (132047) | 18.61 | 18.79 | 18.81 |
|       | 1RB-Low (0)      | 1772.5 (132597) | 18.51 | 18.73 | 18.68 |
|       |                  | 1745 (132322)   | 18.54 | 18.83 | 18.73 |
|       |                  | 1717.5 (132047) | 18.63 | 18.79 | 18.78 |
|       | 36RB-High (38)   | 1772.5 (132597) | 18.51 | 18.48 | 18.48 |
|       |                  | 1745 (132322)   | 18.56 | 18.53 | 18.56 |
|       |                  | 1717.5 (132047) | 18.72 | 18.69 | 18.71 |
|       | 36RB-Middle (19) | 1772.5 (132597) | 18.61 | 18.60 | 18.58 |
|       |                  | 1745 (132322)   | 18.60 | 18.58 | 18.60 |
|       |                  | 1717.5 (132047) | 18.68 | 18.65 | 18.69 |
|       | 36RB-Low (0)     | 1772.5 (132597) | 18.64 | 18.61 | 18.61 |
|       |                  | 1745 (132322)   | 18.64 | 18.64 | 18.62 |
|       |                  | 1717.5 (132047) | 18.66 | 18.62 | 18.61 |
|       | 75RB (0)         | 1772.5 (132597) | 18.57 | 18.56 | 18.54 |
|       |                  | 1745 (132322)   | 18.60 | 18.59 | 18.57 |
|       |                  | 1717.5 (132047) | 18.68 | 18.69 | 18.66 |
| 20MHz | 1RB-High (99)    | 1770 (132572)   | 18.36 | 18.58 | 18.54 |
|       |                  | 1745 (132322)   | 18.39 | 18.55 | 18.51 |
|       |                  | 1720 (132072)   | 18.42 | 18.71 | 18.63 |
|       | 1RB-Middle (50)  | 1770 (132572)   | 18.59 | 18.86 | 18.73 |
|       |                  | 1745 (132322)   | 18.68 | 18.98 | 18.78 |
|       |                  | 1720 (132072)   | 18.72 | 18.95 | 18.92 |
|       | 1RB-Low (0)      | 1770 (132572)   | 18.34 | 18.57 | 18.54 |
|       |                  | 1745 (132322)   | 18.45 | 18.71 | 18.63 |
|       |                  | 1720 (132072)   | 18.49 | 18.81 | 18.66 |
|       | 50RB-High (50)   | 1770 (132572)   | 18.52 | 18.53 | 18.49 |
|       |                  | 1745 (132322)   | 18.49 | 18.54 | 18.53 |
|       |                  | 1720 (132072)   | 18.72 | 18.73 | 18.73 |

|  |                  |               |       |       |       |
|--|------------------|---------------|-------|-------|-------|
|  | 50RB-Middle (25) | 1770 (132572) | 18.62 | 18.65 | 18.62 |
|  |                  | 1745 (132322) | 18.62 | 18.63 | 18.63 |
|  |                  | 1720 (132072) | 18.66 | 18.66 | 18.66 |
|  | 50RB-Low (0)     | 1770 (132572) | 18.64 | 18.66 | 18.64 |
|  |                  | 1745 (132322) | 18.69 | 18.70 | 18.68 |
|  |                  | 1720 (132072) | 18.65 | 18.67 | 18.67 |
|  | 100RB (0)        | 1770 (132572) | 18.58 | 18.57 | 18.56 |
|  |                  | 1745 (132322) | 18.60 | 18.60 | 18.58 |
|  |                  | 1720 (132072) | 18.67 | 18.65 | 18.66 |

#### LTE Band71 (Power Level A1/B1/C1)

| LTE BAND71 |                 |                |       |       |       |
|------------|-----------------|----------------|-------|-------|-------|
| BANDWIDTH  | Number of RBs   | Frequency      | QPSK  | 16QAM | 64QAM |
| 5MHz       | 1RB-High (24)   | 695.5 (133447) | 23.80 | 22.94 | 21.94 |
|            |                 | 680.5 (133297) | 23.89 | 23.17 | 22.08 |
|            |                 | 665.5 (133147) | 23.83 | 23.14 | 22.00 |
|            | 1RB-Middle (12) | 695.5 (133447) | 24.01 | 23.26 | 22.13 |
|            |                 | 680.5 (133297) | 24.11 | 23.21 | 22.11 |
|            |                 | 665.5 (133147) | 23.95 | 23.26 | 22.09 |
|            | 1RB-Low (0)     | 695.5 (133447) | 23.86 | 23.04 | 21.97 |
|            |                 | 680.5 (133297) | 23.87 | 23.19 | 22.03 |
|            |                 | 665.5 (133147) | 23.86 | 22.97 | 21.98 |
|            | 12RB-High (13)  | 695.5 (133447) | 22.88 | 21.84 | 20.86 |
|            |                 | 680.5 (133297) | 22.89 | 21.89 | 20.88 |
|            |                 | 665.5 (133147) | 22.80 | 21.83 | 20.83 |
|            | 12RB-Middle (6) | 695.5 (133447) | 22.92 | 21.89 | 20.92 |
|            |                 | 680.5 (133297) | 22.97 | 21.99 | 21.00 |
|            |                 | 665.5 (133147) | 22.93 | 21.95 | 20.92 |
|            | 12RB-Low (0)    | 695.5 (133447) | 22.85 | 21.82 | 20.86 |
|            |                 | 680.5 (133297) | 23.03 | 21.98 | 20.98 |
|            |                 | 665.5 (133147) | 22.86 | 21.86 | 20.84 |
|            | 25RB (0)        | 695.5 (133447) | 22.87 | 21.87 | 20.86 |
|            |                 | 680.5 (133297) | 22.96 | 21.96 | 20.98 |
|            |                 | 665.5 (133147) | 22.86 | 21.88 | 20.82 |
| 10MHz      | 1RB-High (49)   | 693 (132422)   | 23.22 | 22.51 | 21.34 |
|            |                 | 680.5 (133297) | 23.95 | 23.24 | 22.06 |
|            |                 | 668 (133172)   | 23.87 | 23.20 | 22.03 |
|            | 1RB-Middle (24) | 693 (132422)   | 23.27 | 22.57 | 21.46 |
|            |                 | 680.5 (133297) | 23.97 | 23.22 | 22.11 |
|            |                 | 668 (133172)   | 23.92 | 23.21 | 22.11 |
|            | 1RB-Low (0)     | 693 (132422)   | 23.24 | 22.47 | 21.36 |

|       |                  |                  |                |       |       |       |
|-------|------------------|------------------|----------------|-------|-------|-------|
|       |                  |                  | 680.5 (133297) | 23.90 | 23.20 | 21.99 |
|       |                  |                  | 668 (133172)   | 23.88 | 23.10 | 22.01 |
|       |                  | 25RB-High (25)   | 693 (132422)   | 22.23 | 21.25 | 20.22 |
|       |                  |                  | 680.5 (133297) | 22.89 | 21.92 | 20.92 |
|       |                  |                  | 668 (133172)   | 23.04 | 22.07 | 21.08 |
|       |                  | 25RB-Middle (12) | 693 (132422)   | 22.30 | 21.31 | 20.31 |
|       |                  |                  | 680.5 (133297) | 22.98 | 21.98 | 20.99 |
|       |                  |                  | 668 (133172)   | 22.95 | 21.98 | 20.95 |
|       |                  | 25RB-Low (0)     | 693 (132422)   | 22.35 | 21.34 | 20.32 |
|       |                  |                  | 680.5 (133297) | 23.12 | 22.12 | 21.09 |
|       |                  |                  | 668 (133172)   | 23.13 | 22.09 | 21.07 |
|       |                  | 50RB (0)         | 693 (132422)   | 22.31 | 21.35 | 20.30 |
|       |                  |                  | 680.5 (133297) | 23.00 | 22.02 | 21.02 |
|       |                  |                  | 668 (133172)   | 23.11 | 22.08 | 21.07 |
| 15MHz | 1RB-High (74)    |                  | 690.5 (133397) | 23.79 | 22.88 | 21.88 |
|       |                  |                  | 680.5 (133297) | 23.84 | 23.18 | 21.97 |
|       |                  |                  | 670.5 (133197) | 23.78 | 22.96 | 21.99 |
|       | 1RB-Middle (37)  |                  | 690.5 (133397) | 23.88 | 23.22 | 22.11 |
|       |                  |                  | 680.5 (133297) | 23.88 | 23.26 | 22.06 |
|       |                  |                  | 670.5 (133197) | 23.91 | 23.13 | 22.13 |
|       | 1RB-Low (0)      |                  | 690.5 (133397) | 23.93 | 23.27 | 22.12 |
|       |                  |                  | 680.5 (133297) | 23.87 | 23.22 | 22.07 |
|       |                  |                  | 670.5 (133197) | 23.86 | 23.08 | 21.93 |
|       | 36RB-High (38)   |                  | 690.5 (133397) | 23.01 | 21.98 | 21.00 |
|       |                  |                  | 680.5 (133297) | 22.93 | 21.94 | 20.97 |
|       |                  |                  | 670.5 (133197) | 23.04 | 22.00 | 21.00 |
|       | 36RB-Middle (19) |                  | 690.5 (133397) | 22.95 | 21.91 | 20.92 |
|       |                  |                  | 680.5 (133297) | 22.97 | 21.97 | 20.98 |
|       |                  |                  | 670.5 (133197) | 22.94 | 21.91 | 20.94 |
|       | 36RB-Low (0)     |                  | 690.5 (133397) | 22.95 | 21.89 | 20.94 |
|       |                  |                  | 680.5 (133297) | 22.99 | 21.99 | 20.99 |
|       |                  |                  | 670.5 (133197) | 23.07 | 22.04 | 21.05 |
|       | 75RB (0)         |                  | 690.5 (133397) | 22.96 | 21.94 | 20.94 |
|       |                  |                  | 680.5 (133297) | 22.99 | 21.98 | 20.97 |
|       |                  |                  | 670.5 (133197) | 23.05 | 22.04 | 21.00 |
| 20MHz | 1RB-High (99)    |                  | 688 (133372)   | 23.63 | 22.89 | 21.82 |
|       |                  |                  | 683 (133322)   | 23.66 | 22.95 | 21.86 |
|       |                  |                  | 673 (133222)   | 23.69 | 23.01 | 21.86 |
|       | 1RB-Middle (50)  |                  | 688 (133372)   | 23.93 | 23.21 | 22.03 |
|       |                  |                  | 683 (133322)   | 23.96 | 23.27 | 22.15 |
|       |                  |                  | 673 (133222)   | 23.89 | 23.11 | 22.04 |
|       | 1RB-Low (0)      |                  | 688 (133372)   | 23.72 | 23.04 | 21.89 |

|  |                  |              |       |       |       |
|--|------------------|--------------|-------|-------|-------|
|  |                  | 683 (133322) | 23.71 | 22.98 | 21.92 |
|  |                  | 673 (133222) | 23.70 | 22.84 | 21.84 |
|  | 50RB-High (50)   | 688 (133372) | 23.06 | 22.04 | 21.04 |
|  |                  | 683 (133322) | 23.06 | 22.07 | 21.05 |
|  |                  | 673 (133222) | 22.78 | 21.78 | 20.75 |
|  | 50RB-Middle (25) | 688 (133372) | 22.95 | 21.95 | 20.95 |
|  |                  | 683 (133322) | 22.97 | 21.97 | 20.98 |
|  |                  | 673 (133222) | 22.89 | 21.89 | 20.89 |
|  | 50RB-Low (0)     | 688 (133372) | 23.12 | 22.15 | 21.12 |
|  |                  | 683 (133322) | 23.13 | 22.12 | 21.09 |
|  |                  | 673 (133222) | 23.03 | 22.05 | 21.03 |
|  | 100RB (0)        | 688 (133372) | 23.07 | 22.04 | 21.04 |
|  |                  | 683 (133322) | 23.08 | 22.07 | 21.07 |
|  |                  | 673 (133222) | 22.85 | 21.86 | 20.84 |

## 11.4 Wi-Fi and BT Measurement result

The maximum output power of BT antenna is 10.34dBm.

The maximum tune up of BT antenna is 11dBm.

| Antenna      | Receiver on<br>(head scenario) | Receiver off+<br>Hotspot off<br>(body scenario) | Receiver off+<br>Hotspot on<br>(body/other scenario) |
|--------------|--------------------------------|-------------------------------------------------|------------------------------------------------------|
| WIFI Antenna | Power Level A1                 | Power Level B1                                  | Power Level C1                                       |

The average conducted power for Wi-Fi 2.4G is as following-Power Level A1

| 802.11b           |       |
|-------------------|-------|
| Channel\data rate | 1Mbps |
| 11(2462MHz)       | 18.03 |
| 6(2437(MHz)       | 18.06 |
| 1(2412MHz)        | 17.74 |
| Tune up           | 18.50 |
| 802.11g           |       |
| Channel\data rate | 6Mbps |
| 11(2462MHz)       | /     |
| 6(2437(MHz)       | 17.68 |
| 1(2412MHz)        | /     |
| Tune up           | 18.50 |
| 802.11n-20MHz     |       |
| Channel\data rate | MCS0  |
| 11(2462MHz)       | /     |
| 6(2437(MHz)       | 17.58 |
| 1(2412MHz)        | /     |
| Tune up           | 18.00 |

The average conducted power for Wi-Fi 2.4G is as following-Power Level B1/C1

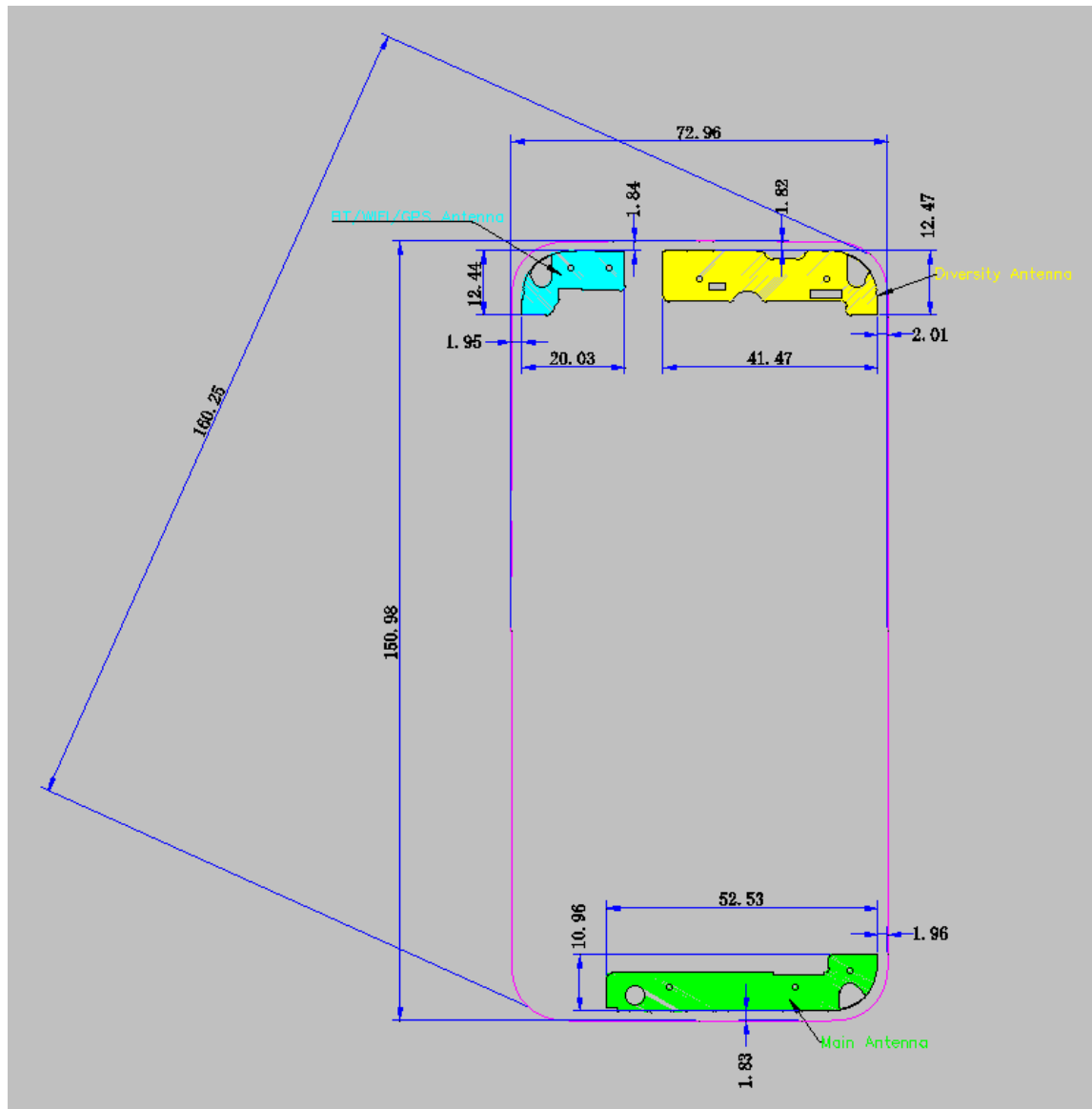
| 802.11b           |       |
|-------------------|-------|
| Channel\data rate | 1Mbps |
| 11(2462MHz)       | 18.84 |
| Tune up           | 19.00 |
| 6(2437(MHz)       | 19.89 |
| Tune up           | 20.50 |
| 1(2412MHz)        | 18.59 |
| Tune up           | 19.00 |
| 802.11g           |       |
| Channel\data rate | 6Mbps |
| 11(2462MHz)       | 14.48 |
| Tune up           | 14.50 |
| 6(2437(MHz)       | 18.88 |
| Tune up           | 19.00 |
| 1(2412MHz)        | 14.33 |
| Tune up           | 14.50 |
| 802.11n-20MHz     |       |
| Channel\data rate | MCS0  |
| 11(2462MHz)       | 14.89 |
| Tune up           | 15.00 |
| 6(2437(MHz)       | 18.92 |
| Tune up           | 19.00 |
| 1(2412MHz)        | 15.24 |
| Tune up           | 15.50 |

## 12 Simultaneous TX SAR Considerations

### 12.1 Introduction

The following procedures adopted from “FCC SAR Considerations for Cell Phones with Multiple Transmitters” are applicable to handsets with built-in unlicensed transmitters such as 802.11 a/b/g and Bluetooth devices which may simultaneously transmit with the licensed transmitter. For this device, the BT and Wi-Fi can transmit simultaneous with other transmitters.

### 12.2 Transmit Antenna Separation Distances



Picture 12.1 Antenna location

### 12.3 SAR Measurement Positions

According to the KDB941225 D06 Hot Spot SAR, the edges with less than 2.5 cm distance to the antennas need to be tested for SAR.

| SAR measurement positions |       |      |           |            |          |             |
|---------------------------|-------|------|-----------|------------|----------|-------------|
| Mode                      | Front | Rear | Left edge | Right edge | Top edge | Bottom edge |
| WWAN-Main                 | Yes   | Yes  | Yes       | Yes        | No       | Yes         |
| WIFI                      | Yes   | Yes  | No        | Yes        | Yes      | No          |

### 13 Evaluation of Simultaneous

**Table 13.1: The sum of SAR values for Main antenna + WiFi-2.4G**

|                                   | Position                   | Main antenna | WiFi-2.4G | Sum         |
|-----------------------------------|----------------------------|--------------|-----------|-------------|
| <b>Highest SAR value for Head</b> | Left head, Touch (LTE B26) | 0.38         | 1.12      | <b>1.50</b> |
| <b>Highest SAR value for Body</b> | Rear 10mm (WCDMA B4)       | 0.97         | 0.61      | <b>1.58</b> |

**Table 13.2: The sum of SAR values for Main antenna +BT**

|                                   | Position                   | Main antenna | BT    | Sum         |
|-----------------------------------|----------------------------|--------------|-------|-------------|
| <b>Highest SAR value for Head</b> | Right head, Touch (GSM850) | 0.42         | <0.01 | <b>0.42</b> |
| <b>Highest SAR value for Body</b> | Rear 10mm (GSM1900)        | 1.24         | <0.01 | <b>1.24</b> |
|                                   | Rear 10mm (WCDMA B2)       | 1.24         | <0.01 | <b>1.24</b> |

#### Conclusion:

According to the above tables, the sum of reported SAR values is<1.6W/kg. So the simultaneous transmission SAR with volume scans is not required.

**Table 13.5: The sum of reported SAR values for main antenna and WiFi2.4G (SPLSR)**

| /                                             | Position  | Band        | Main antenna SAR1 | WiFi SAR2 | Sum (1g)    | Distance (mm) Ri | Ratio | Limit |
|-----------------------------------------------|-----------|-------------|-------------------|-----------|-------------|------------------|-------|-------|
| <b>Highest reported SAR value for Hotspot</b> | Rear 10mm | GSM850      | 0.66              | 0.61      | <b>1.27</b> | /                | /     | ≤0.04 |
|                                               | Rear 10mm | GSM1900     | 1.24              | 0.61      | <b>1.85</b> | 136.8            | 0.02  |       |
|                                               | Rear 10mm | WCDMA B2    | 1.15              | 0.61      | <b>1.76</b> | 132.73           | 0.02  |       |
|                                               | Rear 10mm | WCDMA B4    | 0.97              | 0.61      | <b>1.58</b> | /                | /     |       |
|                                               | Rear 10mm | LTE B12     | 0.42              | 0.61      | <b>1.03</b> | /                | /     |       |
|                                               | Rear 10mm | LTE B25     | 1.18              | 0.61      | <b>1.79</b> | 144.08           | 0.02  |       |
|                                               | Rear 10mm | LTE B26     | 0.62              | 0.61      | <b>1.23</b> | /                | /     |       |
|                                               | Rear 10mm | LTE B41 PC2 | 1.12              | 0.61      | <b>1.73</b> | 134.15           | 0.02  |       |
|                                               | Rear 10mm | LTE B66     | 1.19              | 0.61      | <b>1.80</b> | 133.82           | 0.02  |       |
| <b>Highest reported SAR value for Phablet</b> | Rear 0mm  | GSM1900     | 2.23              | 1.28      | <b>3.51</b> | /                | /     | ≤0.10 |
|                                               | Rear 0mm  | WCDMA B2    | 3.07              | 1.28      | <b>4.35</b> | 140.57           | 0.06  |       |
|                                               | Rear 0mm  | WCDMA B4    | 2.57              | 1.28      | <b>3.85</b> | /                | /     |       |
|                                               | Rear 0mm  | LTE B25     | 3.17              | 1.28      | <b>4.45</b> | 149.96           | 0.06  |       |
|                                               | Rear 0mm  | LTE B66     | 3.16              | 1.28      | <b>4.44</b> | 133.13           | 0.07  |       |

According to the KDB 447498 D01, when the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio. The ratio is determined by  $(SAR1 + SAR2)1.5/R_i$ , rounded to two decimal digits, and must be  $\leq 0.04$  for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion. When 10-g SAR applies, the ratio must be  $\leq 0.10$ . SAR1 and SAR2 are the highest reported or estimated SAR values for each antenna in the pair, and  $R_i$  is the separation distance in mm between the peak SAR locations for the antenna pair.

| Find distance of maxima                                                                                                                                                      |                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| <div> <div>Maxima and position w.r.t. Grid Reference Point</div> <div>associated 1g averages</div> </div>                                                                    |                                                          |
| <div> <div>Zoom Scan (D:\2022\I22Z61733(FCC)\hezhi\LTE B66 Body Rear 0mm 2# ZS 11-9.da53:0/LTE B66 Body Rear 0...</div> <div>Max. 1 at (-13.80, 59.30, 0.73) mm</div> </div> | 6.60 W/kg                                                |
| <div> <div>Zoom Scan (D:\2022\I22Z61733(FCC)\hezhi\WLAN2-4G Body Rear 0mm 61a CYF 10-26.da53:0/WLAN2.4G B...</div> <div>Max. 2 at (21.00, -69.20, -0.30) mm</div> </div>     | 2.24 W/kg                                                |
| <div>Distances and Separation Ratios</div>                                                                                                                                   |                                                          |
| Max. 1 - Max. 2                                                                                                                                                              | Distance [mm]: 133.13 / Separation ratio [W/kg/mm]: 0.20 |
| <div>Done</div>                                                                                                                                                              |                                                          |

Picture 13.1 Distance evaluation for LTE B66 and WiFi2.4G Body (Rear 0mm)

## 14 SAR Test Result

It is determined by user manual for the distance between the EUT and the phantom bottom.

The distance is 10 mm and just applied to the condition of body worn accessory.

It is performed for all SAR measurements with area scan based 1-g SAR estimation (Fast SAR). A zoom scan measurement is added when the estimated 1-g SAR is the highest measured SAR in each exposure configuration, wireless mode and frequency band combination or more than 1.2W/kg.

The calculated SAR is obtained by the following formula:

$$\text{Reported SAR} = \text{Measured SAR} \times 10^{(P_{\text{Target}} - P_{\text{Measured}})/10}$$

Where  $P_{\text{Target}}$  is the power of manufacturing upper limit;

$P_{\text{Measured}}$  is the measured power in chapter 11.

**Table 14.1: Duty Cycle**

| Mode                | Duty Cycle       |
|---------------------|------------------|
| GSM 850/1900        | 1:4              |
| GPRS/EGPRS 850/1900 | 1:4              |
| WCDMA&LTE FDD       | 1:1              |
| LTE TDD             | 1:1.58 or 1:2.37 |

## 14.1 SAR results for 2G/3G/4G

**Table 14.1-1: SAR Values (GSM 850 MHz Band – Head)**

| Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C |       |       |               |            |                       |                          |                         |                         |                          |                          |                  |
|---------------------------------------------------------|-------|-------|---------------|------------|-----------------------|--------------------------|-------------------------|-------------------------|--------------------------|--------------------------|------------------|
| Frequency                                               |       | Side  | Test Position | Figure No. | Conducted Power (dBm) | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g) (W/kg) | Power Drift (dB) |
| Ch.                                                     | MHz   |       |               |            |                       |                          |                         |                         |                          |                          |                  |
| 251                                                     | 848.8 | Left  | Cheek         | /          | 30.91                 | 31.5                     | 0.261                   | <b>0.30</b>             | 0.206                    | <b>0.24</b>              | -0.08            |
| 190                                                     | 836.6 | Left  | Cheek         | Fig.1      | 30.97                 | 31.5                     | 0.299                   | <b>0.34</b>             | 0.237                    | <b>0.27</b>              | 0.04             |
| 128                                                     | 824.2 | Left  | Cheek         | /          | 30.97                 | 31.5                     | 0.235                   | <b>0.27</b>             | 0.187                    | <b>0.21</b>              | -0.02            |
| 190                                                     | 836.6 | Left  | Tilt          | /          | 30.97                 | 31.5                     | 0.174                   | <b>0.20</b>             | 0.14                     | <b>0.16</b>              | 0.13             |
| 190                                                     | 836.6 | Right | Cheek         | /          | 30.97                 | 31.5                     | 0.295                   | <b>0.33</b>             | 0.23                     | <b>0.26</b>              | -0.13            |
| 190                                                     | 836.6 | Right | Tilt          | /          | 30.97                 | 31.5                     | 0.202                   | <b>0.23</b>             | 0.161                    | <b>0.18</b>              | -0.14            |

**Table 14.1-2: SAR Values (GSM 850 MHz Band - Body)**

| Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C |       |                            |               |            |                       |                          |                         |                         |                          |                          |                  |
|---------------------------------------------------------|-------|----------------------------|---------------|------------|-----------------------|--------------------------|-------------------------|-------------------------|--------------------------|--------------------------|------------------|
| Frequency                                               |       | Mode (number of timeslots) | Test Position | Figure No. | Conducted Power (dBm) | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g) (W/kg) | Power Drift (dB) |
| Ch.                                                     | MHz   |                            |               |            |                       |                          |                         |                         |                          |                          |                  |
| 190                                                     | 836.6 | GPRS (2)                   | Front         | /          | 30.97                 | 31.5                     | 0.334                   | <b>0.38</b>             | 0.263                    | <b>0.30</b>              | 0.12             |
| 251                                                     | 848.8 | GPRS (2)                   | Rear          | /          | 30.91                 | 31.5                     | 0.535                   | <b>0.61</b>             | 0.425                    | <b>0.49</b>              | -0.13            |
| 190                                                     | 836.6 | GPRS (2)                   | Rear          | Fig.2      | 30.97                 | 31.5                     | 0.583                   | <b>0.66</b>             | 0.452                    | <b>0.51</b>              | 0.12             |
| 128                                                     | 824.2 | GPRS (2)                   | Rear          | /          | 30.97                 | 31.5                     | 0.566                   | <b>0.64</b>             | 0.438                    | <b>0.49</b>              | -0.06            |
| 190                                                     | 836.6 | GPRS (2)                   | Left          | /          | 30.97                 | 31.5                     | 0.234                   | <b>0.26</b>             | 0.175                    | <b>0.20</b>              | -0.09            |
| 190                                                     | 836.6 | GPRS (2)                   | Right         | /          | 30.97                 | 31.5                     | 0.294                   | <b>0.33</b>             | 0.223                    | <b>0.25</b>              | 0.09             |
| 190                                                     | 836.6 | GPRS (2)                   | Bottom        | /          | 30.97                 | 31.5                     | 0.139                   | <b>0.16</b>             | 0.089                    | <b>0.10</b>              | -0.18            |
| 190                                                     | 836.6 | EGPRS (2)                  | Rear          | /          | 31.01                 | 31.5                     | 0.562                   | <b>0.63</b>             | 0.437                    | <b>0.49</b>              | -0.06            |

Note: The distance between the EUT and the phantom bottom is 10mm.

**Table 14.1-3: SAR Values (GSM 1900 MHz Band - Head)**

| Ambient Temperature: 22.9 °C |        |       |               |            |                       | Liquid Temperature: 22.5°C |                         |                         |                          |                           |                  |
|------------------------------|--------|-------|---------------|------------|-----------------------|----------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Frequency                    |        | Side  | Test Position | Figure No. | Conducted Power (dBm) | Max. tune-up Power (dBm)   | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |       |               |            |                       |                            |                         |                         |                          |                           |                  |
| 661                          | 1880   | Left  | Cheek         | /          | 27.95                 | 28.5                       | 0.079                   | <b>0.09</b>             | 0.049                    | <b>0.06</b>               | -0.14            |
| 661                          | 1880   | Left  | Tilt          | /          | 27.95                 | 28.5                       | 0.04                    | <b>0.05</b>             | 0.024                    | <b>0.03</b>               | -0.15            |
| 810                          | 1909.8 | Right | Cheek         | /          | 28.07                 | 28.5                       | 0.122                   | <b>0.13</b>             | 0.072                    | <b>0.08</b>               | 0.07             |
| 661                          | 1880   | Right | Cheek         | Fig.3      | 27.95                 | 28.5                       | 0.129                   | <b>0.15</b>             | 0.076                    | <b>0.09</b>               | 0.17             |
| 512                          | 1850.2 | Right | Cheek         | /          | 27.81                 | 28.5                       | 0.107                   | <b>0.13</b>             | 0.061                    | <b>0.07</b>               | 0.03             |
| 661                          | 1880   | Right | Tilt          | /          | 27.95                 | 28.5                       | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |

**Table 14.1-4: SAR Values (GSM 1900 MHz Band – Body worn)**

| Ambient Temperature: 22.9 °C |        |                            |               |            |                       | Liquid Temperature: 22.5°C |                         |                         |                          |                           |                  |
|------------------------------|--------|----------------------------|---------------|------------|-----------------------|----------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Frequency                    |        | Mode (number of timeslots) | Test Position | Figure No. | Conducted Power (dBm) | Max. tune-up Power (dBm)   | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |                            |               |            |                       |                            |                         |                         |                          |                           |                  |
| 661                          | 1880   | GPRS (2)                   | Front         | /          | 24.01                 | 25.5                       | 0.24                    | <b>0.34</b>             | 0.137                    | <b>0.19</b>               | -0.1             |
| 810                          | 1909.8 | GPRS (2)                   | Rear          | Fig.4      | 24.15                 | 25.5                       | 0.59                    | <b>0.81</b>             | 0.322                    | <b>0.44</b>               | 0.11             |
| 661                          | 1880   | GPRS (2)                   | Rear          | /          | 24.01                 | 25.5                       | 0.538                   | <b>0.76</b>             | 0.298                    | <b>0.42</b>               | 0.06             |
| 512                          | 1850.2 | GPRS (2)                   | Rear          | /          | 23.98                 | 25.5                       | 0.447                   | <b>0.63</b>             | 0.244                    | <b>0.35</b>               | 0.15             |
| 810                          | 1909.8 | EGPRS (2)                  | Rear          | /          | 24.14                 | 25.5                       | 0.573                   | <b>0.78</b>             | 0.315                    | <b>0.43</b>               | 0.09             |

Note1: The distance between the EUT and the phantom bottom is 15mm

**Table 14.1-5: SAR Values (GSM 1900 MHz Band – Hotspot)**

| Ambient Temperature: 22.9 °C |        |                            |               |            |                       | Liquid Temperature: 22.5°C |                         |                         |                          |                           |                  |
|------------------------------|--------|----------------------------|---------------|------------|-----------------------|----------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Frequency                    |        | Mode (number of timeslots) | Test Position | Figure No. | Conducted Power (dBm) | Max. tune-up Power (dBm)   | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |                            |               |            |                       |                            |                         |                         |                          |                           |                  |
| 661                          | 1880   | GPRS (2)                   | Front         | /          | 23.33                 | 24.5                       | 0.361                   | <b>0.47</b>             | 0.192                    | <b>0.25</b>               | -0.08            |
| 810                          | 1909.8 | GPRS (2)                   | Rear          | Fig.5      | 23.54                 | 24.5                       | 0.991                   | <b>1.24</b>             | 0.502                    | <b>0.63</b>               | -0.16            |
| 661                          | 1880   | GPRS (2)                   | Rear          | /          | 23.33                 | 24.5                       | 0.828                   | <b>1.08</b>             | 0.427                    | <b>0.56</b>               | 0.13             |
| 512                          | 1850.2 | GPRS (2)                   | Rear          | /          | 23.36                 | 24.5                       | 0.652                   | <b>0.85</b>             | 0.332                    | <b>0.43</b>               | 0.04             |
| 661                          | 1880   | GPRS (2)                   | Left          | /          | 23.33                 | 24.5                       | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |
| 661                          | 1880   | GPRS (2)                   | Right         | /          | 23.33                 | 24.5                       | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |
| 810                          | 1909.8 | GPRS (2)                   | Bottom        | /          | 23.54                 | 24.5                       | 0.975                   | <b>1.22</b>             | 0.514                    | <b>0.64</b>               | -0.18            |
| 661                          | 1880   | GPRS (2)                   | Bottom        | /          | 23.33                 | 24.5                       | 0.875                   | <b>1.15</b>             | 0.44                     | <b>0.58</b>               | 0.08             |
| 512                          | 1850.2 | GPRS (2)                   | Bottom        | /          | 23.36                 | 24.5                       | 0.639                   | <b>0.83</b>             | 0.318                    | <b>0.41</b>               | -0.11            |
| 810                          | 1909.8 | EGPRS (2)                  | Rear          | /          | 23.57                 | 24.5                       | 0.974                   | <b>1.21</b>             | 0.485                    | <b>0.60</b>               | 0.09             |

Note1: The distance between the EUT and the phantom bottom is 10mm

**Table 14.1-6: SAR Values (WCDMA 1900 MHz Band - Head)**

| Ambient Temperature: 22.9 °C |        |       |               |            |                       | Liquid Temperature: 22.5 °C |                         |                         |                          |                          |                  |
|------------------------------|--------|-------|---------------|------------|-----------------------|-----------------------------|-------------------------|-------------------------|--------------------------|--------------------------|------------------|
| Frequency                    |        | Side  | Test Position | Figure No. | Conducted Power (dBm) | Max. tune-up Power (dBm)    | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |       |               |            |                       |                             |                         |                         |                          |                          |                  |
| 9400                         | 1880   | Left  | Cheek         | /          | 23.04                 | 24.5                        | 0.101                   | <b>0.14</b>             | 0.038                    | <b>0.05</b>              | -0.11            |
| 9400                         | 1880   | Left  | Tilt          | /          | 23.04                 | 24.5                        | <0.01                   | <0.01                   | <0.01                    | <0.01                    | /                |
| 9538                         | 1907.6 | Right | Cheek         | Fig.6      | 22.92                 | 24.5                        | 0.152                   | <b>0.22</b>             | 0.091                    | <b>0.13</b>              | -0.06            |
| 9400                         | 1880   | Right | Cheek         | /          | 23.04                 | 24.5                        | 0.146                   | <b>0.20</b>             | 0.087                    | <b>0.12</b>              | -0.18            |
| 9262                         | 1852.4 | Right | Cheek         | /          | 22.97                 | 24.5                        | 0.145                   | <b>0.21</b>             | 0.087                    | <b>0.12</b>              | 0.09             |
| 9400                         | 1880   | Right | Tilt          | /          | 23.04                 | 24.5                        | <0.01                   | <0.01                   | <0.01                    | <0.01                    | /                |

**Table 14.1-7: SAR Values (WCDMA 1900 MHz Band – Body worn)**

| Ambient Temperature: 22.9°C |        |               |            |                              |                                 | Liquid Temperature: 22.5°C    |                               |                                |                                |                        |
|-----------------------------|--------|---------------|------------|------------------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|------------------------|
| Frequency                   |        | Test Position | Figure No. | Conducte<br>d Power<br>(dBm) | Max. tune-<br>up Power<br>(dBm) | Measured<br>SAR(1g)<br>(W/kg) | Reported<br>SAR(1g)(<br>W/kg) | Measured<br>SAR(10g)<br>(W/kg) | Reported<br>SAR(10g)<br>(W/kg) | Power<br>Drift<br>(dB) |
| Ch.                         | MHz    |               |            |                              |                                 |                               |                               |                                |                                |                        |
| 9400                        | 1880   | Front         | /          | 20.01                        | 21                              | 0.31                          | <b>0.39</b>                   | 0.178                          | <b>0.22</b>                    | -0.03                  |
| 9538                        | 1907.6 | Rear          | /          | 20.02                        | 21                              | 0.571                         | <b>0.72</b>                   | 0.316                          | <b>0.40</b>                    | 0.06                   |
| 9400                        | 1880   | Rear          | /          | 20.01                        | 21                              | 0.704                         | <b>0.88</b>                   | 0.385                          | <b>0.48</b>                    | 0.13                   |
| 9262                        | 1852.4 | Rear          | Fig.7      | 20.12                        | 21                              | 0.796                         | <b>0.97</b>                   | 0.431                          | <b>0.53</b>                    | -0.09                  |

Note1: The distance between the EUT and the phantom bottom is 15mm

**Table 14.1-8: SAR Values (WCDMA 1900 MHz Band - Hotspot)**

| Ambient Temperature: 22.9 °C |        |               |            |                              |                                 | Liquid Temperature: 22.5°C    |                               |                                |                                |                        |
|------------------------------|--------|---------------|------------|------------------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|------------------------|
| Frequency                    |        | Test Position | Figure No. | Conducte<br>d Power<br>(dBm) | Max. tune-<br>up Power<br>(dBm) | Measured<br>SAR(1g)<br>(W/kg) | Reported<br>SAR(1g)(<br>W/kg) | Measured<br>SAR(10g)<br>(W/kg) | Reported<br>SAR(10g)<br>(W/kg) | Power<br>Drift<br>(dB) |
| Ch.                          | MHz    |               |            |                              |                                 |                               |                               |                                |                                |                        |
| 9400                         | 1880   | Front         | /          | 17.05                        | 18.5                            | 0.35                          | <b>0.49</b>                   | 0.184                          | <b>0.26</b>                    | 0.12                   |
| 9538                         | 1907.6 | Rear          | /          | 16.99                        | 18.5                            | 0.668                         | <b>0.95</b>                   | 0.346                          | <b>0.49</b>                    | 0.13                   |
| 9400                         | 1880   | Rear          | /          | 17.05                        | 18.5                            | 0.808                         | <b>1.13</b>                   | 0.414                          | <b>0.58</b>                    | 0.17                   |
| 9262                         | 1852.4 | Rear          | /          | 17.11                        | 18.5                            | 0.832                         | <b>1.15</b>                   | 0.422                          | <b>0.58</b>                    | -0.18                  |
| 9400                         | 1880   | Left          | /          | 17.05                        | 18.5                            | <0.01                         | <0.01                         | <0.01                          | <0.01                          | /                      |
| 9400                         | 1880   | Right         | /          | 17.05                        | 18.5                            | <0.01                         | <0.01                         | <0.01                          | <0.01                          | /                      |
| 9538                         | 1907.6 | Bottom        | /          | 16.99                        | 18.5                            | 0.767                         | <b>1.09</b>                   | 0.391                          | <b>0.55</b>                    | -0.05                  |
| 9400                         | 1880   | Bottom        | Fig.8      | 17.05                        | 18.5                            | 0.889                         | <b>1.24</b>                   | 0.449                          | <b>0.63</b>                    | -0.03                  |
| 9262                         | 1852.4 | Bottom        | /          | 17.11                        | 18.5                            | 0.881                         | <b>1.21</b>                   | 0.443                          | <b>0.61</b>                    | -0.14                  |

Note1: The distance between the EUT and the phantom bottom is 10mm

**Table 14.1-9: SAR Values (WCDMA 1700 MHz Band - Head)**

| Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C |        |       |               |            |                       |                          |                         |                         |                          |                          |                  |
|---------------------------------------------------------|--------|-------|---------------|------------|-----------------------|--------------------------|-------------------------|-------------------------|--------------------------|--------------------------|------------------|
| Frequency                                               |        | Side  | Test Position | Figure No. | Conducted Power (dBm) | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g) (W/kg) | Power Drift (dB) |
| Ch.                                                     | MHz    |       |               |            |                       |                          |                         |                         |                          |                          |                  |
| 1412                                                    | 1732.4 | Left  | Cheek         | /          | 23.12                 | 24.5                     | 0.077                   | <b>0.11</b>             | 0.052                    | <b>0.07</b>              | 0.01             |
| 1412                                                    | 1732.4 | Left  | Tilt          | /          | 23.12                 | 24.5                     | 0.056                   | <b>0.08</b>             | 0.036                    | <b>0.05</b>              | 0.12             |
| 1513                                                    | 1752.6 | Right | Cheek         | /          | 23.14                 | 24.5                     | 0.118                   | <b>0.16</b>             | 0.074                    | <b>0.10</b>              | -0.1             |
| 1412                                                    | 1732.4 | Right | Cheek         | /          | 23.12                 | 24.5                     | 0.117                   | <b>0.16</b>             | 0.073                    | <b>0.10</b>              | -0.02            |
| 1312                                                    | 1712.4 | Right | Cheek         | Fig.9      | 23.21                 | 24.5                     | 0.125                   | <b>0.17</b>             | 0.08                     | <b>0.11</b>              | 0.02             |
| 1412                                                    | 1732.4 | Right | Tilt          | /          | 23.12                 | 24.5                     | 0.046                   | <b>0.06</b>             | 0.03                     | <b>0.04</b>              | -0.07            |

**Table 14.1-10: SAR Values (WCDMA 1700 MHz Band – Body worn)**

| Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C |        |               |            |                       |                          |                         |                         |                          |                          |                  |
|---------------------------------------------------------|--------|---------------|------------|-----------------------|--------------------------|-------------------------|-------------------------|--------------------------|--------------------------|------------------|
| Frequency                                               |        | Test Position | Figure No. | Conducted Power (dBm) | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g) (W/kg) | Power Drift (dB) |
| Ch.                                                     | MHz    |               |            |                       |                          |                         |                         |                          |                          |                  |
| 1412                                                    | 1732.5 | Front         | /          | 20.08                 | 21.5                     | 0.283                   | <b>0.39</b>             | 0.168                    | <b>0.23</b>              | 0.14             |
| 1513                                                    | 1752.6 | Rear          | Fig.10     | 20.07                 | 21.5                     | 0.635                   | <b>0.88</b>             | 0.358                    | <b>0.50</b>              | -0.1             |
| 1412                                                    | 1732.5 | Rear          | /          | 20.08                 | 21.5                     | 0.627                   | <b>0.87</b>             | 0.353                    | <b>0.49</b>              | -0.16            |
| 1312                                                    | 1712.4 | Rear          | /          | 20.18                 | 21.5                     | 0.632                   | <b>0.86</b>             | 0.357                    | <b>0.48</b>              | 0.17             |

Note1: The distance between the EUT and the phantom bottom is 15mm

**Table 14.1-11: SAR Values (WCDMA 1700 MHz Band - Hotspot)**

| Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C |        |               |            |                       |                          |                         |                         |                          |                          |                  |
|---------------------------------------------------------|--------|---------------|------------|-----------------------|--------------------------|-------------------------|-------------------------|--------------------------|--------------------------|------------------|
| Frequency                                               |        | Test Position | Figure No. | Conducted Power (dBm) | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g) (W/kg) | Power Drift (dB) |
| Ch.                                                     | MHz    |               |            |                       |                          |                         |                         |                          |                          |                  |
| 1412                                                    | 1732.5 | Front         | /          | 17.17                 | 18.5                     | 0.279                   | <b>0.38</b>             | 0.153                    | <b>0.21</b>              | 0.13             |
| 1513                                                    | 1752.6 | Rear          | Fig.11     | 17.12                 | 18.5                     | 0.707                   | <b>0.97</b>             | 0.366                    | <b>0.50</b>              | 0.12             |
| 1412                                                    | 1732.5 | Rear          | /          | 17.17                 | 18.5                     | 0.684                   | <b>0.93</b>             | 0.356                    | <b>0.48</b>              | 0.03             |
| 1312                                                    | 1712.4 | Rear          | /          | 17.23                 | 18.5                     | 0.682                   | <b>0.91</b>             | 0.349                    | <b>0.47</b>              | 0.15             |
| 1412                                                    | 1732.5 | Left          | /          | 17.17                 | 18.5                     | <0.01                   | <0.01                   | <0.01                    | <0.01                    | /                |
| 1412                                                    | 1732.5 | Right         | /          | 17.17                 | 18.5                     | <0.01                   | <0.01                   | <0.01                    | <0.01                    | /                |
| 1513                                                    | 1752.6 | Bottom        | /          | 17.12                 | 18.5                     | 0.674                   | <b>0.93</b>             | 0.349                    | <b>0.48</b>              | -0.1             |
| 1412                                                    | 1732.5 | Bottom        | /          | 17.17                 | 18.5                     | 0.641                   | <b>0.87</b>             | 0.331                    | <b>0.45</b>              | -0.07            |
| 1312                                                    | 1712.4 | Bottom        | /          | 17.23                 | 18.5                     | 0.602                   | <b>0.81</b>             | 0.31                     | <b>0.42</b>              | 0.05             |

Note1: The distance between the EUT and the phantom bottom is 10mm

**Table 14.1-12: SAR Values (WCDMA 850 MHz Band - Head)**

| Ambient Temperature: 22.9 °C |       |       |               |            |                       | Liquid Temperature: 22.5°C |                         |                         |                          |                          |                  |
|------------------------------|-------|-------|---------------|------------|-----------------------|----------------------------|-------------------------|-------------------------|--------------------------|--------------------------|------------------|
| Frequency                    |       | Side  | Test Position | Figure No. | Conducted Power (dBm) | Max. tune-up Power (dBm)   | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz   |       |               |            |                       |                            |                         |                         |                          |                          |                  |
| 4183                         | 836.6 | Left  | Cheek         | /          | 23.13                 | 24.5                       | 0.236                   | <b>0.32</b>             | 0.195                    | <b>0.27</b>              | 0.09             |
| 4183                         | 836.6 | Left  | Tilt          | /          | 23.13                 | 24.5                       | 0.172                   | <b>0.24</b>             | 0.143                    | <b>0.20</b>              | -0.1             |
| 4233                         | 846.6 | Right | Cheek         | Fig.12     | 23.12                 | 24.5                       | 0.26                    | <b>0.36</b>             | 0.205                    | <b>0.28</b>              | 0.06             |
| 4183                         | 836.6 | Right | Cheek         | /          | 23.13                 | 24.5                       | 0.247                   | <b>0.34</b>             | 0.196                    | <b>0.27</b>              | -0.17            |
| 4132                         | 826.4 | Right | Cheek         | /          | 23.26                 | 24.5                       | 0.258                   | <b>0.34</b>             | 0.204                    | <b>0.27</b>              | -0.15            |
| 4183                         | 836.6 | Right | Tilt          | /          | 23.13                 | 24.5                       | 0.178                   | <b>0.24</b>             | 0.145                    | <b>0.20</b>              | -0.03            |

**Table 14.1-13: SAR Values (WCDMA 850 MHz Band - Body)**

| Ambient Temperature: 22.9 °C |       |               |            |                       |                          | Liquid Temperature: 22.5°C |                         |                          |                           |                  |
|------------------------------|-------|---------------|------------|-----------------------|--------------------------|----------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Frequency                    |       | Test Position | Figure No. | Conducted Power (dBm) | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg)    | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz   |               |            |                       |                          |                            |                         |                          |                           |                  |
| 4183                         | 836.6 | Front         | /          | 23.13                 | 24.5                     | 0.288                      | <b>0.39</b>             | 0.224                    | <b>0.31</b>               | -0.17            |
| 4233                         | 846.6 | Rear          | /          | 23.12                 | 24.5                     | 0.333                      | <b>0.46</b>             | 0.259                    | <b>0.36</b>               | -0.01            |
| 4183                         | 836.6 | Rear          | /          | 23.13                 | 24.5                     | 0.379                      | <b>0.52</b>             | 0.296                    | <b>0.41</b>               | -0.06            |
| 4132                         | 826.4 | Rear          | Fig.13     | 23.26                 | 24.5                     | 0.393                      | <b>0.52</b>             | 0.305                    | <b>0.41</b>               | -0.02            |
| 4183                         | 836.6 | Left          | /          | 23.13                 | 24.5                     | 0.204                      | <b>0.28</b>             | 0.147                    | <b>0.20</b>               | -0.07            |
| 4183                         | 836.6 | Right         | /          | 23.13                 | 24.5                     | 0.249                      | <b>0.34</b>             | 0.178                    | <b>0.24</b>               | -0.17            |
| 4183                         | 836.6 | Bottom        | /          | 23.13                 | 24.5                     | 0.129                      | <b>0.18</b>             | 0.081                    | <b>0.11</b>               | -0.07            |

Note: The distance between the EUT and the phantom bottom is 10mm.

**Table 14.1-14: SAR Values (LTE Band12 - Head)**

| Ambient Temperature: 22.9 °C |     |          |       |               |            | Liquid Temperature: 22.5°C |                          |                         |                         |                          |                           |                  |
|------------------------------|-----|----------|-------|---------------|------------|----------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Frequency                    |     | Mode     | Side  | Test Position | Figure No. | Conducted Power (dBm)      | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz |          |       |               |            |                            |                          |                         |                         |                          |                           |                  |
| 23060                        | 704 | 1RB-Mid  | Left  | Cheek         | /          | 24.03                      | 25                       | 0.201                   | <b>0.25</b>             | 0.163                    | <b>0.20</b>               | 0.12             |
| 23060                        | 704 | 1RB-Mid  | Left  | Tilt          | /          | 24.03                      | 25                       | 0.15                    | <b>0.19</b>             | 0.12                     | <b>0.15</b>               | -0.08            |
| 23060                        | 704 | 1RB-Mid  | Right | Cheek         | Fig.14     | 24.03                      | 25                       | 0.207                   | <b>0.26</b>             | 0.164                    | <b>0.21</b>               | -0.06            |
| 23060                        | 704 | 1RB-Mid  | Right | Tilt          | /          | 24.03                      | 25                       | 0.147                   | <b>0.18</b>             | 0.119                    | <b>0.15</b>               | -0.12            |
| 23060                        | 704 | 25RB-Low | Left  | Cheek         | /          | 23.01                      | 24                       | 0.152                   | <b>0.19</b>             | 0.122                    | <b>0.15</b>               | -0.13            |
| 23060                        | 704 | 25RB-Low | Left  | Tilt          | /          | 23.01                      | 24                       | 0.128                   | <b>0.16</b>             | 0.103                    | <b>0.13</b>               | 0.06             |
| 23060                        | 704 | 25RB-Low | Right | Cheek         | /          | 23.01                      | 24                       | 0.148                   | <b>0.19</b>             | 0.117                    | <b>0.15</b>               | -0.08            |
| 23060                        | 704 | 25RB-Low | Right | Tilt          | /          | 23.01                      | 24                       | 0.111                   | <b>0.14</b>             | 0.088                    | <b>0.11</b>               | 0.17             |

Note1: The LTE mode is QPSK\_10MHz.

**Table 14.1-15: SAR Values (LTE Band12 - Body)**

| Ambient Temperature: 22.9 °C |     |                 |            |                                 | Liquid Temperature: 22.5°C      |                               |                               |                                |                                 |                        |
|------------------------------|-----|-----------------|------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|--------------------------------|---------------------------------|------------------------|
| Frequency                    |     | Mode            | Figure No. | Conduct<br>ed<br>Power<br>(dBm) | Max. tune-<br>up Power<br>(dBm) | Measured<br>SAR(1g)<br>(W/kg) | Reported<br>SAR(1g)(<br>W/kg) | Measured<br>SAR(10g)<br>(W/kg) | Reported<br>SAR(10g<br>) (W/kg) | Power<br>Drift<br>(dB) |
| Ch.                          | MHz |                 |            |                                 |                                 |                               |                               |                                |                                 |                        |
| 23060                        | 704 | 1RB-Mid Front   | /          | 24.03                           | 25                              | 0.197                         | <b>0.25</b>                   | 0.154                          | <b>0.19</b>                     | -0.06                  |
| 23060                        | 704 | 1RB-Mid Rear    | Fig.15     | 24.03                           | 25                              | 0.338                         | <b>0.42</b>                   | 0.263                          | <b>0.33</b>                     | -0.11                  |
| 23060                        | 704 | 1RB-Mid Left    | /          | 24.03                           | 25                              | 0.22                          | <b>0.28</b>                   | 0.162                          | <b>0.20</b>                     | 0.17                   |
| 23060                        | 704 | 1RB-Mid Right   | /          | 24.03                           | 25                              | 0.189                         | <b>0.24</b>                   | 0.141                          | <b>0.18</b>                     | -0.12                  |
| 23060                        | 704 | 1RB-Mid Bottom  | /          | 24.03                           | 25                              | 0.066                         | <b>0.08</b>                   | 0.037                          | <b>0.05</b>                     | -0.17                  |
| 23060                        | 704 | 25RB-Low Front  | /          | 23.01                           | 24                              | 0.153                         | <b>0.19</b>                   | 0.12                           | <b>0.15</b>                     | 0.12                   |
| 23060                        | 704 | 25RB-Low Rear   | /          | 23.01                           | 24                              | 0.254                         | <b>0.32</b>                   | 0.199                          | <b>0.25</b>                     | -0.16                  |
| 23060                        | 704 | 25RB-Low Left   | /          | 23.01                           | 24                              | 0.169                         | <b>0.21</b>                   | 0.122                          | <b>0.15</b>                     | -0.12                  |
| 23060                        | 704 | 25RB-Low Right  | /          | 23.01                           | 24                              | 0.146                         | <b>0.18</b>                   | 0.107                          | <b>0.13</b>                     | 0.12                   |
| 23060                        | 704 | 25RB-Low Bottom | /          | 23.01                           | 24                              | 0.045                         | <b>0.06</b>                   | 0.027                          | <b>0.03</b>                     | 0.15                   |

Note1: The distance between the EUT and the phantom bottom is 10mm

Note2: The LTE mode is QPSK\_10MHz.

**Table 14.1-16: SAR Values (LTE Band25 - Head)**

| Ambient Temperature: 22.9 °C |      |          |       |                  | Liquid Temperature: 22.5°C |                                 |                                   |                               |                               |                                |                                 |                        |
|------------------------------|------|----------|-------|------------------|----------------------------|---------------------------------|-----------------------------------|-------------------------------|-------------------------------|--------------------------------|---------------------------------|------------------------|
| Frequency                    |      | Mode     | Side  | Test<br>Position | Figure<br>No.              | Condu<br>cted<br>Power<br>(dBm) | Max.<br>tune-up<br>Power<br>(dBm) | Measured<br>SAR(1g)<br>(W/kg) | Reported<br>SAR(1g)(<br>W/kg) | Measured<br>SAR(10g)<br>(W/kg) | Reported<br>SAR(10g<br>) (W/kg) | Power<br>Drift<br>(dB) |
| Ch.                          | MHz  |          |       |                  |                            |                                 |                                   |                               |                               |                                |                                 |                        |
| 26590                        | 1905 | 1RB-Mid  | Left  | Cheek            | /                          | 23.6                            | 24.5                              | 0.098                         | <b>0.12</b>                   | 0.037                          | <b>0.05</b>                     | 0.05                   |
| 26590                        | 1905 | 1RB-Mid  | Left  | Tilt             | /                          | 23.6                            | 24.5                              | 0.064                         | <b>0.08</b>                   | 0.04                           | <b>0.05</b>                     | -0.11                  |
| 26590                        | 1905 | 1RB-Mid  | Right | Cheek            | Fig.16                     | 23.6                            | 24.5                              | 0.149                         | <b>0.18</b>                   | 0.089                          | <b>0.11</b>                     | 0.05                   |
| 26590                        | 1905 | 1RB-Mid  | Right | Tilt             | /                          | 23.6                            | 24.5                              | 0.038                         | <b>0.05</b>                   | 0.024                          | <b>0.03</b>                     | 0.01                   |
| 26590                        | 1905 | 50RB-Low | Left  | Cheek            | /                          | 22.69                           | 23.5                              | 0.08                          | <b>0.10</b>                   | 0.03                           | <b>0.04</b>                     | 0.08                   |
| 26590                        | 1905 | 50RB-Low | Left  | Tilt             | /                          | 22.69                           | 23.5                              | 0.038                         | <b>0.05</b>                   | 0.023                          | <b>0.03</b>                     | -0.11                  |
| 26590                        | 1905 | 50RB-Low | Right | Cheek            | /                          | 22.69                           | 23.5                              | 0.121                         | <b>0.15</b>                   | 0.072                          | <b>0.09</b>                     | -0.1                   |
| 26590                        | 1905 | 50RB-Low | Right | Tilt             | /                          | 22.69                           | 23.5                              | <0.01                         | <0.01                         | <0.01                          | <0.01                           | /                      |

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-17: SAR Values (LTE Band25 – Body Worn)**

| Ambient Temperature: 22.9 °C |        |                |            | Liquid Temperature: 22.5 °C |                          |                         |                         |                          |                           |                  |
|------------------------------|--------|----------------|------------|-----------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Frequency                    |        | Mode           | Figure No. | Conduct ed Power (dBm)      | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |                |            |                             |                          |                         |                         |                          |                           |                  |
| 26590                        | 1905   | 1RB-Mid Front  | /          | 20.75                       | 21                       | 0.336                   | <b>0.36</b>             | 0.195                    | <b>0.21</b>               | 0.15             |
| 26590                        | 1905   | 1RB-Mid Rear   | /          | 20.75                       | 21                       | 0.783                   | <b>0.83</b>             | 0.437                    | <b>0.46</b>               | 0.1              |
| 26365                        | 1882.5 | 1RB-Mid Rear   | /          | 20.73                       | 21                       | 0.899                   | <b>0.96</b>             | 0.49                     | <b>0.52</b>               | -0.05            |
| 26140                        | 1860   | 1RB-Mid Rear   | Fig.17     | 20.71                       | 21                       | 1.01                    | <b>1.08</b>             | 0.548                    | <b>0.59</b>               | -0.06            |
| 26140                        | 1860   | 100RB Rear     | /          | 20.69                       | 21                       | 0.978                   | <b>1.05</b>             | 0.533                    | <b>0.57</b>               | 0.09             |
| 26590                        | 1905   | 50RB-Low Front | /          | 20.76                       | 21                       | 0.353                   | <b>0.37</b>             | 0.204                    | <b>0.22</b>               | 0.09             |
| 26590                        | 1905   | 50RB-Low Rear  | /          | 20.76                       | 21                       | 0.808                   | <b>0.85</b>             | 0.448                    | <b>0.47</b>               | -0.11            |
| 26365                        | 1882.5 | 50RB-Low Rear  | /          | 20.74                       | 21                       | 0.939                   | <b>1.00</b>             | 0.512                    | <b>0.54</b>               | 0.12             |
| 26140                        | 1860   | 50RB-Low Rear  | /          | 20.73                       | 21                       | 0.952                   | <b>1.01</b>             | 0.52                     | <b>0.55</b>               | 0.13             |

Note1: The distance between the EUT and the phantom bottom is 15mm

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-18: SAR Values (LTE Band25 – Hotspot)**

| Ambient Temperature: 22.9 °C |        |                 |            | Liquid Temperature: 22.5 °C |                          |                         |                         |                          |                           |                  |
|------------------------------|--------|-----------------|------------|-----------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Frequency                    |        | Mode            | Figure No. | Conduct ed Power (dBm)      | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |                 |            |                             |                          |                         |                         |                          |                           |                  |
| 26590                        | 1905   | 1RB-Mid Front   | /          | 17.82                       | 18.5                     | 0.323                   | <b>0.38</b>             | 0.171                    | <b>0.20</b>               | -0.05            |
| 26590                        | 1905   | 1RB-Mid Rear    | /          | 17.82                       | 18.5                     | 0.838                   | <b>0.98</b>             | 0.427                    | <b>0.50</b>               | -0.06            |
| 26365                        | 1882.5 | 1RB-Mid Rear    | /          | 17.78                       | 18.5                     | 0.914                   | <b>1.08</b>             | 0.465                    | <b>0.55</b>               | 0.01             |
| 26140                        | 1860   | 1RB-Mid Rear    | Fig.18     | 17.75                       | 18.5                     | 0.989                   | <b>1.18</b>             | 0.5                      | <b>0.59</b>               | -0.1             |
| 26140                        | 1860   | 100RB Rear      | /          | 17.68                       | 18.5                     | 0.944                   | <b>1.14</b>             | 0.476                    | <b>0.57</b>               | -0.06            |
| 26590                        | 1905   | 1RB-Mid Left    | /          | 17.82                       | 18.5                     | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |
| 26590                        | 1905   | 1RB-Mid Right   | /          | 17.82                       | 18.5                     | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |
| 26590                        | 1905   | 1RB-Mid Bottom  | /          | 17.82                       | 18.5                     | 0.87                    | <b>1.02</b>             | 0.446                    | <b>0.52</b>               | -0.14            |
| 26365                        | 1882.5 | 1RB-Mid Bottom  | /          | 17.78                       | 18.5                     | 0.978                   | <b>1.15</b>             | 0.496                    | <b>0.59</b>               | -0.09            |
| 26140                        | 1860   | 1RB-Mid Bottom  | /          | 17.75                       | 18.5                     | 0.972                   | <b>1.16</b>             | 0.493                    | <b>0.59</b>               | 0.02             |
| 26140                        | 1860   | 100RB Bottom    | /          | 17.68                       | 18.5                     | 0.944                   | <b>1.14</b>             | 0.476                    | <b>0.57</b>               | -0.06            |
| 26590                        | 1905   | 50RB-Low Front  | /          | 17.8                        | 18.5                     | 0.335                   | <b>0.39</b>             | 0.179                    | <b>0.21</b>               | 0.05             |
| 26590                        | 1905   | 50RB-Low Rear   | /          | 17.8                        | 18.5                     | 0.816                   | <b>0.96</b>             | 0.414                    | <b>0.49</b>               | -0.03            |
| 26365                        | 1882.5 | 50RB-Low Rear   | /          | 17.75                       | 18.5                     | 0.934                   | <b>1.11</b>             | 0.472                    | <b>0.56</b>               | 0.09             |
| 26140                        | 1860   | 50RB-Low Rear   | /          | 17.71                       | 18.5                     | 0.971                   | <b>1.16</b>             | 0.487                    | <b>0.58</b>               | -0.07            |
| 26590                        | 1905   | 50RB-Low Left   | /          | 17.8                        | 18.5                     | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |
| 26590                        | 1905   | 50RB-Low Right  | /          | 17.8                        | 18.5                     | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |
| 26590                        | 1905   | 50RB-Low Bottom | /          | 17.8                        | 18.5                     | 0.854                   | <b>1.00</b>             | 0.437                    | <b>0.51</b>               | -0.02            |

|       |        |                 |   |       |      |       |             |       |             |      |
|-------|--------|-----------------|---|-------|------|-------|-------------|-------|-------------|------|
| 26365 | 1882.5 | 50RB-Low Bottom | / | 17.75 | 18.5 | 0.952 | <b>1.13</b> | 0.488 | <b>0.58</b> | 0.06 |
| 26140 | 1860   | 50RB-Low Bottom | / | 17.71 | 18.5 | 0.941 | <b>1.13</b> | 0.476 | <b>0.57</b> | 0.11 |

Note1: The distance between the EUT and the phantom bottom is 10mm

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-19: SAR Values (LTE Band26 - Head)**

| Ambient Temperature: 22.9 °C |       |          |       |               |            | Liquid Temperature: 22.5°C |                          |                         |                         |                          |                           |                   |
|------------------------------|-------|----------|-------|---------------|------------|----------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|-------------------|
| Frequency                    |       | Mode     | Side  | Test Position | Figure No. | Conduct ed Power (dBm)     | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Powe r Drift (dB) |
| Ch.                          | MHz   |          |       |               |            |                            |                          |                         |                         |                          |                           |                   |
| 26865                        | 831.5 | 1RB-Low  | Left  | Cheek         | /          | 23.88                      | 25                       | 0.294                   | <b>0.38</b>             | 0.236                    | <b>0.31</b>               | -0.03             |
| 26865                        | 831.5 | 1RB-Low  | Left  | Tilt          | /          | 23.88                      | 25                       | 0.211                   | <b>0.27</b>             | 0.172                    | <b>0.22</b>               | 0.02              |
| 26865                        | 831.5 | 1RB-Low  | Right | Cheek         | Fig.19     | 23.88                      | 25                       | 0.321                   | <b>0.42</b>             | 0.251                    | <b>0.32</b>               | 0.16              |
| 26865                        | 831.5 | 1RB-Low  | Right | Tilt          | /          | 23.88                      | 25                       | 0.244                   | <b>0.32</b>             | 0.195                    | <b>0.25</b>               | 0.03              |
| 26865                        | 831.5 | 36RB-Low | Left  | Cheek         | /          | 23.01                      | 24                       | 0.264                   | <b>0.33</b>             | 0.213                    | <b>0.27</b>               | 0.12              |
| 26865                        | 831.5 | 36RB-Low | Left  | Tilt          | /          | 23.01                      | 24                       | 0.212                   | <b>0.27</b>             | 0.172                    | <b>0.22</b>               | 0.12              |
| 26865                        | 831.5 | 36RB-Low | Right | Cheek         | /          | 23.01                      | 24                       | 0.284                   | <b>0.36</b>             | 0.223                    | <b>0.28</b>               | -0.05             |
| 26865                        | 831.5 | 36RB-Low | Right | Tilt          | /          | 23.01                      | 24                       | 0.215                   | <b>0.27</b>             | 0.173                    | <b>0.22</b>               | 0.07              |

Note1: The LTE mode is QPSK\_15MHz.

**Table 14.1-20: SAR Values (LTE Band26 – Body)**

| Ambient Temperature: 22.9 °C |       |                 |            |                        | Liquid Temperature: 22.5°C |                         |                         |                          |                           |                  |
|------------------------------|-------|-----------------|------------|------------------------|----------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Frequency                    |       | Mode            | Figure No. | Conduct ed Power (dBm) | Max. tune-up Power (dBm)   | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz   |                 |            |                        |                            |                         |                         |                          |                           |                  |
| 26865                        | 831.5 | 1RB-Low Front   | /          | 23.88                  | 25                         | 0.333                   | <b>0.43</b>             | 0.256                    | <b>0.33</b>               | 0.12             |
| 26865                        | 831.5 | 1RB-Low Rear    | Fig.20     | 23.88                  | 25                         | 0.477                   | <b>0.62</b>             | 0.368                    | <b>0.48</b>               | 0.02             |
| 26865                        | 831.5 | 1RB-Low Left    | /          | 23.88                  | 25                         | 0.232                   | <b>0.30</b>             | 0.166                    | <b>0.21</b>               | 0.1              |
| 26865                        | 831.5 | 1RB-Low Right   | /          | 23.88                  | 25                         | 0.275                   | <b>0.36</b>             | 0.195                    | <b>0.25</b>               | 0.11             |
| 26865                        | 831.5 | 1RB-Low Bottom  | /          | 23.88                  | 25                         | 0.136                   | <b>0.18</b>             | 0.083                    | <b>0.11</b>               | -0.1             |
| 26865                        | 831.5 | 36RB-Low Front  | /          | 23.01                  | 24                         | 0.283                   | <b>0.36</b>             | 0.219                    | <b>0.28</b>               | 0.12             |
| 26865                        | 831.5 | 36RB-Low Rear   | /          | 23.01                  | 24                         | 0.409                   | <b>0.51</b>             | 0.314                    | <b>0.39</b>               | 0.04             |
| 26865                        | 831.5 | 36RB-Low Left   | /          | 23.01                  | 24                         | 0.211                   | <b>0.27</b>             | 0.15                     | <b>0.19</b>               | 0.09             |
| 26865                        | 831.5 | 36RB-Low Right  | /          | 23.01                  | 24                         | 0.242                   | <b>0.30</b>             | 0.171                    | <b>0.21</b>               | 0.12             |
| 26865                        | 831.5 | 36RB-Low Bottom | /          | 23.01                  | 24                         | 0.118                   | <b>0.15</b>             | 0.073                    | <b>0.09</b>               | -0.01            |

Note1: The distance between the EUT and the phantom bottom is 10mm

Note2: The LTE mode is QPSK\_10MHz.

**Table 14.1-21: SAR Values (LTE Band41 PC3 - Head)**

| Ambient Temperature: 22.9 °C |      |          |       |               |            | Liquid Temperature: 22.5°C |                          |                         |                         |                          |                           |                  |
|------------------------------|------|----------|-------|---------------|------------|----------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Frequency                    |      | Mode     | Side  | Test Position | Figure No. | Conduct ed Power (dBm)     | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |          |       |               |            |                            |                          |                         |                         |                          |                           |                  |
| 41490                        | 2680 | 1RB-Mid  | Left  | Cheek         | Fig.21     | 23.44                      | 24                       | 0.102                   | 0.12                    | 0.053                    | 0.06                      | -0.13            |
| 41490                        | 2680 | 1RB-Mid  | Left  | Tilt          | /          | 23.44                      | 24                       | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |
| 41490                        | 2680 | 1RB-Mid  | Right | Cheek         |            | 23.44                      | 24                       | 0.064                   | 0.07                    | 0.037                    | 0.04                      | -0.11            |
| 41490                        | 2680 | 1RB-Mid  | Right | Tilt          | /          | 23.44                      | 24                       | 0.05                    | 0.06                    | 0.026                    | 0.03                      | 0.05             |
| 41490                        | 2680 | 50RB-Low | Left  | Cheek         | /          | 22.43                      | 23                       | 0.076                   | 0.09                    | 0.04                     | 0.05                      | -0.09            |
| 41490                        | 2680 | 50RB-Low | Left  | Tilt          | /          | 22.43                      | 23                       | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |
| 41490                        | 2680 | 50RB-Low | Right | Cheek         | /          | 22.43                      | 23                       | 0.055                   | 0.06                    | 0.031                    | 0.04                      | 0.12             |
| 41490                        | 2680 | 50RB-Low | Right | Tilt          | /          | 22.43                      | 23                       | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-22: SAR Values (LTE Band41 PC3 – Body)**

| Ambient Temperature: 22.9 °C |      |                 |            |                        | Liquid Temperature: 22.5°C |                         |                         |                          |                           |                  |
|------------------------------|------|-----------------|------------|------------------------|----------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Frequency                    |      | Mode            | Figure No. | Conduct ed Power (dBm) | Max. tune-up Power (dBm)   | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |                 |            |                        |                            |                         |                         |                          |                           |                  |
| 41490                        | 2680 | 1RB-Mid Front   | /          | 22.12                  | 23                         | 0.167                   | <b>0.20</b>             | 0.086                    | <b>0.11</b>               | -0.09            |
| 41490                        | 2680 | 1RB-Mid Rear    | /          | 22.12                  | 23                         | 0.479                   | <b>0.59</b>             | 0.227                    | <b>0.28</b>               | 0.11             |
| 41490                        | 2680 | 1RB-Mid Left    | /          | 22.12                  | 23                         | 0.068                   | <b>0.08</b>             | 0.036                    | <b>0.04</b>               | -0.09            |
| 41490                        | 2680 | 1RB-Mid Right   | /          | 22.12                  | 23                         | 0.065                   | <b>0.08</b>             | 0.028                    | <b>0.03</b>               | -0.18            |
| 41490                        | 2680 | 1RB-Mid Bottom  | Fig.22     | 22.12                  | 23                         | 0.485                   | <b>0.59</b>             | 0.227                    | <b>0.28</b>               | 0.07             |
| 41490                        | 2680 | 50RB-Low Front  | /          | 22.23                  | 23                         | 0.126                   | <b>0.15</b>             | 0.064                    | <b>0.08</b>               | 0.07             |
| 41490                        | 2680 | 50RB-Low Rear   | /          | 22.23                  | 23                         | 0.359                   | <b>0.43</b>             | 0.172                    | <b>0.21</b>               | 0.02             |
| 41490                        | 2680 | 50RB-Low Left   | /          | 22.23                  | 23                         | 0.053                   | <b>0.06</b>             | 0.029                    | <b>0.03</b>               | 0.09             |
| 41490                        | 2680 | 50RB-Low Right  | /          | 22.23                  | 23                         | 0.034                   | <b>0.04</b>             | 0.015                    | <b>0.02</b>               | -0.06            |
| 41490                        | 2680 | 50RB-Low Bottom | /          | 22.23                  | 23                         | 0.372                   | <b>0.44</b>             | 0.174                    | <b>0.21</b>               | 0.09             |

Note1: The distance between the EUT and the phantom bottom is 10mm

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-23: SAR Values (LTE Band41 PC2 - Head)**

| Ambient Temperature: 22.9 °C |      |          |       |               |            | Liquid Temperature: 22.5°C |                          |                         |                         |                          |                           |                   |
|------------------------------|------|----------|-------|---------------|------------|----------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|-------------------|
| Frequency                    |      | Mode     | Side  | Test Position | Figure No. | Conduct ed Power (dBm)     | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Powe r Drift (dB) |
| Ch.                          | MHz  |          |       |               |            |                            |                          |                         |                         |                          |                           |                   |
| 41490                        | 2680 | 1RB-Mid  | Left  | Cheek         | Fig.23     | 26.14                      | 27                       | 0.139                   | 0.17                    | 0.072                    | 0.09                      | 0.08              |
| 41490                        | 2680 | 1RB-Mid  | Left  | Tilt          | /          | 26.14                      | 27                       | 0.029                   | 0.04                    | 0.017                    | 0.02                      | 0.11              |
| 41490                        | 2680 | 1RB-Mid  | Right | Cheek         | /          | 26.14                      | 27                       | 0.061                   | 0.07                    | 0.037                    | 0.05                      | -0.09             |
| 41490                        | 2680 | 1RB-Mid  | Right | Tilt          | /          | 26.14                      | 27                       | 0.049                   | 0.06                    | 0.027                    | 0.03                      | -0.11             |
| 41490                        | 2680 | 50RB-Low | Left  | Cheek         | /          | 25.2                       | 26                       | 0.104                   | 0.13                    | 0.054                    | 0.06                      | 0.07              |
| 41490                        | 2680 | 50RB-Low | Left  | Tilt          | /          | 25.2                       | 26                       | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                 |
| 41490                        | 2680 | 50RB-Low | Right | Cheek         | /          | 25.2                       | 26                       | 0.047                   | 0.06                    | 0.028                    | 0.03                      | -0.07             |
| 41490                        | 2680 | 50RB-Low | Right | Tilt          | /          | 25.2                       | 26                       | 0.037                   | 0.04                    | 0.02                     | 0.02                      | -0.12             |

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-24: SAR Values (LTE Band41 PC2 – Body)**

| Ambient Temperature: 22.9 °C |        |                 |            |                        | Liquid Temperature: 22.5°C |                         |                         |                          |                           |                  |
|------------------------------|--------|-----------------|------------|------------------------|----------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Frequency                    |        | Mode            | Figure No. | Conduct ed Power (dBm) | Max. tune-up Power (dBm)   | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |                 |            |                        |                            |                         |                         |                          |                           |                  |
| 41490                        | 2680   | 1RB-Mid Front   | /          | 25.19                  | 26                         | 0.198                   | <b>0.24</b>             | 0.105                    | <b>0.13</b>               | -0.11            |
| 41490                        | 2680   | 1RB-Mid Rear    | /          | 25.19                  | 26                         | 0.59                    | <b>0.71</b>             | 0.279                    | <b>0.34</b>               | 0.18             |
| 41055                        | 2636.5 | 1RB-Mid Rear    | /          | 25.15                  | 26                         | 0.573                   | <b>0.70</b>             | 0.283                    | <b>0.34</b>               | -0.11            |
| 40620                        | 2593   | 1RB-Mid Rear    | /          | 25.03                  | 26                         | 0.675                   | <b>0.84</b>             | 0.335                    | <b>0.42</b>               | 0.15             |
| 40185                        | 2549.5 | 1RB-Mid Rear    | /          | 25.11                  | 26                         | 0.808                   | <b>0.99</b>             | 0.403                    | <b>0.49</b>               | 0.14             |
| 39750                        | 2506   | 1RB-Mid Rear    | Fig.24     | 24.89                  | 26                         | 0.871                   | <b>1.12</b>             | 0.431                    | <b>0.56</b>               | -0.04            |
| 39750                        | 2506   | 100RB Rear      | /          | 25.18                  | 26                         | 0.857                   | <b>1.04</b>             | 0.423                    | <b>0.51</b>               | 0.14             |
| 41490                        | 2680   | 1RB-Mid Left    | /          | 25.19                  | 26                         | 0.072                   | <b>0.09</b>             | 0.042                    | <b>0.05</b>               | -0.07            |
| 41490                        | 2680   | 1RB-Mid Right   | /          | 25.19                  | 26                         | 0.052                   | <b>0.06</b>             | 0.03                     | <b>0.04</b>               | -0.14            |
| 41490                        | 2680   | 1RB-Mid Bottom  | /          | 25.19                  | 26                         | 0.54                    | <b>0.65</b>             | 0.271                    | <b>0.33</b>               | 0.09             |
| 41490                        | 2680   | 50RB-Low Front  | /          | 25.22                  | 26                         | 0.149                   | <b>0.18</b>             | 0.078                    | <b>0.09</b>               | -0.12            |
| 41490                        | 2680   | 50RB-Low Rear   | /          | 25.22                  | 26                         | 0.425                   | <b>0.51</b>             | 0.212                    | <b>0.25</b>               | 0.14             |
| 41490                        | 2680   | 50RB-Low Left   | /          | 25.22                  | 26                         | 0.058                   | <b>0.07</b>             | 0.033                    | <b>0.04</b>               | -0.09            |
| 41490                        | 2680   | 50RB-Low Right  | /          | 25.22                  | 26                         | 0.036                   | <b>0.04</b>             | 0.022                    | <b>0.03</b>               | 0.17             |
| 41490                        | 2680   | 50RB-Low Bottom | /          | 25.22                  | 26                         | 0.413                   | <b>0.49</b>             | 0.208                    | <b>0.25</b>               | -0.11            |

Note1: The distance between the EUT and the phantom bottom is 10mm

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-25: SAR Values (LTE Band66 - Head)**

| Ambient Temperature: 22.9 °C |      |           |       |               |            | Liquid Temperature: 22.5°C |                          |                         |                         |                          |                           |                  |
|------------------------------|------|-----------|-------|---------------|------------|----------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Frequency                    |      | Mode      | Side  | Test Position | Figure No. | Conducted Power (dBm)      | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |           |       |               |            |                            |                          |                         |                         |                          |                           |                  |
| 132072                       | 1720 | 1RB-Mid   | Left  | Cheek         | /          | 23.67                      | 24.5                     | 0.107                   | <b>0.13</b>             | 0.071                    | <b>0.09</b>               | -0.12            |
| 132072                       | 1720 | 1RB-Mid   | Left  | Tilt          | /          | 23.67                      | 24.5                     | 0.068                   | <b>0.08</b>             | 0.044                    | <b>0.05</b>               | -0.02            |
| 132072                       | 1720 | 1RB-Mid   | Right | Cheek         | Fig.25     | 23.67                      | 24.5                     | 0.157                   | <b>0.19</b>             | 0.101                    | <b>0.12</b>               | 0.09             |
| 132072                       | 1720 | 1RB-Mid   | Right | Tilt          | /          | 23.67                      | 24.5                     | 0.058                   | <b>0.07</b>             | 0.037                    | <b>0.04</b>               | 0.01             |
| 132072                       | 1720 | 50RB-High | Left  | Cheek         | /          | 22.76                      | 23.5                     | 0.08                    | <b>0.09</b>             | 0.054                    | <b>0.06</b>               | -0.09            |
| 132072                       | 1720 | 50RB-High | Left  | Tilt          | /          | 22.76                      | 23.5                     | 0.042                   | <b>0.05</b>             | 0.028                    | <b>0.03</b>               | 0.04             |
| 132072                       | 1720 | 50RB-High | Right | Cheek         | /          | 22.76                      | 23.5                     | 0.127                   | <b>0.15</b>             | 0.081                    | <b>0.10</b>               | 0.16             |
| 132072                       | 1720 | 50RB-High | Right | Tilt          | /          | 22.76                      | 23.5                     | 0.045                   | <b>0.05</b>             | 0.028                    | <b>0.03</b>               | -0.07            |

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-26: SAR Values (LTE Band66 – Body worn)**

| Ambient Temperature: 22.9 °C |      |                 |            |                        | Liquid Temperature: 22.5°C |                         |                         |                          |                           |                  |
|------------------------------|------|-----------------|------------|------------------------|----------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Frequency                    |      | Mode            | Figure No. | Conduct ed Power (dBm) | Max. tune-up Power (dBm)   | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |                 |            |                        |                            |                         |                         |                          |                           |                  |
| 132072                       | 1720 | 1RB-Mid Front   | /          | 20.43                  | 21                         | 0.256                   | <b>0.29</b>             | 0.153                    | <b>0.17</b>               | -0.1             |
| 132072                       | 1720 | 1RB-Mid Rear    | /          | 20.43                  | 21                         | 0.612                   | <b>0.70</b>             | 0.342                    | <b>0.39</b>               | 0.14             |
| 132322                       | 1745 | 1RB-Mid Rear    | Fig.26     | 20.31                  | 21                         | 0.626                   | <b>0.73</b>             | 0.351                    | <b>0.41</b>               | -0.1             |
| 132572                       | 1770 | 1RB-Mid Rear    | /          | 20.3                   | 21                         | 0.57                    | <b>0.67</b>             | 0.319                    | <b>0.37</b>               | 0.04             |
| 132072                       | 1720 | 50RB-High Front | /          | 20.44                  | 21                         | 0.259                   | <b>0.29</b>             | 0.155                    | <b>0.18</b>               | 0.1              |
| 132072                       | 1720 | 50RB-High Rear  | /          | 20.44                  | 21                         | 0.609                   | <b>0.69</b>             | 0.34                     | <b>0.39</b>               | 0.17             |

Note1: The distance between the EUT and the phantom bottom is 15mm

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-27: SAR Values (LTE Band66 – Hotspot)**

| Frequency |      | Ambient Temperature: 22.9 °C |            | Liquid Temperature: 22.5 °C |                          |                         |                         |                          |                           |                  |
|-----------|------|------------------------------|------------|-----------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Ch.       | MHz  | Mode                         | Figure No. | Conduct ed Power (dBm)      | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| 132072    | 1720 | 1RB-Mid Front                | /          | 18.72                       | 19.5                     | 0.387                   | <b>0.46</b>             | 0.211                    | <b>0.25</b>               | 0.07             |
| 132072    | 1720 | 1RB-Mid Rear                 | /          | 18.72                       | 19.5                     | 0.933                   | <b>1.12</b>             | 0.49                     | <b>0.59</b>               | 0.15             |
| 132322    | 1745 | 1RB-Mid Rear                 | Fig.27     | 18.68                       | 19.5                     | 0.985                   | <b>1.19</b>             | 0.503                    | <b>0.61</b>               | -0.1             |
| 132572    | 1770 | 1RB-Mid Rear                 | /          | 18.59                       | 19.5                     | 0.89                    | <b>1.10</b>             | 0.459                    | <b>0.57</b>               | -0.09            |
| 132572    | 1770 | 100RB Rear                   | /          | 18.58                       | 19.5                     | 0.867                   | <b>1.07</b>             | 0.446                    | <b>0.55</b>               | 0.06             |
| 132072    | 1720 | 1RB-Mid Left                 | /          | 18.72                       | 19.5                     | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |
| 132072    | 1720 | 1RB-Mid Right                | /          | 18.72                       | 19.5                     | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |
| 132072    | 1720 | 1RB-Mid Bottom               | /          | 18.72                       | 19.5                     | 0.89                    | <b>1.07</b>             | 0.459                    | <b>0.55</b>               | -0.14            |
| 132322    | 1745 | 1RB-Mid Bottom               | /          | 18.68                       | 19.5                     | 0.91                    | <b>1.10</b>             | 0.471                    | <b>0.57</b>               | 0.01             |
| 132572    | 1770 | 1RB-Mid Bottom               | /          | 18.59                       | 19.5                     | 0.828                   | <b>1.02</b>             | 0.429                    | <b>0.53</b>               | 0.07             |
| 132572    | 1770 | 100RB Bottom                 | /          | 18.58                       | 19.5                     | 0.804                   | <b>0.99</b>             | 0.414                    | <b>0.51</b>               | -0.13            |
| 132072    | 1720 | 50RB-High Front              | /          | 18.72                       | 19.5                     | 0.369                   | <b>0.44</b>             | 0.201                    | <b>0.24</b>               | 0.05             |
| 132072    | 1720 | 50RB-High Rear               | /          | 18.72                       | 19.5                     | 0.899                   | <b>1.08</b>             | 0.469                    | <b>0.56</b>               | -0.16            |
| 132072    | 1720 | 50RB-High Left               | /          | 18.72                       | 19.5                     | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |
| 132072    | 1720 | 50RB-High Right              | /          | 18.72                       | 19.5                     | <0.01                   | <0.01                   | <0.01                    | <0.01                     | /                |
| 132072    | 1720 | 50RB-High Bottom             | /          | 18.72                       | 19.5                     | 0.842                   | <b>1.01</b>             | 0.432                    | <b>0.52</b>               | -0.18            |

Note1: The distance between the EUT and the phantom bottom is 10mm

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-28: SAR Values (LTE Band71 - Head)**

| Ambient Temperature: 22.9 °C |     |          |       |               |            | Liquid Temperature: 22.5°C |                          |                         |                         |                            |                            |                  |
|------------------------------|-----|----------|-------|---------------|------------|----------------------------|--------------------------|-------------------------|-------------------------|----------------------------|----------------------------|------------------|
| Frequency                    |     | Mode     | Side  | Test Position | Figure No. | Conduct ed Power (dBm)     | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measure d SAR(10g ) (W/kg) | Reporte d SAR(10 g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz |          |       |               |            |                            |                          |                         |                         |                            |                            |                  |
| 133322                       | 683 | 1RB-Mid  | Left  | Cheek         | /          | 23.96                      | 25                       | 0.186                   | <b>0.24</b>             | 0.149                      | <b>0.19</b>                | 0.06             |
| 133322                       | 683 | 1RB-Mid  | Left  | Tilt          | /          | 23.96                      | 25                       | 0.133                   | <b>0.17</b>             | 0.108                      | <b>0.14</b>                | -0.17            |
| 133322                       | 683 | 1RB-Mid  | Right | Cheek         | Fig.28     | 23.96                      | 25                       | 0.201                   | <b>0.26</b>             | 0.161                      | <b>0.20</b>                | 0.08             |
| 133322                       | 683 | 1RB-Mid  | Right | Tilt          | /          | 23.96                      | 25                       | 0.133                   | <b>0.17</b>             | 0.108                      | <b>0.14</b>                | -0.09            |
| 133322                       | 683 | 50RB-Low | Left  | Cheek         | /          | 23.13                      | 24                       | 0.159                   | <b>0.19</b>             | 0.127                      | <b>0.16</b>                | 0.09             |
| 133322                       | 683 | 50RB-Low | Left  | Tilt          | /          | 23.13                      | 24                       | 0.11                    | <b>0.13</b>             | 0.089                      | <b>0.11</b>                | 0.11             |
| 133322                       | 683 | 50RB-Low | Right | Cheek         | /          | 23.13                      | 24                       | 0.175                   | <b>0.21</b>             | 0.14                       | <b>0.17</b>                | 0.18             |
| 133322                       | 683 | 50RB-Low | Right | Tilt          | /          | 23.13                      | 24                       | 0.115                   | <b>0.14</b>             | 0.094                      | <b>0.11</b>                | -0.07            |

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-29: SAR Values (LTE Band71 – Body)**

| Frequency |     | Ambient Temperature: 22.9 °C |            | Liquid Temperature: 22.5°C |                           |                         |                         |                          |                           |                  |
|-----------|-----|------------------------------|------------|----------------------------|---------------------------|-------------------------|-------------------------|--------------------------|---------------------------|------------------|
| Ch.       | MHz | Mode                         | Figure No. | Conduct ed Power (dBm)     | Max. tune- up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g ) (W/kg) | Power Drift (dB) |
| 133322    | 683 | 1RB-Middle Front             | /          | 23.96                      | 25                        | 0.236                   | <b>0.30</b>             | 0.184                    | <b>0.23</b>               | 0.17             |
| 133322    | 683 | 1RB-Middle Rear              | Fig.29     | 23.96                      | 25                        | 0.374                   | <b>0.48</b>             | 0.287                    | <b>0.36</b>               | -0.04            |
| 133322    | 683 | 1RB-Middle Left              | /          | 23.96                      | 25                        | 0.277                   | <b>0.35</b>             | 0.198                    | <b>0.25</b>               | -0.09            |
| 133322    | 683 | 1RB-Middle Right             | /          | 23.96                      | 25                        | 0.228                   | <b>0.29</b>             | 0.165                    | <b>0.21</b>               | 0.09             |
| 133322    | 683 | 1RB-Mid Bottom               | /          | 23.96                      | 25                        | 0.083                   | <b>0.11</b>             | 0.048                    | <b>0.06</b>               | -0.1             |
| 133322    | 683 | 50RB-Low Front               | /          | 23.13                      | 24                        | 0.2                     | <b>0.24</b>             | 0.154                    | <b>0.19</b>               | 0.07             |
| 133322    | 683 | 50RB-Low Rear                | /          | 23.13                      | 24                        | 0.313                   | <b>0.38</b>             | 0.241                    | <b>0.29</b>               | 0.08             |
| 133322    | 683 | 50RB-Low Left                | /          | 23.13                      | 24                        | 0.215                   | <b>0.26</b>             | 0.154                    | <b>0.19</b>               | -0.07            |
| 133322    | 683 | 50RB-Low Right               | /          | 23.13                      | 24                        | 0.182                   | <b>0.22</b>             | 0.13                     | <b>0.16</b>               | -0.14            |
| 133322    | 683 | 50RB-Low Bottom              | /          | 23.13                      | 24                        | 0.067                   | <b>0.08</b>             | 0.039                    | <b>0.05</b>               | 0.01             |

Note1: The distance between the EUT and the phantom bottom is 10mm

Note2: The LTE mode is QPSK\_20MHz.

## 14.2 WLAN Evaluation for 2.4G

The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.

When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.

SAR Test reduction was applied from KDB 248227 guidance, when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.

### Head Evaluation

**Table 14.2-1: SAR Values (WLAN - Head)– 802.11b**

| Ambient Temperature: 22.9 °C |      |       |               |        | Liquid Temperature: 22.5°C |                          |                         |                         |                          |                         |                  |
|------------------------------|------|-------|---------------|--------|----------------------------|--------------------------|-------------------------|-------------------------|--------------------------|-------------------------|------------------|
| Frequency                    |      | Side  | Test Position | Note   | Conducted Power (dBm)      | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)(W /kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g)(W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |       |               |        |                            |                          |                         |                         |                          |                         |                  |
| 11                           | 2462 | Left  | Cheek         | Fig.30 | 17.96                      | 18.5                     | 0.985                   | <b>1.12</b>             | 0.514                    | <b>0.58</b>             | 0.04             |
| 6                            | 2437 | Left  | Cheek         | /      | 18.08                      | 18.5                     | 0.8                     | <b>0.88</b>             | 0.418                    | <b>0.46</b>             | -0.12            |
| 1                            | 2412 | Left  | Cheek         | /      | 17.81                      | 18.5                     | 0.852                   | <b>1.00</b>             | 0.433                    | <b>0.51</b>             | 0.02             |
| 6                            | 2437 | Left  | Tilt          | /      | 18.08                      | 18.5                     | 0.568                   | <b>0.63</b>             | 0.295                    | <b>0.32</b>             | 0.07             |
| 6                            | 2437 | Right | Cheek         | /      | 18.08                      | 18.5                     | 0.411                   | <b>0.45</b>             | 0.243                    | <b>0.27</b>             | -0.06            |
| 6                            | 2437 | Right | Tilt          | /      | 18.08                      | 18.5                     | 0.256                   | <b>0.28</b>             | 0.149                    | <b>0.16</b>             | -0.11            |

**Table 14.2-2: SAR Values (WLAN - Head) – 802.11b (Scaled Reported SAR)**

| Ambient Temperature: 22.9 °C |     |      |               |                    | Liquid Temperature: 22.5°C |                         |                                |
|------------------------------|-----|------|---------------|--------------------|----------------------------|-------------------------|--------------------------------|
| Frequency                    |     | Side | Test Position | Actual duty factor | maximum duty factor        | Reported SAR (1g)(W/kg) | Scaled reported SAR (1g)(W/kg) |
| MHz                          | Ch. |      |               |                    |                            |                         |                                |
| 2462                         | 11  | Left | Cheek         | 100%               | 100%                       | <b>1.12</b>             | <b>1.12</b>                    |

SAR is not required for OFDM because the 802.11g adjusted SAR  $\leq$  1.2 W/kg.

## Body Evaluation

**Table 14.2-3: SAR Values (WLAN - Body)– 802.11b**

| Ambient Temperature: 22.9 °C |      |               |                 | Liquid Temperature: 22.5 °C |                          |                         |                         |                          |                          |                  |
|------------------------------|------|---------------|-----------------|-----------------------------|--------------------------|-------------------------|-------------------------|--------------------------|--------------------------|------------------|
| Frequency                    |      | Test Position | Note/<br>Fig.No | Conducted Power (dBm)       | Max. tune-up Power (dBm) | Measured SAR(1g) (W/kg) | Reported SAR(1g)(W /kg) | Measured SAR(10g) (W/kg) | Reported SAR(10g)( W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |               |                 |                             |                          |                         |                         |                          |                          |                  |
| 6                            | 2437 | Front         | Note1           | 19.54                       | 20.5                     | 0.164                   | <b>0.20</b>             | 0.096                    | <b>0.12</b>              | 0.18             |
| 6                            | 2437 | Rear          | Note1           | 19.54                       | 20.5                     | 0.199                   | <b>0.25</b>             | 0.111                    | <b>0.14</b>              | 0.14             |
| 6                            | 2437 | Front         | Note2           | 19.54                       | 20.5                     | 0.404                   | <b>0.50</b>             | 0.224                    | <b>0.28</b>              | -0.13            |
| 6                            | 2437 | Rear          | Note2/<br>Fig31 | 19.54                       | 20.5                     | 0.492                   | <b>0.61</b>             | 0.264                    | <b>0.33</b>              | 0.05             |
| 6                            | 2437 | Right         | Note2           | 19.54                       | 20.5                     | 0.477                   | <b>0.60</b>             | 0.221                    | <b>0.28</b>              | 0.09             |
| 6                            | 2437 | Top           | Note2           | 19.54                       | 20.5                     | 0.122                   | <b>0.15</b>             | 0.063                    | <b>0.08</b>              | -0.18            |

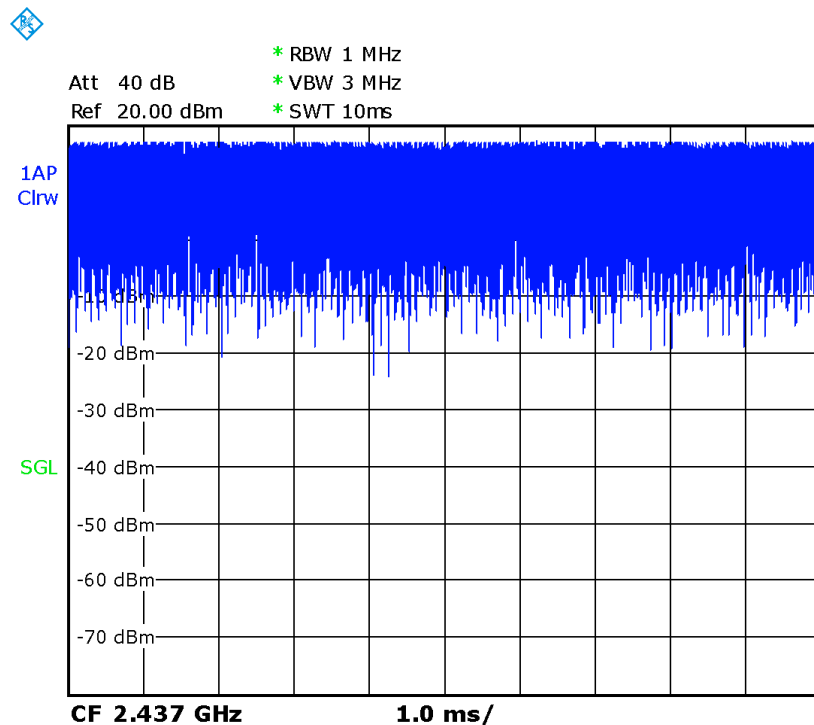
Note1: The distance between the EUT and the phantom bottom is 15mm.

Note2: The distance between the EUT and the phantom bottom is 10mm.

**Table 14.2-4: SAR Values (WLAN - Body) – 802.11b (Scaled Reported SAR)**

| Ambient Temperature: 22.9 °C |      |               |                    | Liquid Temperature: 22.5 °C |                         |                                |
|------------------------------|------|---------------|--------------------|-----------------------------|-------------------------|--------------------------------|
| Frequency                    |      | Test Position | Actual duty factor | maximum duty factor         | Reported SAR (1g)(W/kg) | Scaled reported SAR (1g)(W/kg) |
| Ch.                          | MHz  |               |                    |                             |                         |                                |
| 6                            | 2437 | Rear 10mm     | 100%               | 100%                        | <b>0.61</b>             | <b>0.61</b>                    |

SAR is not required for OFDM because the 802.11g adjusted SAR  $\leq 1.2$  W/kg.



**Picture 14.2-1 Duty factor plot**

### 14.3 WLAN Evaluation For BT

**Table 14.3-1: SAR Values (BT - Head)**

| Ambient Temperature: 22.9°C |      |       |               |        | Liquid Temperature: 22.5°C |                          |                          |                          |                         |                         |                  |
|-----------------------------|------|-------|---------------|--------|----------------------------|--------------------------|--------------------------|--------------------------|-------------------------|-------------------------|------------------|
| Frequency                   |      | Side  | Test Position | Fig.No | Conducted Power (dBm)      | Max. tune-up Power (dBm) | Measured SAR(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                         | MHz  |       |               |        |                            |                          |                          |                          |                         |                         |                  |
| 78                          | 2480 | Left  | Cheek         | Fig.32 | 10.34                      | 11                       | 0.058                    | <b>0.07</b>              | 0.027                   | <b>0.03</b>             | -0.06            |
| 78                          | 2480 | Left  | Tilt          | /      | 10.34                      | 11                       | 0.042                    | <b>0.05</b>              | 0.021                   | <b>0.02</b>             | -0.09            |
| 78                          | 2480 | Right | Cheek         | /      | 10.34                      | 11                       | <0.01                    | <0.01                    | <0.01                   | <0.01                   | /                |
| 78                          | 2480 | Right | Tilt          | /      | 10.34                      | 11                       | <0.01                    | <0.01                    | <0.01                   | <0.01                   | /                |

**Table 14.3-2: SAR Values (BT - Body)**

| Ambient Temperature: 22.9°C |      |               |        |                       | Liquid Temperature: 22.5°C |                          |                          |                         |                         |                  |
|-----------------------------|------|---------------|--------|-----------------------|----------------------------|--------------------------|--------------------------|-------------------------|-------------------------|------------------|
| Frequency                   |      | Test Position | Fig.No | Conducted Power (dBm) | Max. tune-up Power (dBm)   | Measured SAR(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g)( W/kg) | Power Drift (dB) |
| Ch.                         | MHz  |               |        |                       |                            |                          |                          |                         |                         |                  |
| 78                          | 2480 | Front         | /      | 10.34                 | 11                         | <0.01                    | <0.01                    | <0.01                   | <0.01                   | /                |
| 78                          | 2480 | Rear          | Fig.33 | 10.34                 | 11                         | 0.017                    | 0.02                     | 0.006                   | 0.01                    | 0.04             |
| 78                          | 2480 | Left          | /      | 10.34                 | 11                         | <0.01                    | <0.01                    | <0.01                   | <0.01                   | /                |
| 78                          | 2480 | Top           | /      | 10.34                 | 11                         | <0.01                    | <0.01                    | <0.01                   | <0.01                   | /                |

Note1: The distance between the EUT and the phantom bottom is 10mm

#### 14.4 SAR results for 10-g extremity SAR

According to the KDB648474 D04, the UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at  $\leq 25$  mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB Publication 865664 D01 to address interactive hand use exposure conditions. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR  $> 1.2$  W/kg. If power reduction applied for hotspot mode, the SAR values should be scaled to normal power, and then compare it with 1.2W/kg.

**Table 14.5-1: SAR Values for phablet**

| Band       | Frequency |        | Test Mode       | Conducted Power (dBm) | Max. tune-up Power (dBm) | Measured SAR(10g) (W/kg) | Reported SAR(10g)(W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g)(W/kg) | Power Drift (dB) |
|------------|-----------|--------|-----------------|-----------------------|--------------------------|--------------------------|-------------------------|-------------------------|------------------------|------------------|
|            | Ch.       | MHz    |                 |                       |                          |                          |                         |                         |                        |                  |
| GSM1900    | 810       | 1909.8 | Rear GPRS(2)    | 24.15                 | 25.5                     | 3.18                     | <b>4.34</b>             | 1.29                    | <b>1.76</b>            | 0.15             |
| GSM1900    | 661       | 1880   | Rear GPRS(2)    | 24.01                 | 25.5                     | 3.63                     | <b>5.12</b>             | 1.58                    | <b>2.23</b>            | 0.16             |
| GSM1900    | 512       | 1850.2 | Rear GPRS(2)    | 23.98                 | 25.5                     | 3.25                     | <b>4.61</b>             | 1.42                    | <b>2.02</b>            | 0.06             |
| GSM1900    | 810       | 1909.8 | Bottom GPRS(2)  | 24.15                 | 25.5                     | 4.04                     | <b>5.51</b>             | 1.65                    | <b>2.25</b>            | -0.09            |
| GSM1900    | 661       | 1880   | Bottom GPRS(2)  | 24.01                 | 25.5                     | 3.71                     | <b>5.23</b>             | 1.52                    | <b>2.14</b>            | -0.06            |
| GSM1900    | 512       | 1850.2 | Bottom GPRS(2)  | 23.98                 | 25.5                     | 2.73                     | <b>3.87</b>             | 1.13                    | <b>1.60</b>            | 0.15             |
| WCDMA1900  | 9538      | 1907.6 | RMC Rear        | 20.02                 | 21                       | 5.16                     | <b>6.47</b>             | 2.13                    | <b>2.67</b>            | -0.14            |
| WCDMA1900  | 9400      | 1880   | RMC Rear        | 20.01                 | 21                       | 5.52                     | <b>6.93</b>             | 2.28                    | <b>2.86</b>            | 0.03             |
| WCDMA1900  | 9262      | 1852.4 | RMC Rear        | 20.12                 | 21                       | 6.03                     | <b>7.38</b>             | 2.51                    | <b>3.07</b>            | 0.07             |
| WCDMA1900  | 9538      | 1907.6 | RMC Bottom      | 20.02                 | 21                       | 5.14                     | <b>6.44</b>             | 2.08                    | <b>2.61</b>            | -0.15            |
| WCDMA1900  | 9400      | 1880   | RMC Bottom      | 20.01                 | 21                       | 5.9                      | <b>7.41</b>             | 2.35                    | <b>2.95</b>            | -0.02            |
| WCDMA1900  | 9262      | 1852.4 | RMC Bottom      | 20.12                 | 21                       | 6.19                     | <b>7.58</b>             | 2.48                    | <b>3.04</b>            | -0.07            |
| WCDMA1700  | 1513      | 1752.6 | RMC Rear        | 20.07                 | 21.5                     | 4.08                     | <b>5.67</b>             | 1.71                    | <b>2.38</b>            | -0.05            |
| WCDMA1700  | 1412      | 1732.5 | RMC Rear        | 20.08                 | 21.5                     | 4.35                     | <b>6.03</b>             | 1.85                    | <b>2.57</b>            | -0.08            |
| WCDMA1700  | 1312      | 1712.4 | RMC Rear        | 20.18                 | 21.5                     | 4.36                     | <b>5.91</b>             | 1.85                    | <b>2.51</b>            | -0.08            |
| WCDMA1700  | 1513      | 1752.6 | RMC Bottom      | 20.07                 | 21.5                     | 4.73                     | <b>6.57</b>             | 1.92                    | <b>2.67</b>            | -0.04            |
| WCDMA1700  | 1412      | 1732.5 | RMC Bottom      | 20.08                 | 21.5                     | 4.75                     | <b>6.59</b>             | 1.94                    | <b>2.69</b>            | -0.12            |
| WCDMA1700  | 1312      | 1712.4 | RMC Bottom      | 20.18                 | 21.5                     | 4.66                     | <b>6.32</b>             | 1.9                     | <b>2.57</b>            | 0.07             |
| LTE Band25 | 26590     | 1905   | 1RB-Mid Rear    | 20.75                 | 21                       | 5.14                     | <b>5.44</b>             | 2.22                    | <b>2.35</b>            | -0.09            |
| LTE Band25 | 26365     | 1882.5 | 1RB-Mid Rear    | 20.73                 | 21                       | 5.32                     | <b>5.66</b>             | 2.33                    | <b>2.48</b>            | 0.15             |
| LTE Band25 | 26140     | 1860   | 1RB-Mid Rear    | 20.71                 | 21                       | 5.67                     | <b>6.06</b>             | 2.51                    | <b>2.68</b>            | 0.06             |
| LTE Band25 | 26590     | 1905   | 1RB-Mid Bottom  | 20.75                 | 21                       | 5.83                     | <b>6.18</b>             | 2.35                    | <b>2.49</b>            | 0.16             |
| LTE Band25 | 26365     | 1882.5 | 1RB-Mid Bottom  | 20.73                 | 21                       | 6.28                     | <b>6.68</b>             | 2.51                    | <b>2.67</b>            | -0.11            |
| LTE Band25 | 26140     | 1860   | 1RB-Mid Bottom  | 20.71                 | 21                       | 6.63                     | <b>7.09</b>             | 2.67                    | <b>2.85</b>            | 0.05             |
| LTE Band25 | 26590     | 1905   | 50RB-Low Rear   | 20.76                 | 21                       | 6.65                     | <b>7.03</b>             | 2.68                    | <b>2.83</b>            | -0.09            |
| LTE Band25 | 26365     | 1882.5 | 50RB-Low Rear   | 20.74                 | 21                       | 6.81                     | <b>7.23</b>             | 2.77                    | <b>2.94</b>            | 0.06             |
| LTE Band25 | 26140     | 1860   | 50RB-Low Rear   | 20.73                 | 21                       | 7.21                     | <b>7.67</b>             | 2.98                    | <b>3.17</b>            | 0.01             |
| LTE Band25 | 26590     | 1905   | 50RB-Low Bottom | 20.76                 | 21                       | 6.1                      | <b>6.45</b>             | 2.44                    | <b>2.58</b>            | -0.08            |

|            |        |        |                  |       |      |      |             |      |             |       |
|------------|--------|--------|------------------|-------|------|------|-------------|------|-------------|-------|
| LTE Band25 | 26365  | 1882.5 | 50RB-Low Bottom  | 20.74 | 21   | 6.55 | <b>6.95</b> | 2.61 | <b>2.77</b> | -0.08 |
| LTE Band25 | 26140  | 1860   | 50RB-Low Bottom  | 20.73 | 21   | 6.88 | <b>7.32</b> | 2.74 | <b>2.92</b> | -0.19 |
| LTE Band66 | 132072 | 1720   | 1RB-Mid Bottom   | 20.43 | 21   | 6.34 | <b>7.23</b> | 2.68 | <b>3.06</b> | 0.09  |
| LTE Band66 | 132322 | 1745   | 1RB-Mid Bottom   | 20.31 | 21   | 6.11 | <b>7.16</b> | 2.53 | <b>2.97</b> | 0.07  |
| LTE Band66 | 132572 | 1770   | 1RB-Mid Bottom   | 20.3  | 21   | 5.59 | <b>6.57</b> | 2.32 | <b>2.73</b> | 0.09  |
| LTE Band66 | 132072 | 1720   | 50RB-High Rear   | 20.43 | 21   | 5.8  | <b>6.61</b> | 2.59 | <b>2.95</b> | 0.09  |
| LTE Band66 | 132322 | 1745   | 50RB-High Rear   | 20.31 | 21   | 6.52 | <b>7.64</b> | 2.69 | <b>3.15</b> | 0.1   |
| LTE Band66 | 132572 | 1770   | 50RB-High Rear   | 20.3  | 21   | 6.28 | <b>7.38</b> | 2.61 | <b>3.07</b> | 0.04  |
| LTE Band66 | 132072 | 1720   | 50RB-High Bottom | 20.44 | 21   | 6.6  | <b>7.51</b> | 2.78 | <b>3.16</b> | 0.12  |
| LTE Band66 | 132322 | 1745   | 50RB-High Bottom | 20.23 | 21   | 5.9  | <b>7.04</b> | 2.43 | <b>2.90</b> | -0.18 |
| LTE Band66 | 132572 | 1770   | 50RB-High Bottom | 20.22 | 21   | 5.13 | <b>6.14</b> | 2.12 | <b>2.54</b> | 0.18  |
| WIFI2.4G   | 6      | 2437   | Rear             | 19.54 | 20.5 | 2.24 | <b>2.79</b> | 1.03 | <b>1.28</b> | 0.12  |

Note: The distance between the EUT and the phantom bottom is 0mm.

## 15 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  $< 0.80$  W/kg; steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is  $\geq 0.80$  W/kg, 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  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).
- 4) Perform a third repeated measurement only if the original, first or second repeated measurement is  $\geq 1.5$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$

**Table 15.1: SAR Measurement Variability for Head&Body**

| Band      | Frequency |        | Mode    | Test Position | Spacing (mm) | Original SAR (W/kg) | First Repeated SAR (W/kg) | The Ratio | Second Repeated SAR (W/kg) |
|-----------|-----------|--------|---------|---------------|--------------|---------------------|---------------------------|-----------|----------------------------|
|           | Ch.       | MHz    |         |               |              |                     |                           |           |                            |
| GSM1900   | 810       | 1909.8 | GPRS(2) | Rear          | 10           | 0.991               | 0.985                     | 1.01      | /                          |
| GSM1900   | 810       | 1909.8 | GPRS(2) | Bottom        | 10           | 0.975               | 0.962                     | 1.01      | /                          |
| WCDMA1900 | 9262      | 1852.4 | RMC     | Rear          | 10           | 0.832               | 0.817                     | 1.02      | /                          |
| WCDMA1900 | 9400      | 1880   | RMC     | Bottom        | 10           | 0.889               | 0.874                     | 1.02      | /                          |
| LTE B25   | 26140     | 1860   | 1RB-Mid | Rear          | 10           | 0.989               | 0.978                     | 1.01      | /                          |
| LTE B25   | 26365     | 1882.5 | 1RB-Mid | Bottom        | 10           | 0.978               | 0.965                     | 1.01      | /                          |
| LTE B66   | 132322    | 1745   | 1RB-Mid | Rear          | 10           | 0.985               | 0.964                     | 1.02      | /                          |
| LTE B66   | 132322    | 1745   | 1RB-Mid | Bottom        | 10           | 0.91                | 0.902                     | 1.01      | /                          |
| WIFI2.4G  | 11        | 2462   | 802.11b | Left Cheek    | 0            | 0.985               | 0.977                     | 1.01      | /                          |

## 16 Measurement Uncertainty

### 16.1 Measurement Uncertainty for Normal SAR Tests (300MHz~3GHz)

| No.                        | Error Description                               | Type | Uncertainty value | Probably Distribution | Div.       | (Ci) 1g | (Ci) 10g | Std. Unc. (1g) | Std. Unc. (10g) | Degree of freedom |
|----------------------------|-------------------------------------------------|------|-------------------|-----------------------|------------|---------|----------|----------------|-----------------|-------------------|
| <b>Measurement system</b>  |                                                 |      |                   |                       |            |         |          |                |                 |                   |
| 1                          | Probe calibration                               | B    | 6.0               | N                     | 1          | 1       | 1        | 6.0            | 6.0             | $\infty$          |
| 2                          | Isotropy                                        | B    | 4.7               | R                     | $\sqrt{3}$ | 0.7     | 0.7      | 1.9            | 1.9             | $\infty$          |
| 3                          | Boundary effect                                 | B    | 1.0               | R                     | $\sqrt{3}$ | 1       | 1        | 0.6            | 0.6             | $\infty$          |
| 4                          | Linearity                                       | B    | 4.7               | R                     | $\sqrt{3}$ | 1       | 1        | 2.7            | 2.7             | $\infty$          |
| 5                          | Detection limit                                 | B    | 1.0               | N                     | 1          | 1       | 1        | 0.6            | 0.6             | $\infty$          |
| 6                          | Readout electronics                             | B    | 0.3               | R                     | $\sqrt{3}$ | 1       | 1        | 0.3            | 0.3             | $\infty$          |
| 7                          | Response time                                   | B    | 0.8               | R                     | $\sqrt{3}$ | 1       | 1        | 0.5            | 0.5             | $\infty$          |
| 8                          | Integration time                                | B    | 2.6               | R                     | $\sqrt{3}$ | 1       | 1        | 1.5            | 1.5             | $\infty$          |
| 9                          | RF ambient conditions-noise                     | B    | 0                 | R                     | $\sqrt{3}$ | 1       | 1        | 0              | 0               | $\infty$          |
| 10                         | RF ambient conditions-reflection                | B    | 0                 | R                     | $\sqrt{3}$ | 1       | 1        | 0              | 0               | $\infty$          |
| 11                         | Probe positioned mech. restrictions             | B    | 0.4               | R                     | $\sqrt{3}$ | 1       | 1        | 0.2            | 0.2             | $\infty$          |
| 12                         | Probe positioning with respect to phantom shell | B    | 2.9               | R                     | $\sqrt{3}$ | 1       | 1        | 1.7            | 1.7             | $\infty$          |
| 13                         | Post-processing                                 | B    | 1.0               | R                     | $\sqrt{3}$ | 1       | 1        | 0.6            | 0.6             | $\infty$          |
| <b>Test sample related</b> |                                                 |      |                   |                       |            |         |          |                |                 |                   |
| 14                         | Test sample positioning                         | A    | 3.3               | N                     | 1          | 1       | 1        | 3.3            | 3.3             | 71                |
| 15                         | Device holder uncertainty                       | A    | 3.4               | N                     | 1          | 1       | 1        | 3.4            | 3.4             | 5                 |
| 16                         | Drift of output power                           | B    | 5.0               | R                     | $\sqrt{3}$ | 1       | 1        | 2.9            | 2.9             | $\infty$          |
| <b>Phantom and set-up</b>  |                                                 |      |                   |                       |            |         |          |                |                 |                   |
| 17                         | Phantom uncertainty                             | B    | 4.0               | R                     | $\sqrt{3}$ | 1       | 1        | 2.3            | 2.3             | $\infty$          |
| 18                         | Liquid conductivity (target)                    | B    | 5.0               | R                     | $\sqrt{3}$ | 0.64    | 0.43     | 1.8            | 1.2             | $\infty$          |
| 19                         | Liquid conductivity (meas.)                     | A    | 2.06              | N                     | 1          | 0.64    | 0.43     | 1.32           | 0.89            | 43                |
| 20                         | Liquid permittivity (target)                    | B    | 5.0               | R                     | $\sqrt{3}$ | 0.6     | 0.49     | 1.7            | 1.4             | $\infty$          |
| 21                         | Liquid permittivity (meas.)                     | A    | 1.6               | N                     | 1          | 0.6     | 0.49     | 1.0            | 0.8             | 521               |

|                                                    |                                             |  |  |  |  |      |      |     |
|----------------------------------------------------|---------------------------------------------|--|--|--|--|------|------|-----|
| Combined standard uncertainty                      | $u_c' = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$ |  |  |  |  | 9.55 | 9.43 | 257 |
| Expanded uncertainty (confidence interval of 95 %) | $u_e = 2u_c$                                |  |  |  |  | 19.1 | 18.9 |     |

### 16.2 Measurement Uncertainty for Normal SAR Tests (3~6GHz)

| No.                        | Error Description                               | Type | Uncertainty value | Probably Distribution | Div.       | (Ci) 1g | (Ci) 10g | Std. Unc. (1g) | Std. Unc. (10g) | Degree of freedom |
|----------------------------|-------------------------------------------------|------|-------------------|-----------------------|------------|---------|----------|----------------|-----------------|-------------------|
| <b>Measurement system</b>  |                                                 |      |                   |                       |            |         |          |                |                 |                   |
| 1                          | Probe calibration                               | B    | 6.55              | N                     | 1          | 1       | 1        | 6.55           | 6.55            | $\infty$          |
| 2                          | Isotropy                                        | B    | 4.7               | R                     | $\sqrt{3}$ | 0.7     | 0.7      | 1.9            | 1.9             | $\infty$          |
| 3                          | Boundary effect                                 | B    | 2.0               | R                     | $\sqrt{3}$ | 1       | 1        | 1.2            | 1.2             | $\infty$          |
| 4                          | Linearity                                       | B    | 4.7               | R                     | $\sqrt{3}$ | 1       | 1        | 2.7            | 2.7             | $\infty$          |
| 5                          | Detection limit                                 | B    | 1.0               | R                     | $\sqrt{3}$ | 1       | 1        | 0.6            | 0.6             | $\infty$          |
| 6                          | Readout electronics                             | B    | 0.3               | R                     | $\sqrt{3}$ | 1       | 1        | 0.3            | 0.3             | $\infty$          |
| 7                          | Response time                                   | B    | 0.8               | R                     | $\sqrt{3}$ | 1       | 1        | 0.5            | 0.5             | $\infty$          |
| 8                          | Integration time                                | B    | 2.6               | R                     | $\sqrt{3}$ | 1       | 1        | 1.5            | 1.5             | $\infty$          |
| 9                          | RF ambient conditions-noise                     | B    | 0                 | R                     | $\sqrt{3}$ | 1       | 1        | 0              | 0               | $\infty$          |
| 10                         | RF ambient conditions-reflection                | B    | 0                 | R                     | $\sqrt{3}$ | 1       | 1        | 0              | 0               | $\infty$          |
| 11                         | Probe positioned mech. restrictions             | B    | 0.8               | R                     | $\sqrt{3}$ | 1       | 1        | 0.5            | 0.5             | $\infty$          |
| 12                         | Probe positioning with respect to phantom shell | B    | 6.7               | R                     | $\sqrt{3}$ | 1       | 1        | 3.9            | 3.9             | $\infty$          |
| 13                         | Post-processing                                 | B    | 4.0               | R                     | $\sqrt{3}$ | 1       | 1        | 2.3            | 2.3             | $\infty$          |
| <b>Test sample related</b> |                                                 |      |                   |                       |            |         |          |                |                 |                   |
| 14                         | Test sample positioning                         | A    | 3.3               | N                     | 1          | 1       | 1        | 3.3            | 3.3             | 71                |
| 15                         | Device holder uncertainty                       | A    | 3.4               | N                     | 1          | 1       | 1        | 3.4            | 3.4             | 5                 |
| 16                         | Drift of output power                           | B    | 5.0               | R                     | $\sqrt{3}$ | 1       | 1        | 2.9            | 2.9             | $\infty$          |
| <b>Phantom and set-up</b>  |                                                 |      |                   |                       |            |         |          |                |                 |                   |
| 17                         | Phantom uncertainty                             | B    | 4.0               | R                     | $\sqrt{3}$ | 1       | 1        | 2.3            | 2.3             | $\infty$          |
| 18                         | Liquid conductivity (target)                    | B    | 5.0               | R                     | $\sqrt{3}$ | 0.64    | 0.43     | 1.8            | 1.2             | $\infty$          |
| 19                         | Liquid conductivity (meas.)                     | A    | 2.06              | N                     | 1          | 0.64    | 0.43     | 1.32           | 0.89            | 43                |
| 20                         | Liquid permittivity (target)                    | B    | 5.0               | R                     | $\sqrt{3}$ | 0.6     | 0.49     | 1.7            | 1.4             | $\infty$          |

|                                                    |                             |                                             |     |   |   |     |      |      |      |     |
|----------------------------------------------------|-----------------------------|---------------------------------------------|-----|---|---|-----|------|------|------|-----|
| 21                                                 | Liquid permittivity (meas.) | A                                           | 1.6 | N | 1 | 0.6 | 0.49 | 1.0  | 0.8  | 521 |
| Combined standard uncertainty                      |                             | $u_c' = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$ |     |   |   |     |      | 10.7 | 10.6 | 257 |
| Expanded uncertainty (confidence interval of 95 %) |                             | $u_e = 2u_c$                                |     |   |   |     |      | 21.4 | 21.1 |     |

### 16.3 Measurement Uncertainty for Fast SAR Tests (300MHz~3GHz)

| No.                        | Error Description                               | Type | Uncertainty value | Probably Distribution | Div.       | (Ci) 1g | (Ci) 10g | Std. Unc. (1g) | Std. Unc. (10g) | Degree of freedom |
|----------------------------|-------------------------------------------------|------|-------------------|-----------------------|------------|---------|----------|----------------|-----------------|-------------------|
| <b>Measurement system</b>  |                                                 |      |                   |                       |            |         |          |                |                 |                   |
| 1                          | Probe calibration                               | B    | 6.0               | N                     | 1          | 1       | 1        | 6.0            | 6.0             | $\infty$          |
| 2                          | Isotropy                                        | B    | 4.7               | R                     | $\sqrt{3}$ | 0.7     | 0.7      | 1.9            | 1.9             | $\infty$          |
| 3                          | Boundary effect                                 | B    | 1.0               | R                     | $\sqrt{3}$ | 1       | 1        | 0.6            | 0.6             | $\infty$          |
| 4                          | Linearity                                       | B    | 4.7               | R                     | $\sqrt{3}$ | 1       | 1        | 2.7            | 2.7             | $\infty$          |
| 5                          | Detection limit                                 | B    | 1.0               | R                     | $\sqrt{3}$ | 1       | 1        | 0.6            | 0.6             | $\infty$          |
| 6                          | Readout electronics                             | B    | 0.3               | R                     | $\sqrt{3}$ | 1       | 1        | 0.3            | 0.3             | $\infty$          |
| 7                          | Response time                                   | B    | 0.8               | R                     | $\sqrt{3}$ | 1       | 1        | 0.5            | 0.5             | $\infty$          |
| 8                          | Integration time                                | B    | 2.6               | R                     | $\sqrt{3}$ | 1       | 1        | 1.5            | 1.5             | $\infty$          |
| 9                          | RF ambient conditions-noise                     | B    | 0                 | R                     | $\sqrt{3}$ | 1       | 1        | 0              | 0               | $\infty$          |
| 10                         | RF ambient conditions-reflection                | B    | 0                 | R                     | $\sqrt{3}$ | 1       | 1        | 0              | 0               | $\infty$          |
| 11                         | Probe positioned mech. Restrictions             | B    | 0.4               | R                     | $\sqrt{3}$ | 1       | 1        | 0.2            | 0.2             | $\infty$          |
| 12                         | Probe positioning with respect to phantom shell | B    | 2.9               | R                     | $\sqrt{3}$ | 1       | 1        | 1.7            | 1.7             | $\infty$          |
| 13                         | Post-processing                                 | B    | 1.0               | R                     | $\sqrt{3}$ | 1       | 1        | 0.6            | 0.6             | $\infty$          |
| 14                         | Fast SAR z-Approximation                        | B    | 7.0               | R                     | $\sqrt{3}$ | 1       | 1        | 4.0            | 4.0             | $\infty$          |
| <b>Test sample related</b> |                                                 |      |                   |                       |            |         |          |                |                 |                   |
| 15                         | Test sample positioning                         | A    | 3.3               | N                     | 1          | 1       | 1        | 3.3            | 3.3             | 71                |
| 16                         | Device holder uncertainty                       | A    | 3.4               | N                     | 1          | 1       | 1        | 3.4            | 3.4             | 5                 |
| 17                         | Drift of output power                           | B    | 5.0               | R                     | $\sqrt{3}$ | 1       | 1        | 2.9            | 2.9             | $\infty$          |
| <b>Phantom and set-up</b>  |                                                 |      |                   |                       |            |         |          |                |                 |                   |
| 18                         | Phantom uncertainty                             | B    | 4.0               | R                     | $\sqrt{3}$ | 1       | 1        | 2.3            | 2.3             | $\infty$          |
| 19                         | Liquid conductivity (target)                    | B    | 5.0               | R                     | $\sqrt{3}$ | 0.64    | 0.43     | 1.8            | 1.2             | $\infty$          |

|                                                    |                              |                                             |      |   |            |      |      |      |      |          |
|----------------------------------------------------|------------------------------|---------------------------------------------|------|---|------------|------|------|------|------|----------|
| 20                                                 | Liquid conductivity (meas.)  | A                                           | 2.06 | N | 1          | 0.64 | 0.43 | 1.32 | 0.89 | 43       |
| 21                                                 | Liquid permittivity (target) | B                                           | 5.0  | R | $\sqrt{3}$ | 0.6  | 0.49 | 1.7  | 1.4  | $\infty$ |
| 22                                                 | Liquid permittivity (meas.)  | A                                           | 1.6  | N | 1          | 0.6  | 0.49 | 1.0  | 0.8  | 521      |
| Combined standard uncertainty                      |                              | $u_c' = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$ |      |   |            |      |      | 10.4 | 10.3 | 257      |
| Expanded uncertainty (confidence interval of 95 %) |                              | $u_e = 2u_c$                                |      |   |            |      |      | 20.8 | 20.6 |          |

### 16.4 Measurement Uncertainty for Fast SAR Tests (3~6GHz)

| No.                        | Error Description                               | Type | Uncertainty value | Probably Distribution | Div.       | (Ci) 1g | (Ci) 10g | Std. Unc. (1g) | Std. Unc. (10g) | Degree of freedom |
|----------------------------|-------------------------------------------------|------|-------------------|-----------------------|------------|---------|----------|----------------|-----------------|-------------------|
| <b>Measurement system</b>  |                                                 |      |                   |                       |            |         |          |                |                 |                   |
| 1                          | Probe calibration                               | B    | 6.55              | N                     | 1          | 1       | 1        | 6.55           | 6.55            | $\infty$          |
| 2                          | Isotropy                                        | B    | 4.7               | R                     | $\sqrt{3}$ | 0.7     | 0.7      | 1.9            | 1.9             | $\infty$          |
| 3                          | Boundary effect                                 | B    | 2.0               | R                     | $\sqrt{3}$ | 1       | 1        | 1.2            | 1.2             | $\infty$          |
| 4                          | Linearity                                       | B    | 4.7               | R                     | $\sqrt{3}$ | 1       | 1        | 2.7            | 2.7             | $\infty$          |
| 5                          | Detection limit                                 | B    | 1.0               | R                     | $\sqrt{3}$ | 1       | 1        | 0.6            | 0.6             | $\infty$          |
| 6                          | Readout electronics                             | B    | 0.3               | R                     | $\sqrt{3}$ | 1       | 1        | 0.3            | 0.3             | $\infty$          |
| 7                          | Response time                                   | B    | 0.8               | R                     | $\sqrt{3}$ | 1       | 1        | 0.5            | 0.5             | $\infty$          |
| 8                          | Integration time                                | B    | 2.6               | R                     | $\sqrt{3}$ | 1       | 1        | 1.5            | 1.5             | $\infty$          |
| 9                          | RF ambient conditions-noise                     | B    | 0                 | R                     | $\sqrt{3}$ | 1       | 1        | 0              | 0               | $\infty$          |
| 10                         | RF ambient conditions-reflection                | B    | 0                 | R                     | $\sqrt{3}$ | 1       | 1        | 0              | 0               | $\infty$          |
| 11                         | Probe positioned mech. Restrictions             | B    | 0.8               | R                     | $\sqrt{3}$ | 1       | 1        | 0.5            | 0.5             | $\infty$          |
| 12                         | Probe positioning with respect to phantom shell | B    | 6.7               | R                     | $\sqrt{3}$ | 1       | 1        | 3.9            | 3.9             | $\infty$          |
| 13                         | Post-processing                                 | B    | 1.0               | R                     | $\sqrt{3}$ | 1       | 1        | 0.6            | 0.6             | $\infty$          |
| 14                         | Fast SAR z-Approximation                        | B    | 14.0              | R                     | $\sqrt{3}$ | 1       | 1        | 8.1            | 8.1             | $\infty$          |
| <b>Test sample related</b> |                                                 |      |                   |                       |            |         |          |                |                 |                   |
| 15                         | Test sample positioning                         | A    | 3.3               | N                     | 1          | 1       | 1        | 3.3            | 3.3             | 71                |
| 16                         | Device holder uncertainty                       | A    | 3.4               | N                     | 1          | 1       | 1        | 3.4            | 3.4             | 5                 |

|                                                    |                              |                                             |      |   |            |      |      |      |      |          |
|----------------------------------------------------|------------------------------|---------------------------------------------|------|---|------------|------|------|------|------|----------|
| 17                                                 | Drift of output power        | B                                           | 5.0  | R | $\sqrt{3}$ | 1    | 1    | 2.9  | 2.9  | $\infty$ |
| <b>Phantom and set-up</b>                          |                              |                                             |      |   |            |      |      |      |      |          |
| 18                                                 | Phantom uncertainty          | B                                           | 4.0  | R | $\sqrt{3}$ | 1    | 1    | 2.3  | 2.3  | $\infty$ |
| 19                                                 | Liquid conductivity (target) | B                                           | 5.0  | R | $\sqrt{3}$ | 0.64 | 0.43 | 1.8  | 1.2  | $\infty$ |
| 20                                                 | Liquid conductivity (meas.)  | A                                           | 2.06 | N | 1          | 0.64 | 0.43 | 1.32 | 0.89 | 43       |
| 21                                                 | Liquid permittivity (target) | B                                           | 5.0  | R | $\sqrt{3}$ | 0.6  | 0.49 | 1.7  | 1.4  | $\infty$ |
| 22                                                 | Liquid permittivity (meas.)  | A                                           | 1.6  | N | 1          | 0.6  | 0.49 | 1.0  | 0.8  | 521      |
| Combined standard uncertainty                      |                              | $u'_c = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$ |      |   |            |      |      | 13.5 | 13.4 | 257      |
| Expanded uncertainty (confidence interval of 95 %) |                              | $u_e = 2u_c$                                |      |   |            |      |      | 27.0 | 26.8 |          |

## 17 MAIN TEST INSTRUMENTS

**Table 17.1: List of Main Instruments**

| No. | Name                  | Type          | Serial Number | Calibration Date         | Valid Period |
|-----|-----------------------|---------------|---------------|--------------------------|--------------|
| 01  | Network analyzer      | E5071C        | MY46110673    | January 14, 2022         | One year     |
| 02  | Power sensor          | NRP110T       | 101139        | January 13, 2022         | One year     |
| 03  | Power sensor          | NRP110T       | 101159        |                          |              |
| 04  | Signal Generator      | E4438C        | MY49071430    | January 13, 2022         | One year     |
| 05  | Amplifier             | 60S1G4        | 0331848       | No Calibration Requested |              |
| 06  | BTS                   | CMW500        | 159850        | January 24, 2022         | One year     |
| 07  | E-field Probe         | SPEAG EX3DV4  | 7548          | August 1, 2022           | One year     |
| 08  | DAE                   | SPEAG DAE4    | 1331          | September 1, 2021        | One year     |
| 09  | Dipole Validation Kit | SPEAG D750V3  | 1017          | July 20,,2022            | One year     |
| 10  | Dipole Validation Kit | SPEAG D900V2  | 1d051         | July 26,,2022            | One year     |
| 11  | Dipole Validation Kit | SPEAG D1800V2 | 2d145         | July 18,,2022            | One year     |
| 12  | Dipole Validation Kit | SPEAG D1900V2 | 5d101         | July 26,2022             | One year     |
| 13  | Dipole Validation Kit | SPEAG D2450V2 | 853           | July 20,2022             | One year     |
| 14  | Dipole Validation Kit | SPEAG D2600V2 | 1012          | July 20,2022             | One year     |

\*\*\*END OF REPORT BODY\*\*\*

## ANNEX A Graph Results

### GSM850 Head

Date: 10/22/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 836.6$  MHz;  $\sigma = 0.86$  S/m;  $\epsilon_r = 43.651$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM850 2TX 836.6 MHz Duty Cycle: 1:4.00037

Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

**Area Scan (81x141x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm  
Maximum value of SAR (interpolated) = 0.360 W/kg

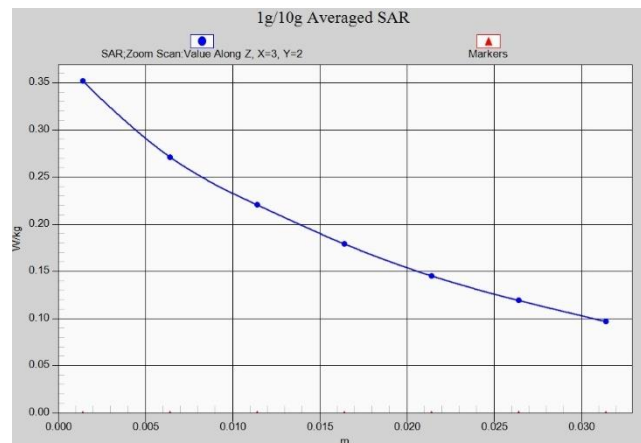
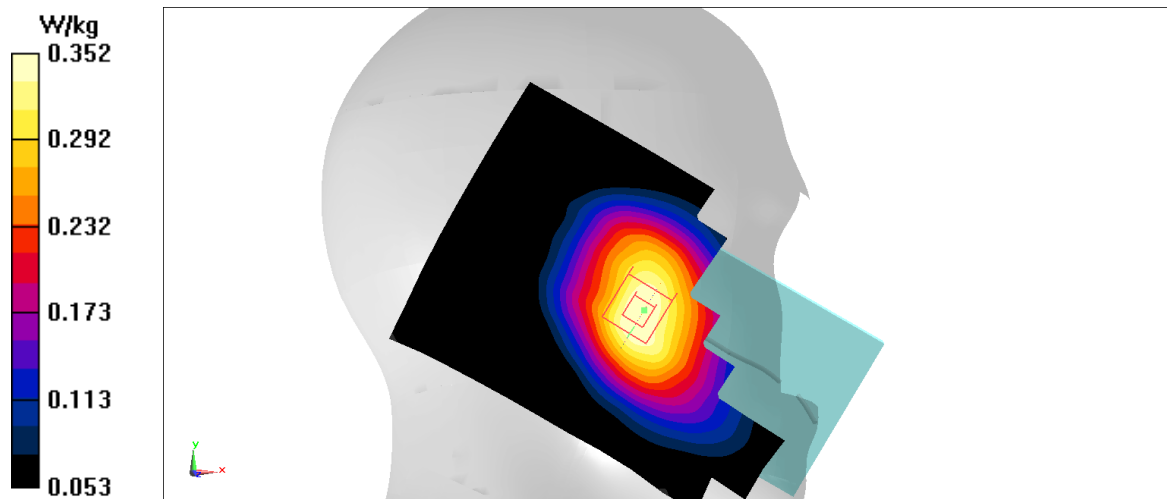
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 6.152 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.384 W/kg

**SAR(1 g) = 0.299 W/kg; SAR(10 g) = 0.237 W/kg**

Maximum value of SAR (measured) = 0.352 W/kg



### GSM850 Body

Date: 10/22/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 836.6$  MHz;  $\sigma = 0.86$  S/m;  $\epsilon_r = 43.651$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM850 2TX 836.6 MHz Duty Cycle: 1:4.00037

Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.709 W/kg

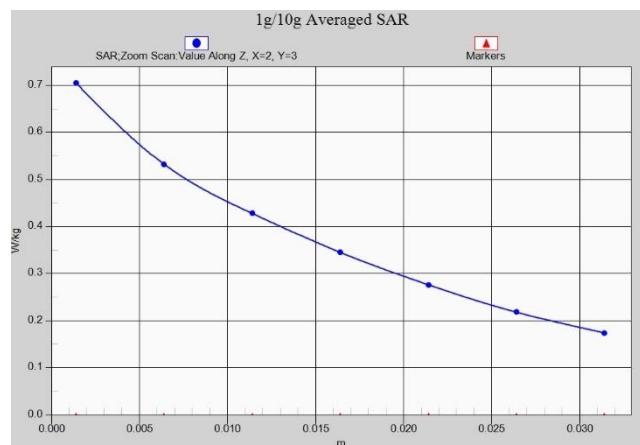
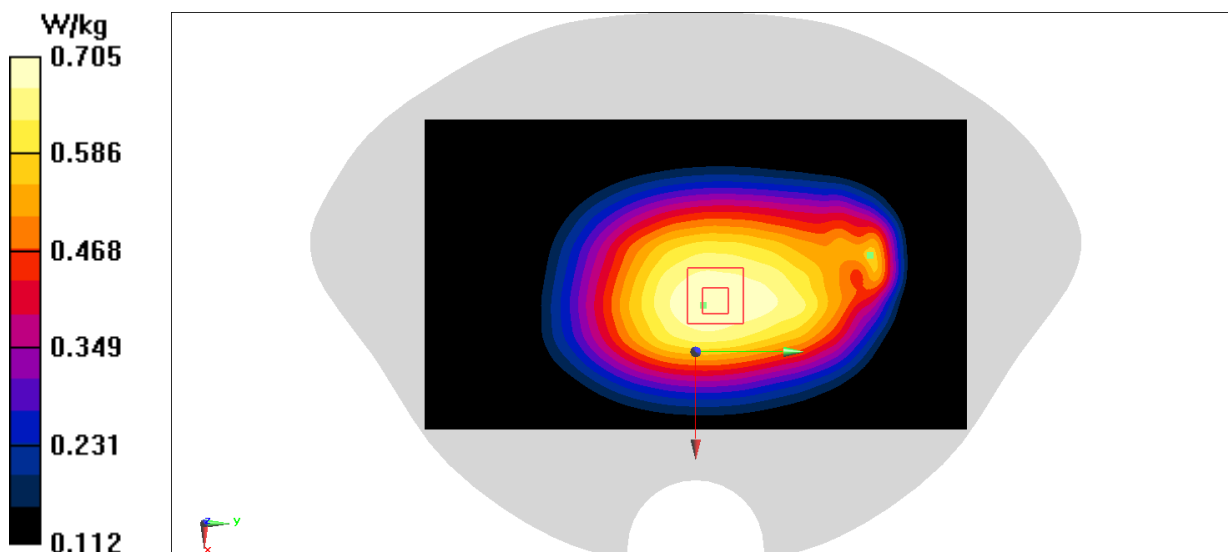
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.14 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 0.776 W/kg

**SAR(1 g) = 0.583 W/kg; SAR(10 g) = 0.452 W/kg**

Maximum value of SAR (measured) = 0.705 W/kg



## GSM1900 Head

Date: 11/5/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.477$  S/m;  $\epsilon_r = 40.713$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM1900 2TX 1880 MHz Duty Cycle: 1:4.00037

Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.185 W/kg

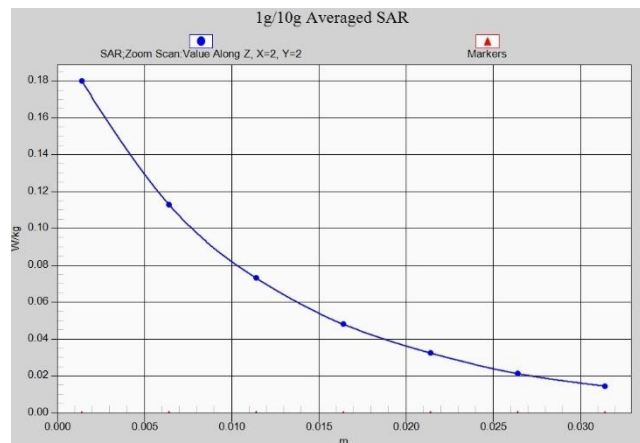
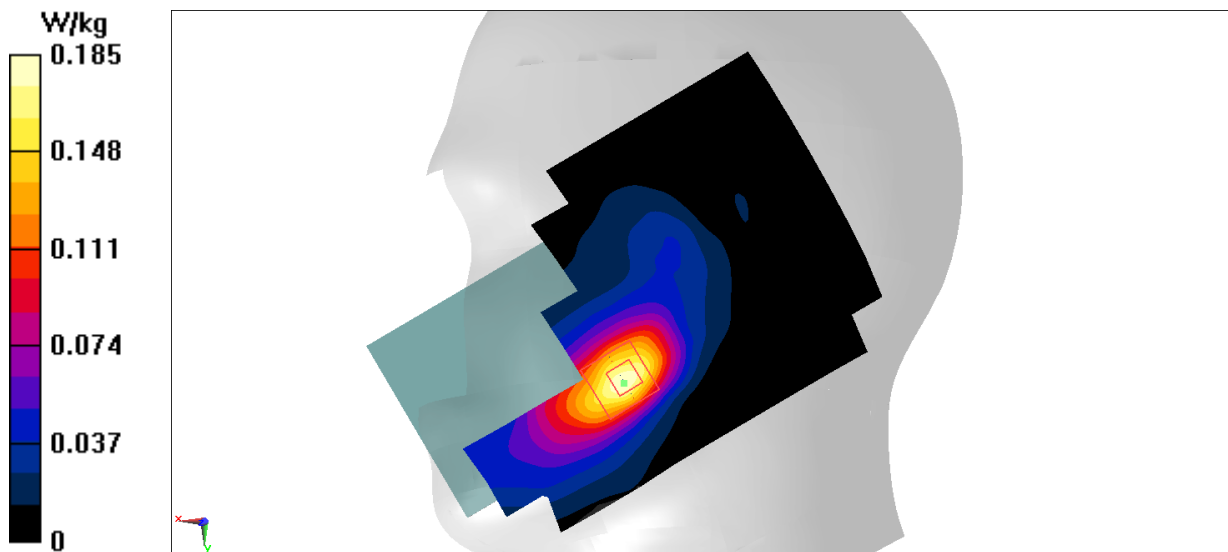
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.566 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.209 W/kg

**SAR(1 g) = 0.129 W/kg; SAR(10 g) = 0.076 W/kg**

Maximum value of SAR (measured) = 0.180 W/kg



### GSM1900 Body

Date: 11/5/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.499$  S/m;  $\epsilon_r = 40.668$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM1900 2TX 1909.8 MHz Duty Cycle: 1:4.00037

Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

**Area Scan (81x141x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

Maximum value of SAR (interpolated) = 1.56 W/kg

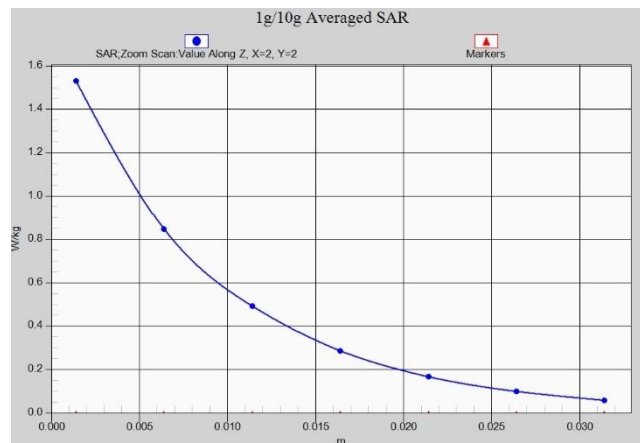
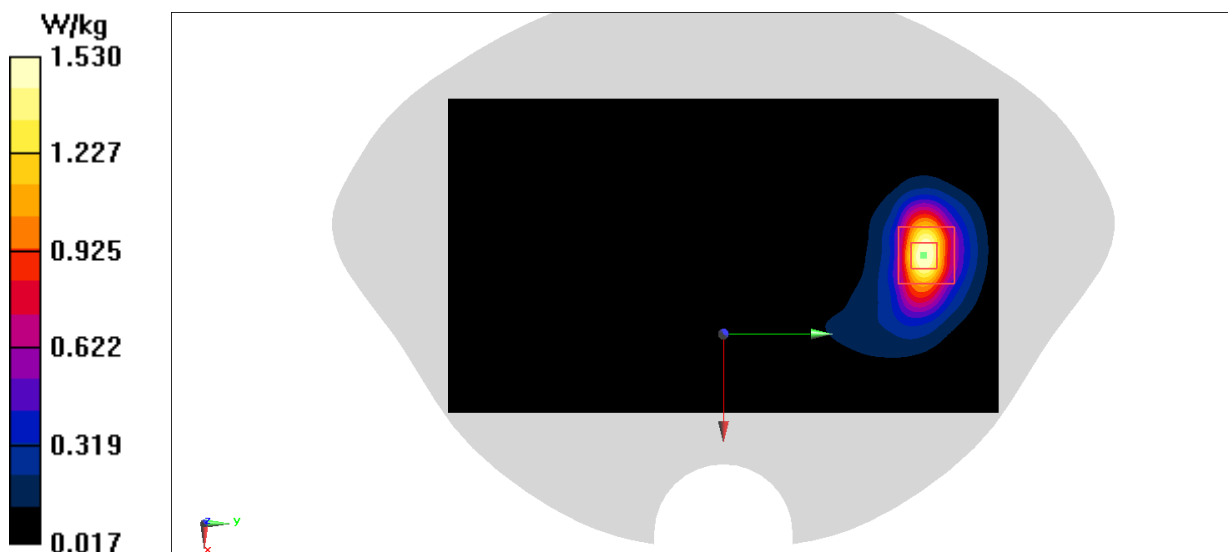
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 4.417 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 1.83 W/kg

**SAR(1 g) = 0.991 W/kg; SAR(10 g) = 0.502 W/kg**

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



### GSM1900 Body

Date: 11/5/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.499$  S/m;  $\epsilon_r = 40.668$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: GSM1900 2TX 1909.8 MHz Duty Cycle: 1:4.00037

Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.879 W/kg

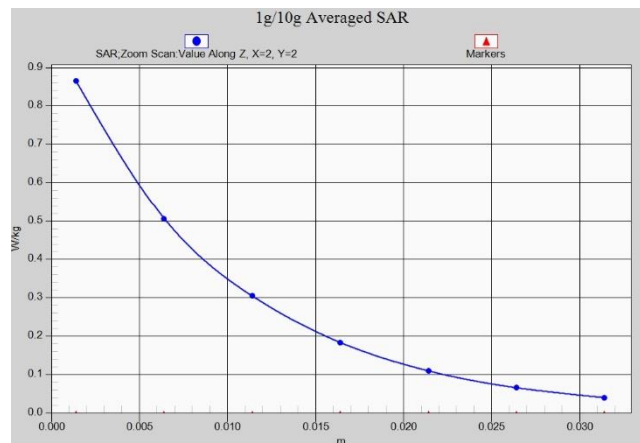
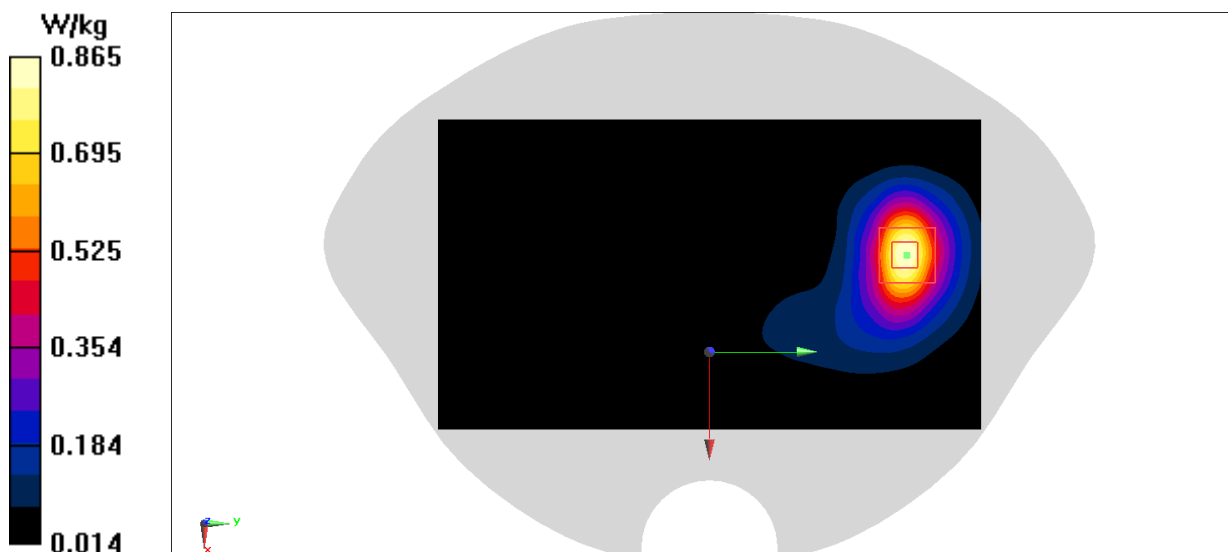
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.388 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.03 W/kg

**SAR(1 g) = 0.590 W/kg; SAR(10 g) = 0.322 W/kg**

Maximum value of SAR (measured) = 0.865 W/kg



## WCDMA850 Head

Date: 10/22/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 846.6$  MHz;  $\sigma = 0.865$  S/m;  $\epsilon_r = 43.596$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: WCDMA850(B5) 846.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.307 W/kg

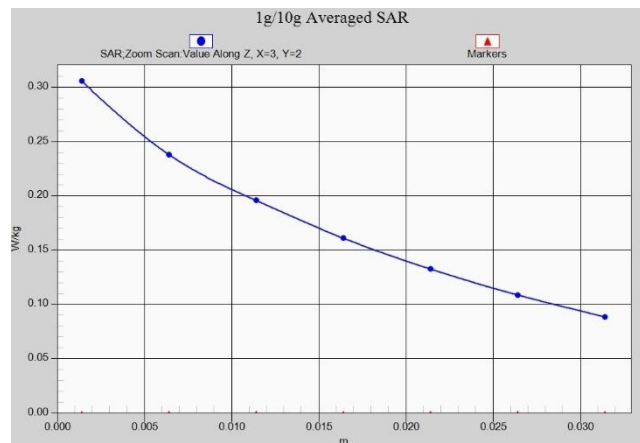
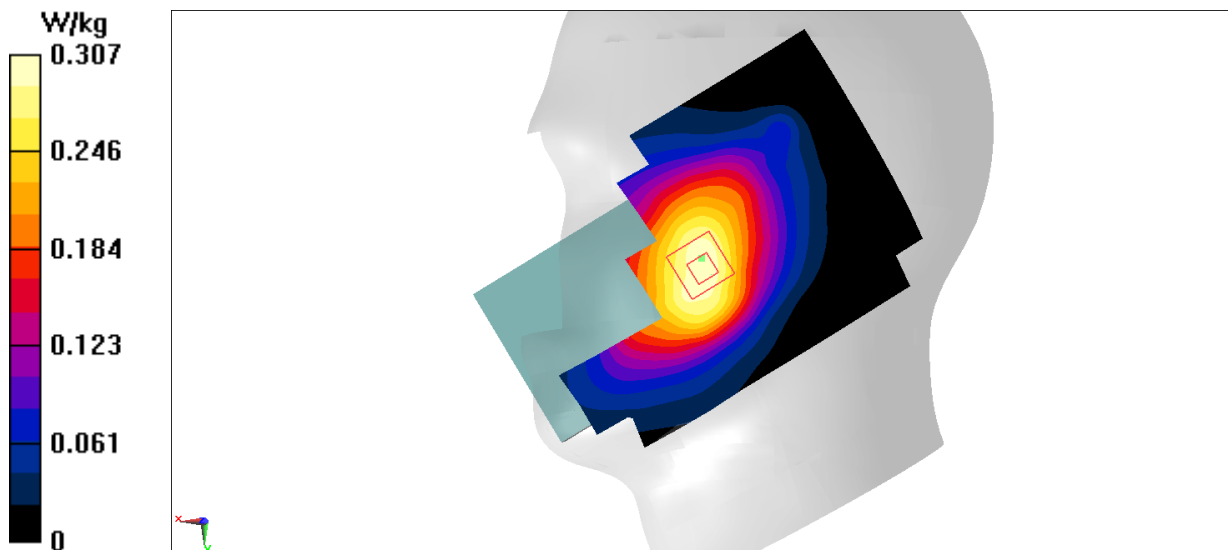
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.864 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.334 W/kg

**SAR(1 g) = 0.260 W/kg; SAR(10 g) = 0.205 W/kg**

Maximum value of SAR (measured) = 0.306 W/kg



### WCDMA850 Body

Date: 10/22/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 826.4$  MHz;  $\sigma = 0.855$  S/m;  $\epsilon_r = 43.707$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: WCDMA850(B5) 826.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.502 W/kg

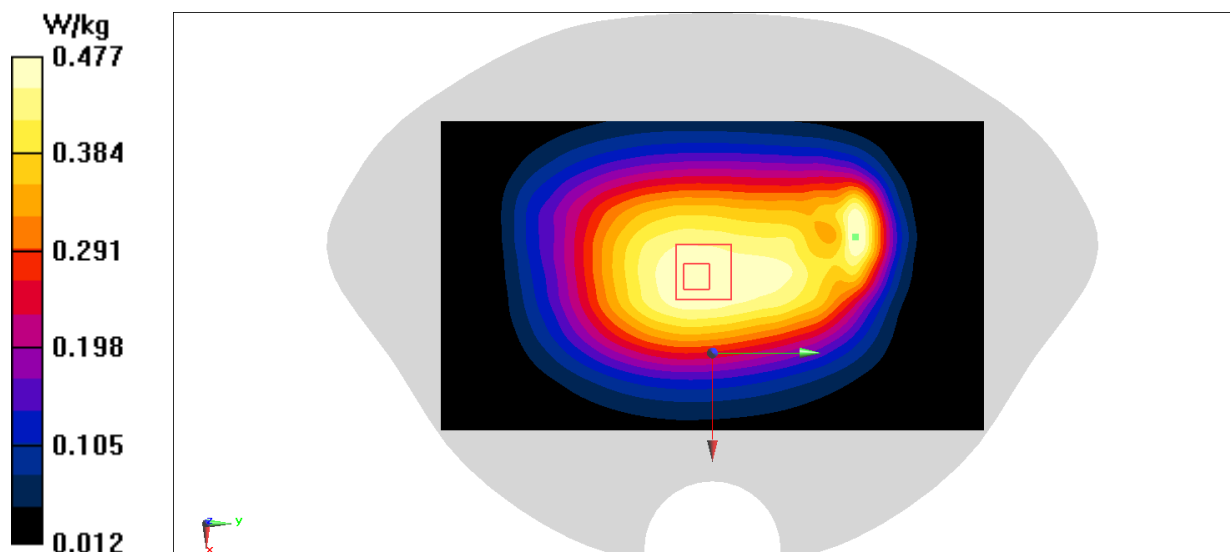
**Zoom Scan (7x12x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.13 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.559 W/kg

**SAR(1 g) = 0.393 W/kg; SAR(10 g) = 0.305 W/kg**

Maximum value of SAR (measured) = 0.477 W/kg



## WCDMA1700 Head

Date: 10/26/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1712.4$  MHz;  $\sigma = 1.366$  S/m;  $\epsilon_r = 41.178$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: WCDMA1700(B4) 1712.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(8.13, 8.13, 8.13)

**Area Scan (81x141x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

Maximum value of SAR (interpolated) = 0.173 W/kg

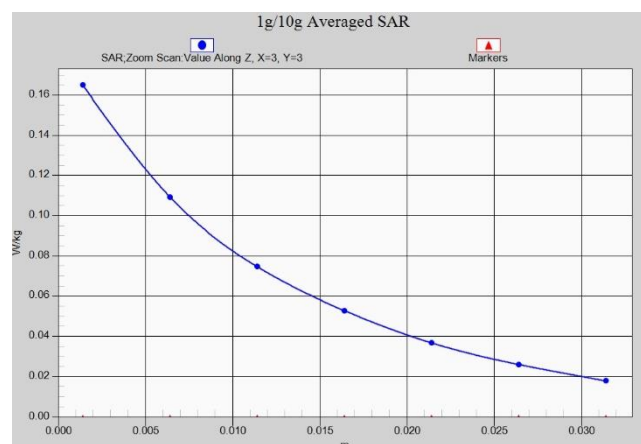
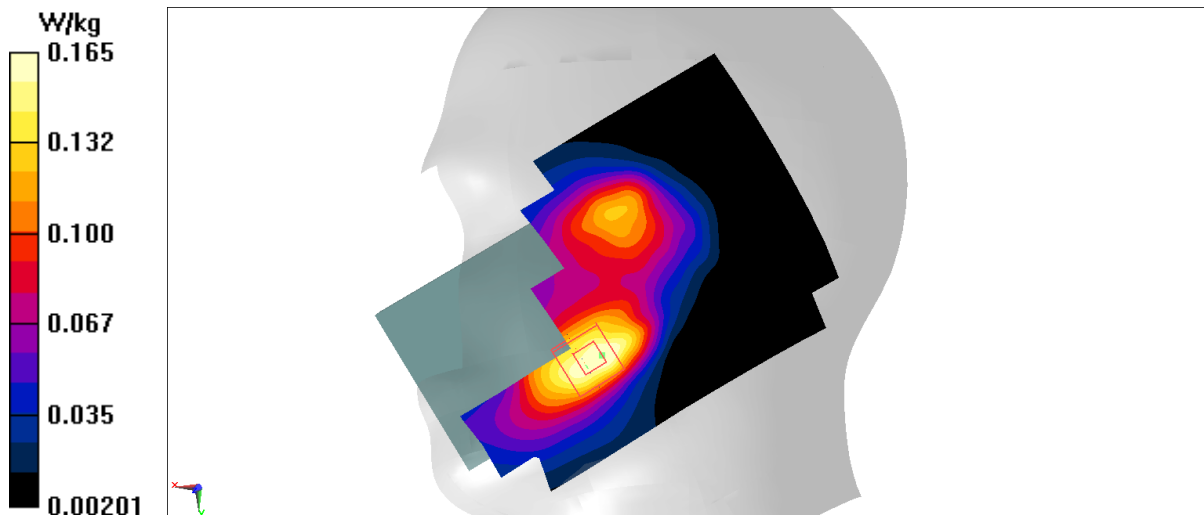
**Zoom Scan (6x6x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 1.951 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.192 W/kg

**SAR(1 g) = 0.125 W/kg; SAR(10 g) = 0.080 W/kg**

Maximum value of SAR (measured) = 0.165 W/kg



## WCDMA1700 Body

Date: 10/26/2022

Electronics: DAE4 Sn1331

Medium: H650-7000M

Medium parameters used:  $f = 1752.6$  MHz;  $\sigma = 1.371$  S/m;  $\epsilon_r = 41.91$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: WCDMA1700(B4) 1752.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(8.13, 8.13, 8.13)

**Area Scan (51x91x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

Maximum value of SAR (interpolated) = 1.00 W/kg

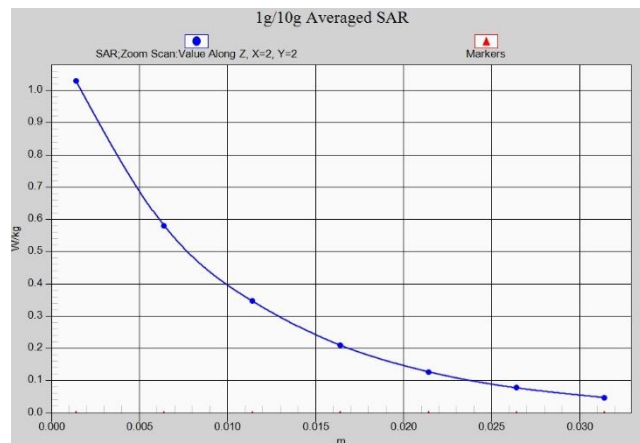
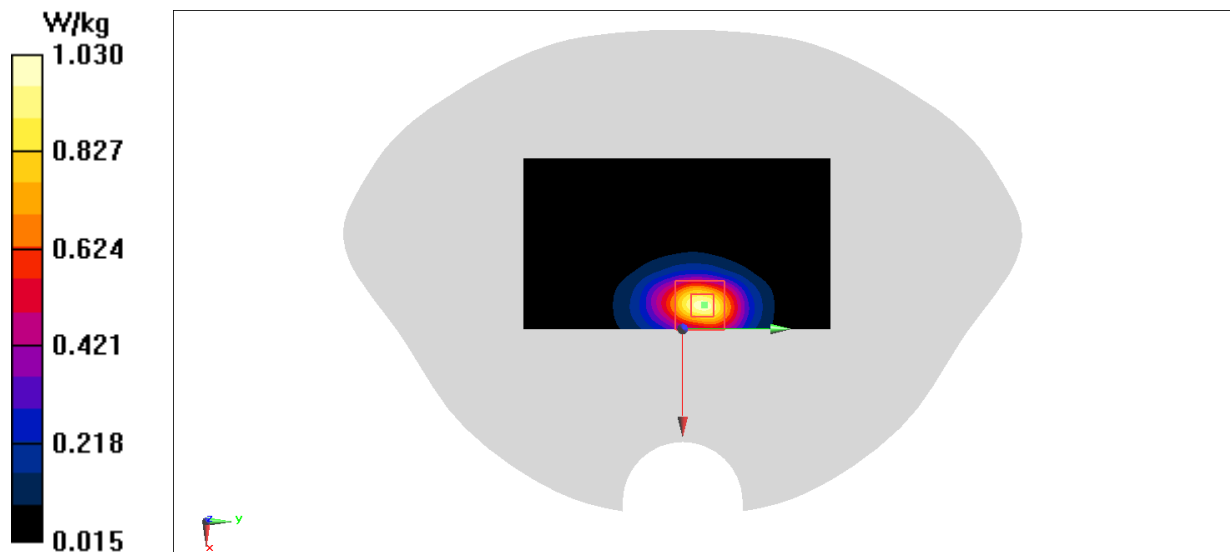
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 14.38 V/m; Power Drift = -0.1 dB

Peak SAR (extrapolated) = 1.23 W/kg

**SAR(1 g) = 0.674 W/kg; SAR(10 g) = 0.349 W/kg**

Maximum value of SAR (measured) = 1.03 W/kg



## WCDMA1700 Body

Date: 10/26/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1752.6$  MHz;  $\sigma = 1.394$  S/m;  $\epsilon_r = 41.025$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: WCDMA1700(B4) 1752.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(8.13, 8.13, 8.13)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.907 W/kg

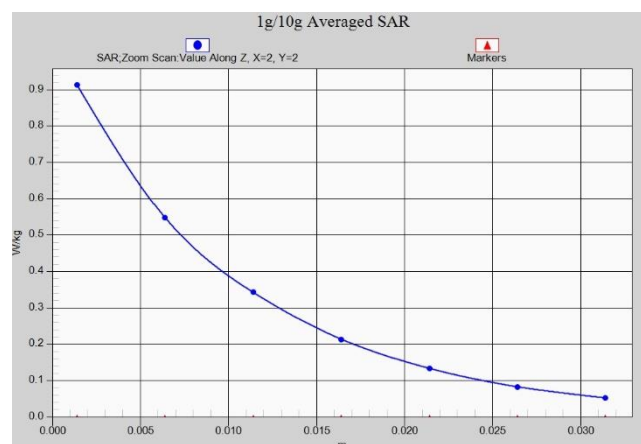
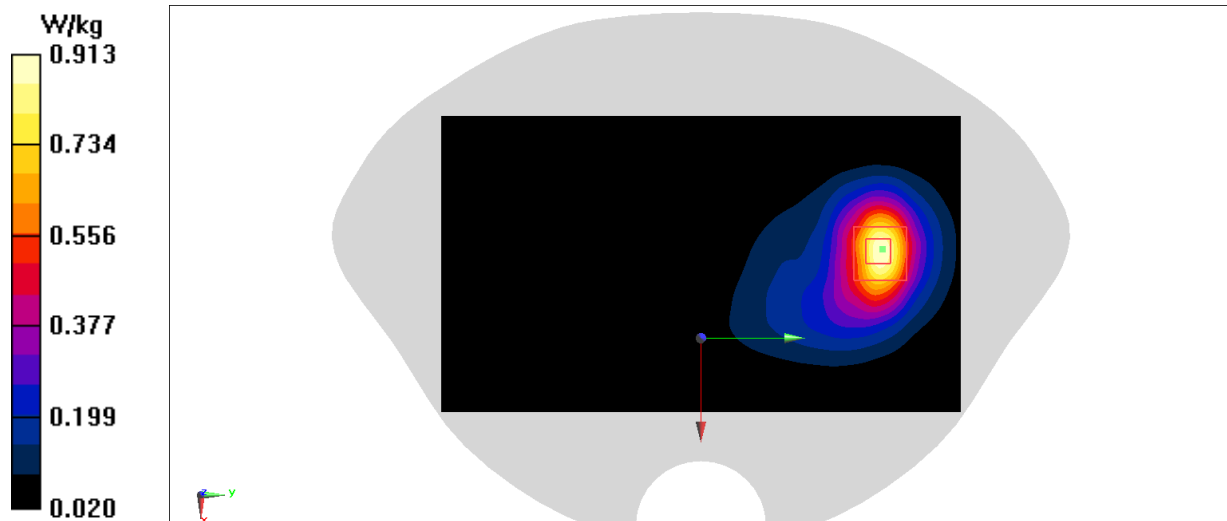
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.228 V/m; Power Drift = -0.1 dB

Peak SAR (extrapolated) = 1.09 W/kg

**SAR(1 g) = 0.635 W/kg; SAR(10 g) = 0.358 W/kg**

Maximum value of SAR (measured) = 0.913 W/kg



## WCDMA1900 Head

Date: 11/5/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1907.6$  MHz;  $\sigma = 1.497$  S/m;  $\epsilon_r = 40.673$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: WCDMA1900(B2) 1907.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.213 W/kg

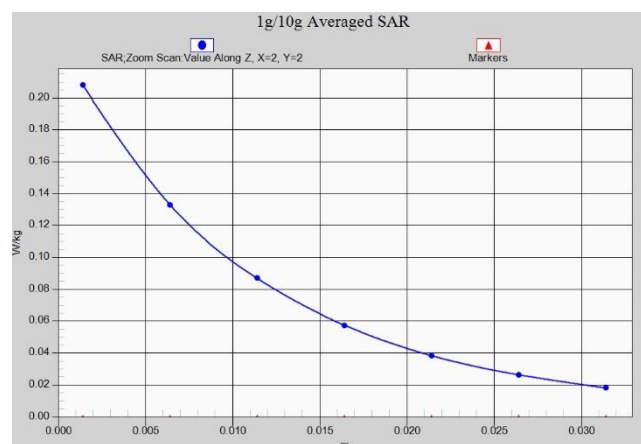
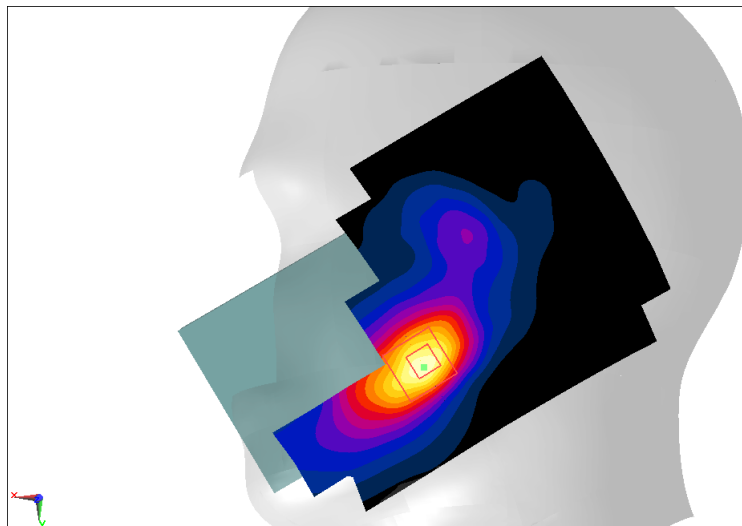
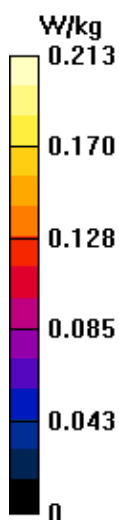
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.283 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.241 W/kg

**SAR(1 g) = 0.152 W/kg; SAR(10 g) = 0.091 W/kg**

Maximum value of SAR (measured) = 0.208 W/kg



## WCDMA1900 Body

Date: 11/5/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.477$  S/m;  $\epsilon_r = 40.713$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: WCDMA1900(B2) 1880 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

**Area Scan (41x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

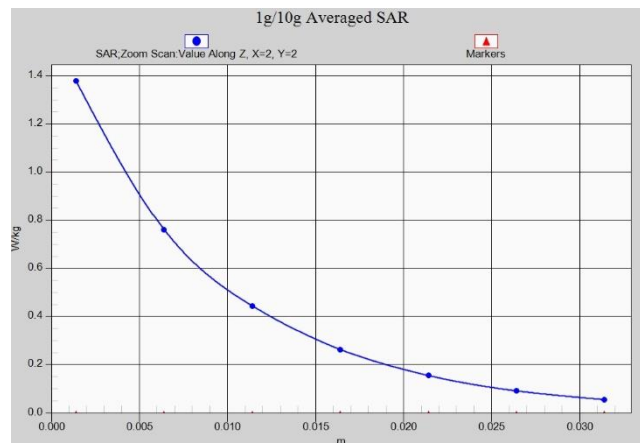
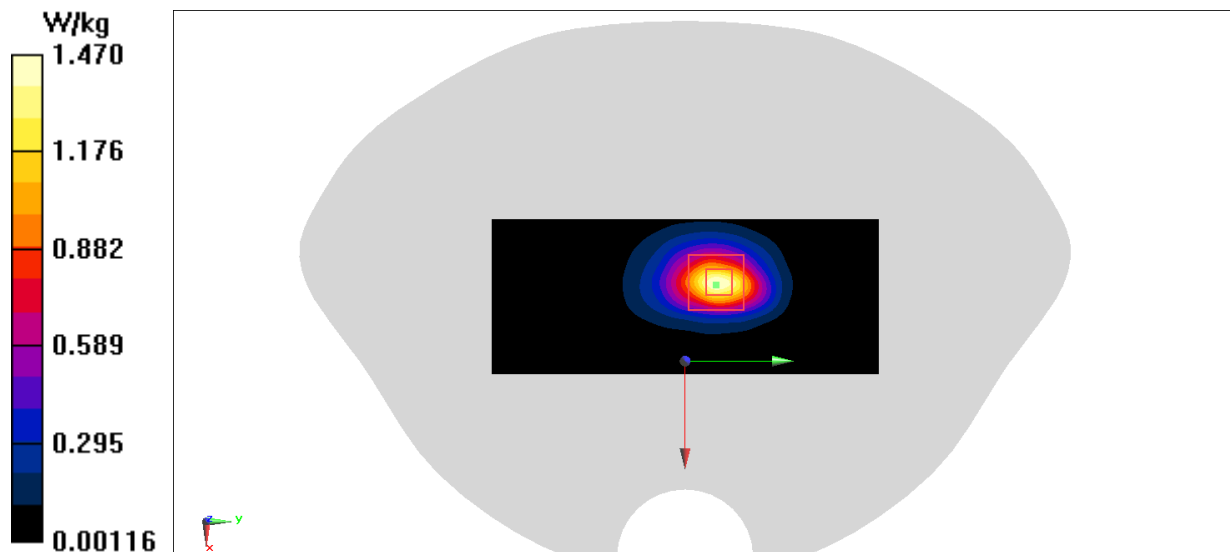
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 23.06 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.65 W/kg

**SAR(1 g) = 0.889 W/kg; SAR(10 g) = 0.449 W/kg**

Maximum value of SAR (measured) = 1.38 W/kg



## WCDMA1900 Body

Date: 11/5/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1852.4$  MHz;  $\sigma = 1.457$  S/m;  $\epsilon_r = 40.77$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: WCDMA1900(B2) 1852.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.18 W/kg

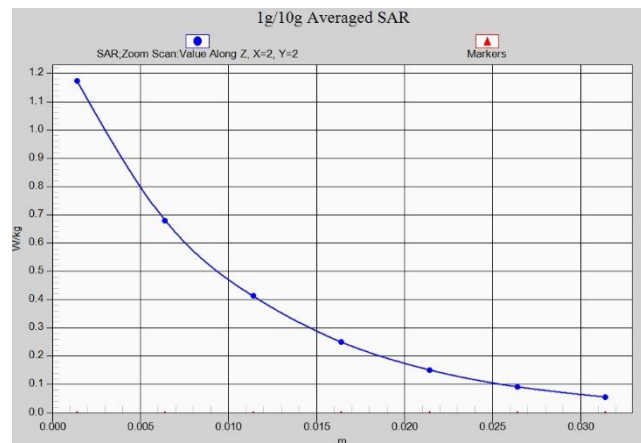
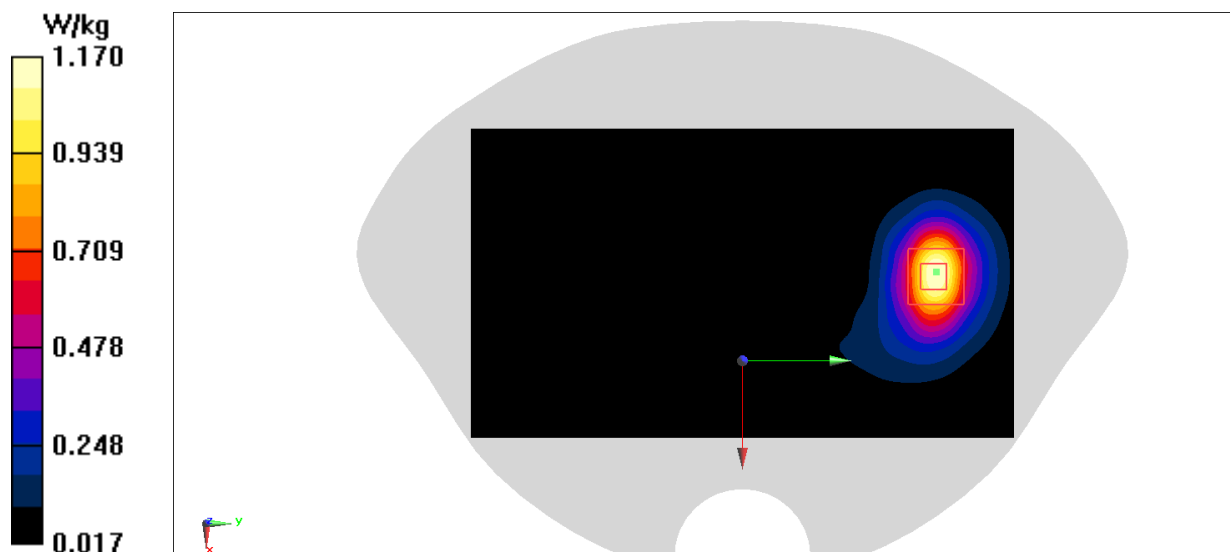
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.471 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.40 W/kg

**SAR(1 g) = 0.796 W/kg; SAR(10 g) = 0.431 W/kg**

Maximum value of SAR (measured) = 1.17 W/kg



## LTE B12 Head

Date: 10/20/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 704 \text{ MHz}$ ;  $\sigma = 0.802 \text{ S/m}$ ;  $\epsilon_r = 44.172$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band12 704 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

**Area Scan (81x141x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.240 W/kg

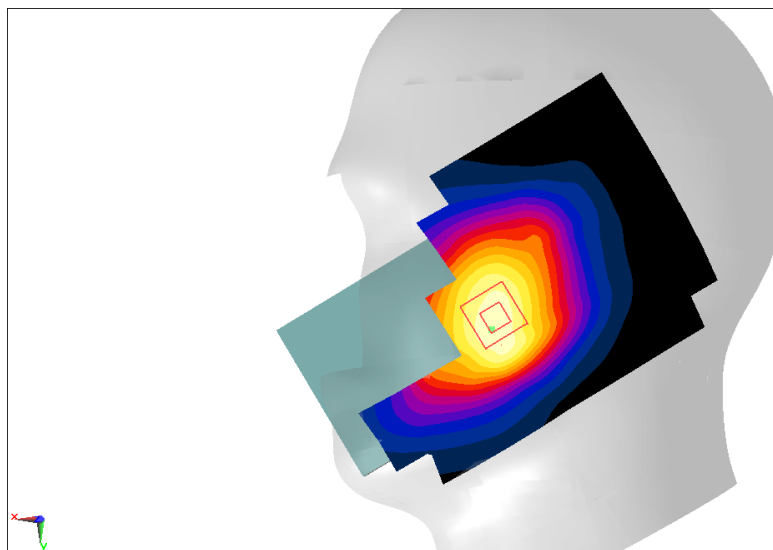
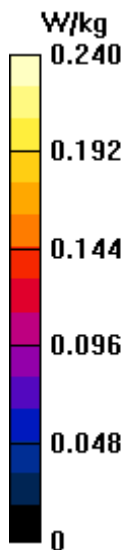
**Zoom Scan (6x6x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 5.380 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.261 W/kg

**SAR(1 g) = 0.207 W/kg; SAR(10 g) = 0.164 W/kg**

Maximum value of SAR (measured) = 0.241 W/kg



### LTE B12 Body

Date: 10/20/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 704 \text{ MHz}$ ;  $\sigma = 0.802 \text{ S/m}$ ;  $\epsilon_r = 44.172$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band12 704 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

**Area Scan (81x141x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.413 W/kg

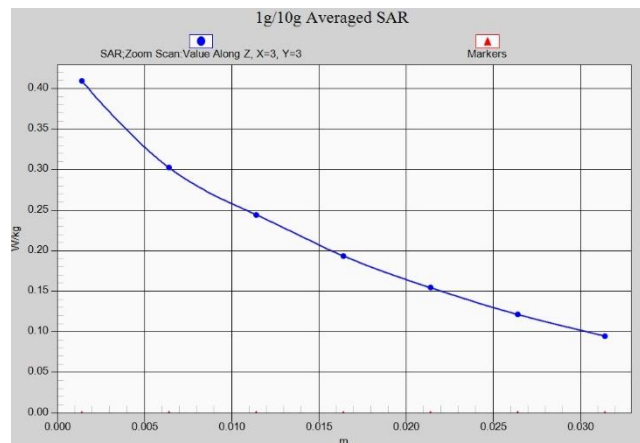
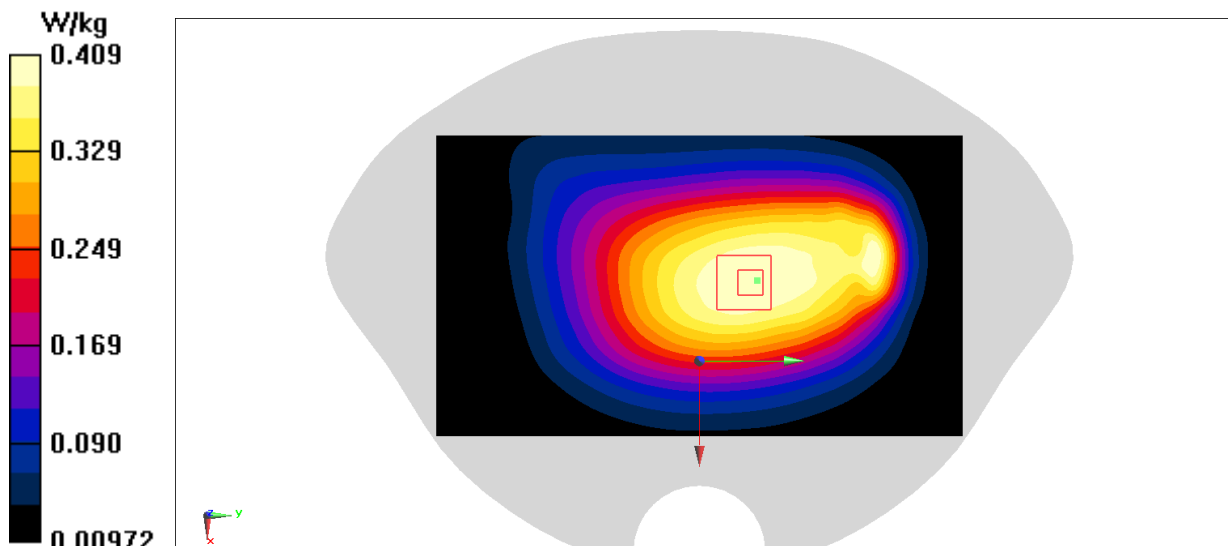
**Zoom Scan (7x11x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 22.61 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.488 W/kg

**SAR(1 g) = 0.338 W/kg; SAR(10 g) = 0.263 W/kg**

Maximum value of SAR (measured) = 0.409 W/kg



## LTE B25 Head

Date: 11/5/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1905$  MHz;  $\sigma = 1.495$  S/m;  $\epsilon_r = 40.679$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band25 1905 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.218 W/kg

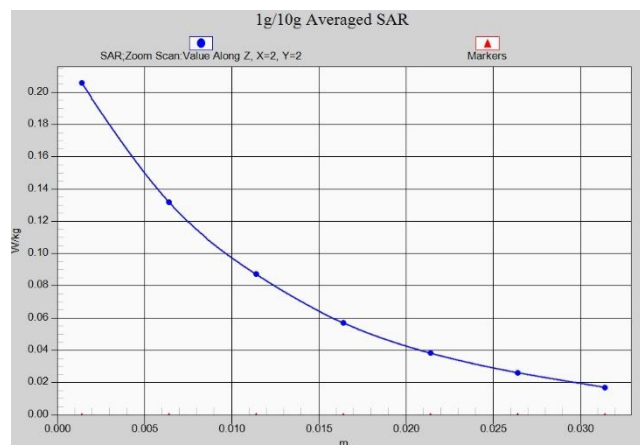
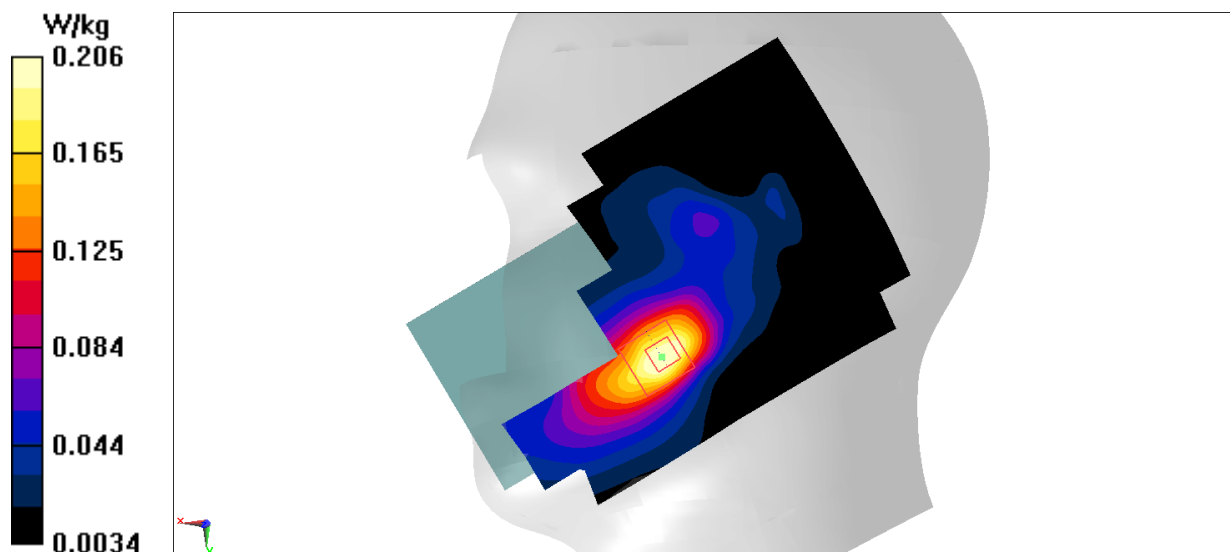
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.960 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.236 W/kg

**SAR(1 g) = 0.149 W/kg; SAR(10 g) = 0.089 W/kg**

Maximum value of SAR (measured) = 0.206 W/kg



## LTE B25 Body

Date: 11/5/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1860$  MHz;  $\sigma = 1.473$  S/m;  $\epsilon_r = 42.192$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band25 1860 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.58 W/kg

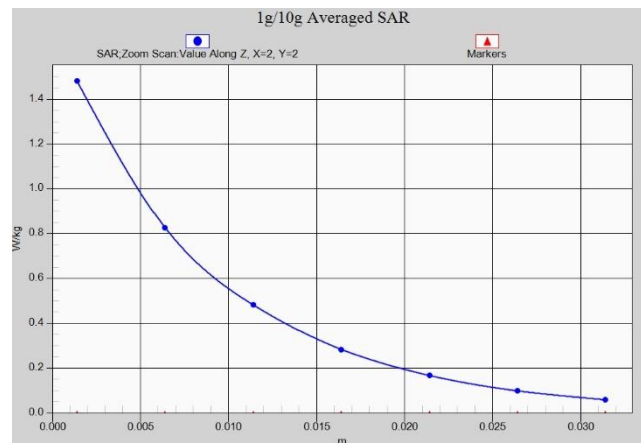
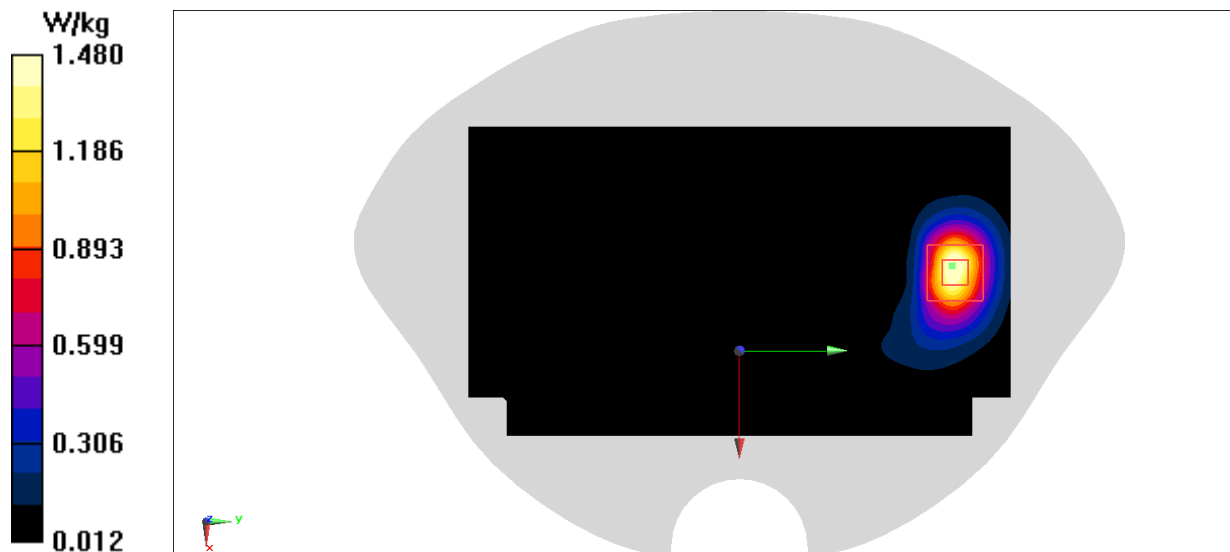
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.162 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 1.86 W/kg

**SAR(1 g) = 0.989 W/kg; SAR(10 g) = 0.500 W/kg**

Maximum value of SAR (measured) = 1.48 W/kg



### LTE B25 Body

Date: 11/5/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1860$  MHz;  $\sigma = 1.473$  S/m;  $\epsilon_r = 42.192$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band25 1860 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

**Area Scan (81x141x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

Maximum value of SAR (interpolated) = 1.54 W/kg

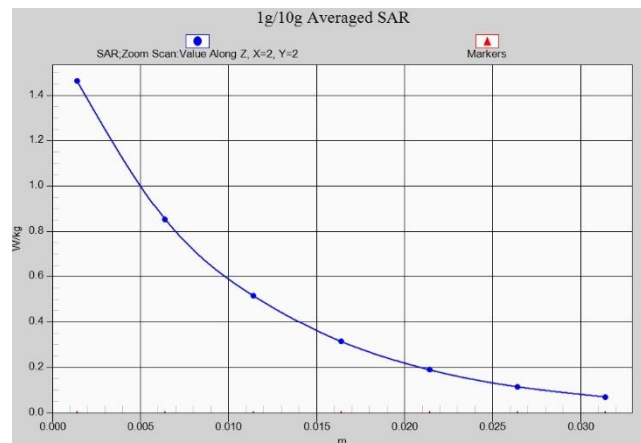
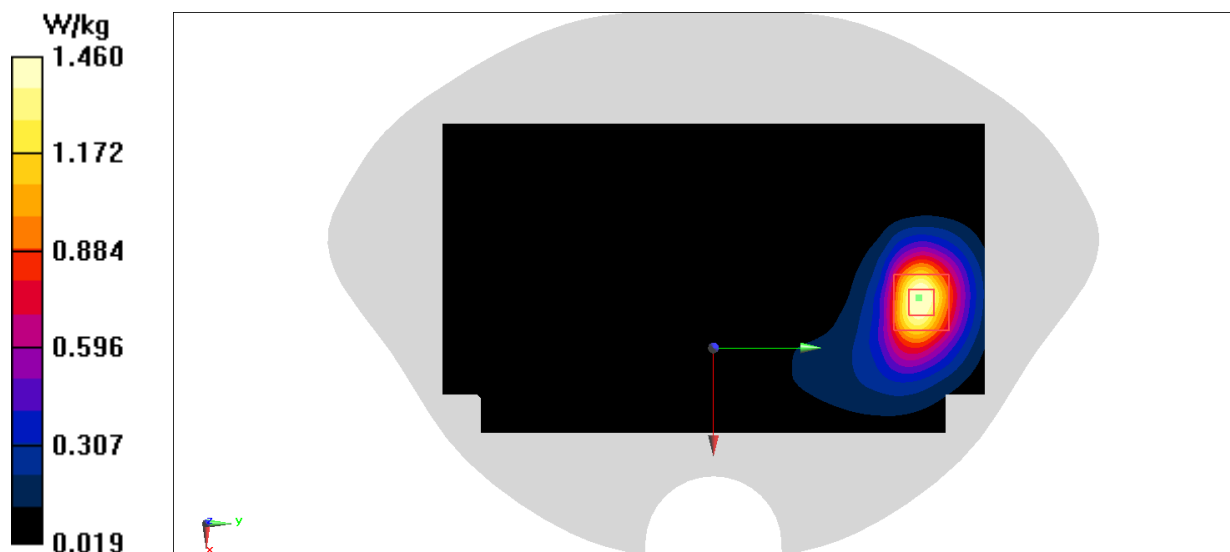
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 5.746 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.77 W/kg

**SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.548 W/kg**

Maximum value of SAR (measured) = 1.46 W/kg



## LTE B26 Head

Date: 10/20/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 831.5$  MHz;  $\sigma = 0.858$  S/m;  $\epsilon_r = 43.68$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band26 15M 831.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.372 W/kg

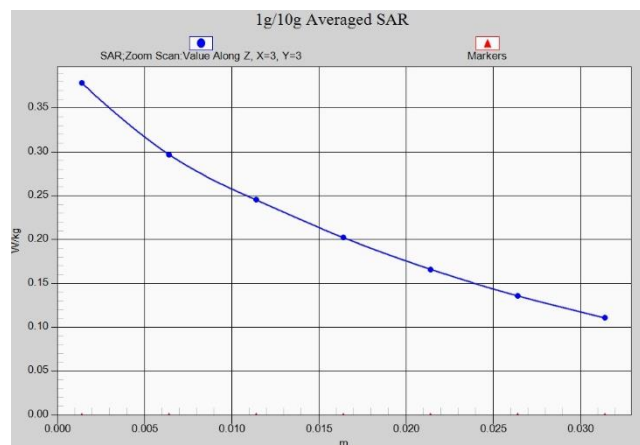
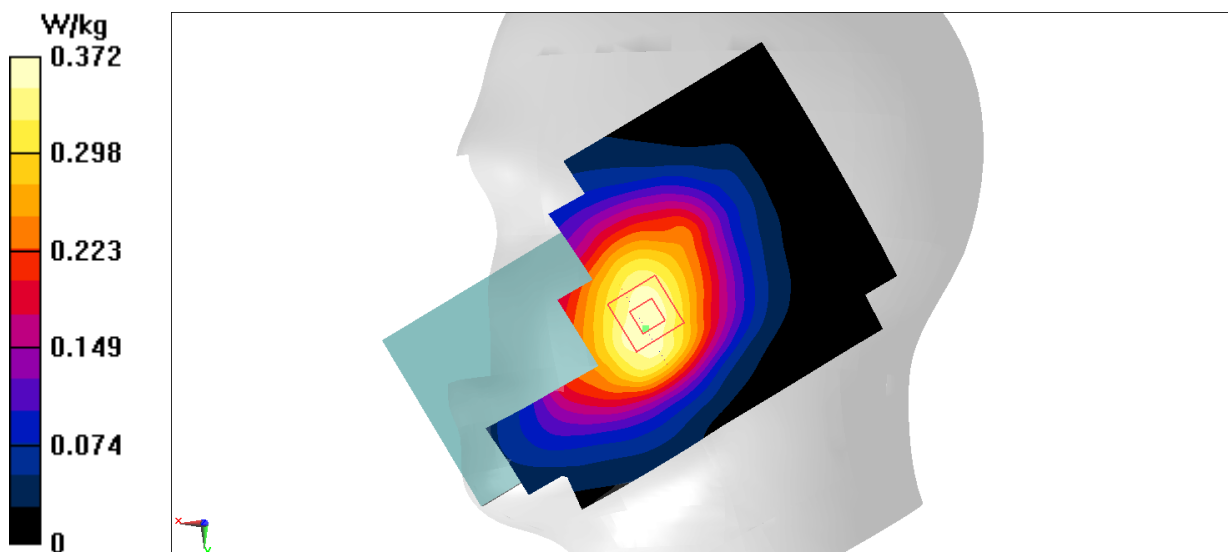
**Zoom Scan (6x6x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.847 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.411 W/kg

**SAR(1 g) = 0.321 W/kg; SAR(10 g) = 0.251 W/kg**

Maximum value of SAR (measured) = 0.379 W/kg



# LTE B26 Body

Date: 10/20/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 831.5$  MHz;  $\sigma = 0.858$  S/m;  $\epsilon_r = 43.68$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band26 15M 831.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.583 W/kg

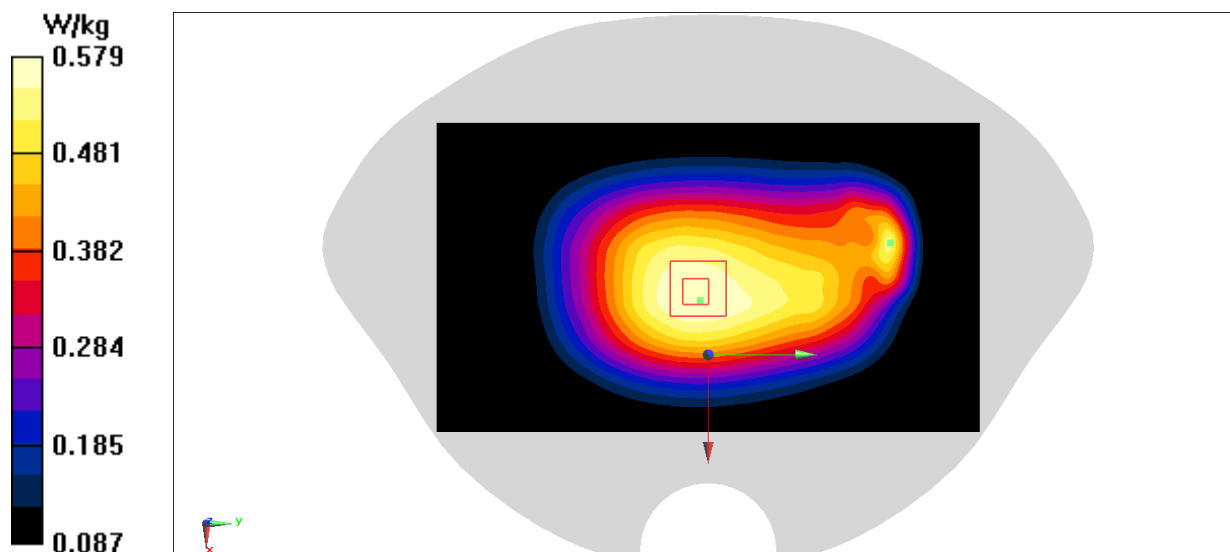
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 26.64 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.641 W/kg

**SAR(1 g) = 0.477 W/kg; SAR(10 g) = 0.368 W/kg**

Maximum value of SAR (measured) = 0.579 W/kg



## LTE B41 PC2 Head

Date: 11/11/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 2680$  MHz;  $\sigma = 2.121$  S/m;  $\epsilon_r = 38.986$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band41 2680 MHz Duty Cycle: 1:2.37

Probe: EX3DV4 - SN7548 ConvF(7.12, 7.12, 7.12)

**Area Scan (101x171x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.219 W/kg

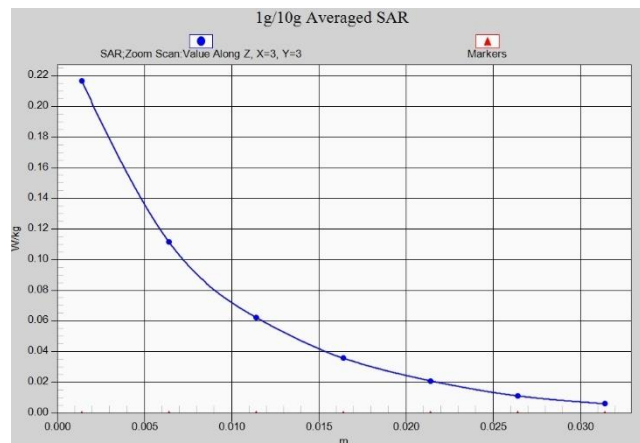
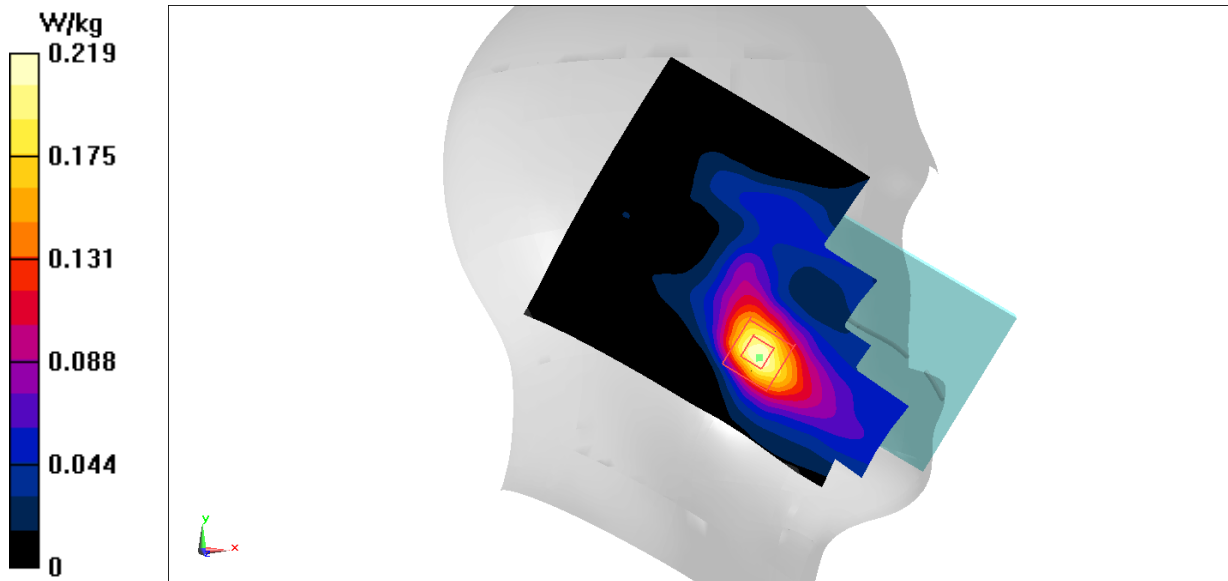
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.278 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.267 W/kg

**SAR(1 g) = 0.139 W/kg; SAR(10 g) = 0.072 W/kg**

Maximum value of SAR (measured) = 0.217 W/kg



### LTE B41 PC2 Body

Date: 11/11/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 2506$  MHz;  $\sigma = 1.962$  S/m;  $\epsilon_r = 39.401$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band41 2506 MHz Duty Cycle: 1:2.37

Probe: EX3DV4 - SN7548 ConvF(7.32, 7.32, 7.32)

**Area Scan (101x171x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.35 W/kg

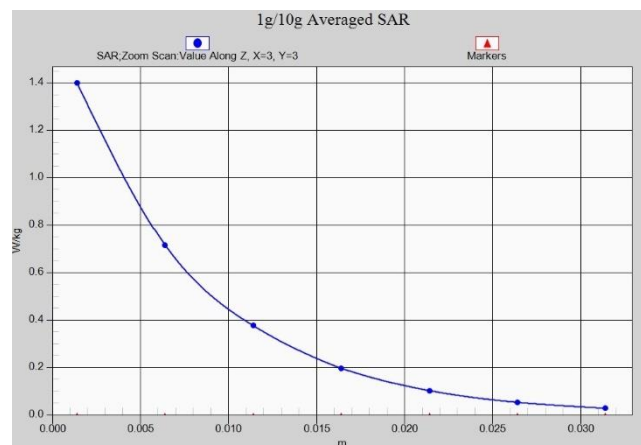
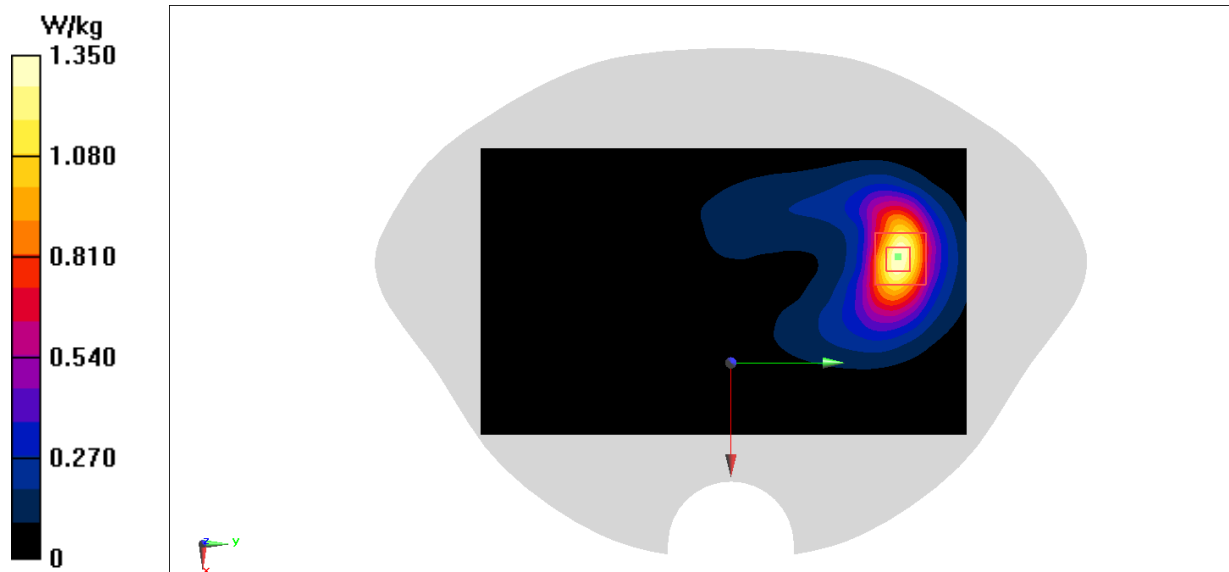
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.957 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.71 W/kg

**SAR(1 g) = 0.871 W/kg; SAR(10 g) = 0.431 W/kg**

Maximum value of SAR (measured) = 1.40 W/kg



### LTE B41 PC3 Head

Date: 11/11/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 2680$  MHz;  $\sigma = 2.121$  S/m;  $\epsilon_r = 38.986$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band41 2680 MHz Duty Cycle: 1:1.58

Probe: EX3DV4 - SN7548 ConvF(7.12, 7.12, 7.12)

**Area Scan (101x171x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.167 W/kg

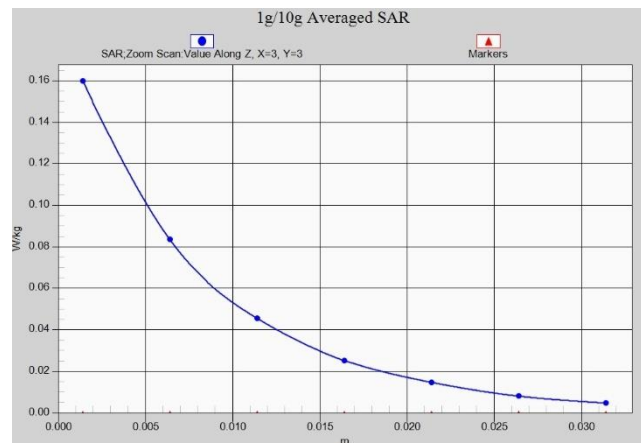
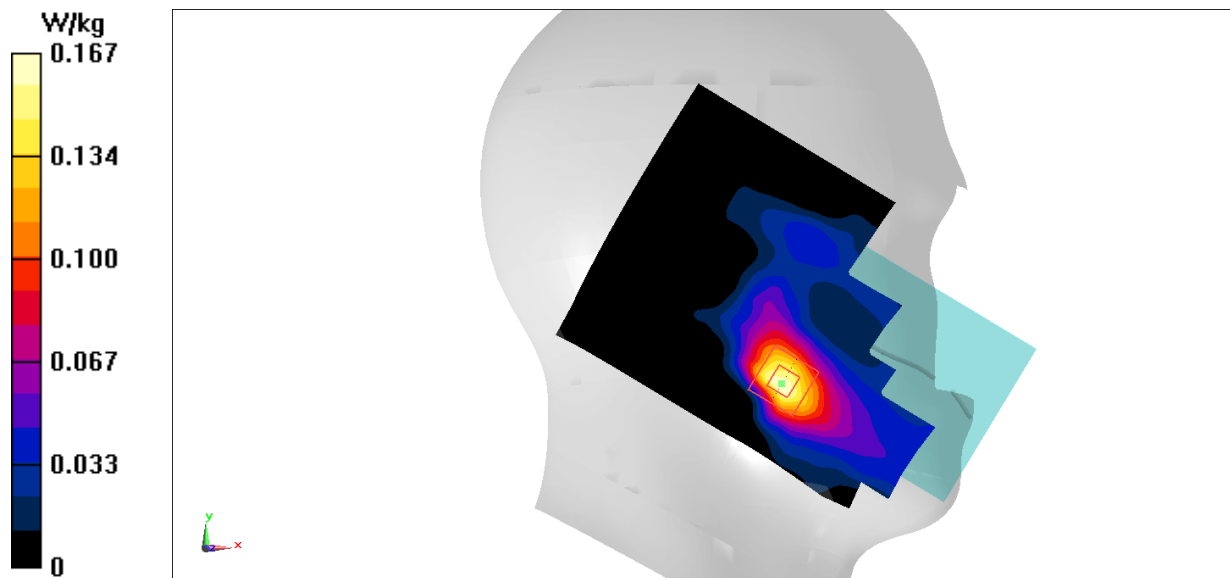
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.231 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.196 W/kg

**SAR(1 g) = 0.102 W/kg; SAR(10 g) = 0.053 W/kg**

Maximum value of SAR (measured) = 0.160 W/kg



### LTE B41 PC3 Body

Date: 11/11/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 2680$  MHz;  $\sigma = 2.136$  S/m;  $\epsilon_r = 40.446$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band41 2680 MHz Duty Cycle: 1:1.58

Probe: EX3DV4 - SN7548 ConvF(7.12, 7.12, 7.12)

**Area Scan (101x171x1):** Interpolated grid:  $dx=1.200$  mm,  $dy=1.200$  mm

Maximum value of SAR (interpolated) = 0.807 W/kg

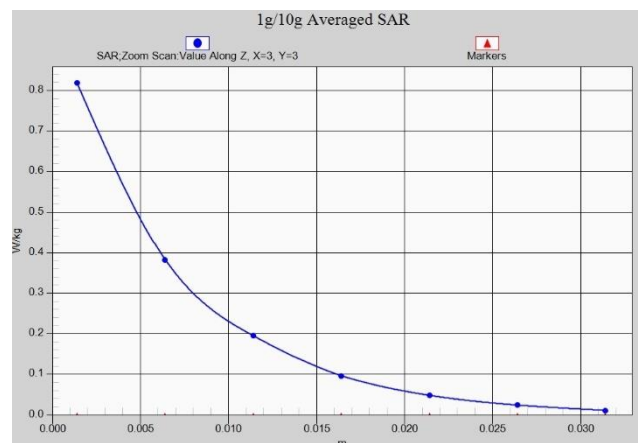
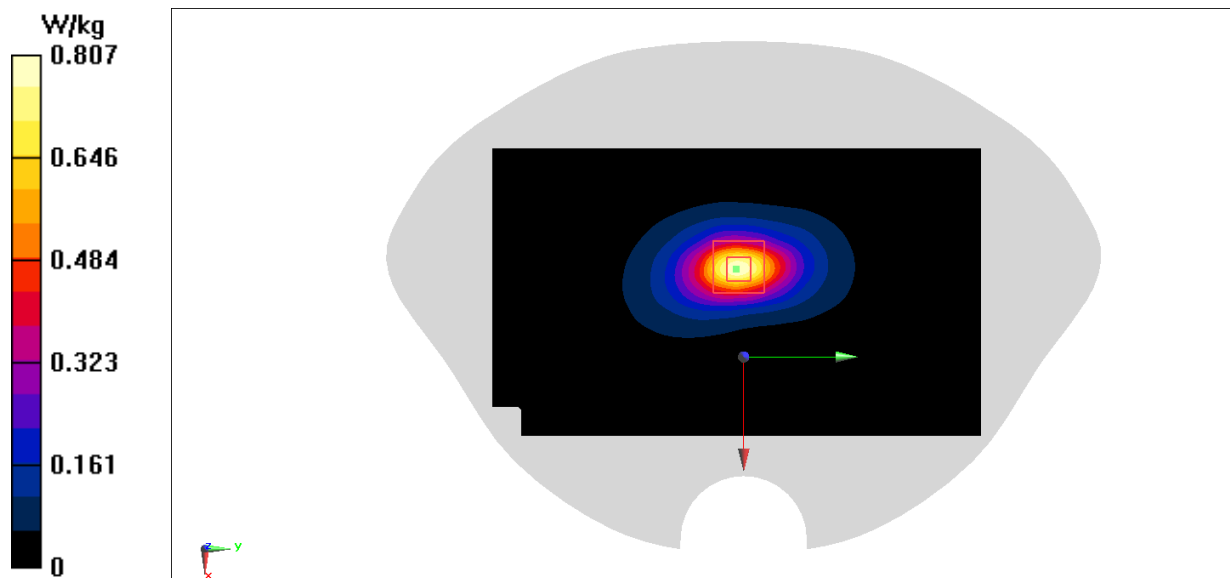
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 7.343 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 1.04 W/kg

**SAR(1 g) = 0.485 W/kg; SAR(10 g) = 0.227 W/kg**

Maximum value of SAR (measured) = 0.818 W/kg



### LTE B66 Head

Date: 10/26/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1720$  MHz;  $\sigma = 1.371$  S/m;  $\epsilon_r = 41.155$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band66 1720 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(8.13, 8.13, 8.13)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.224 W/kg

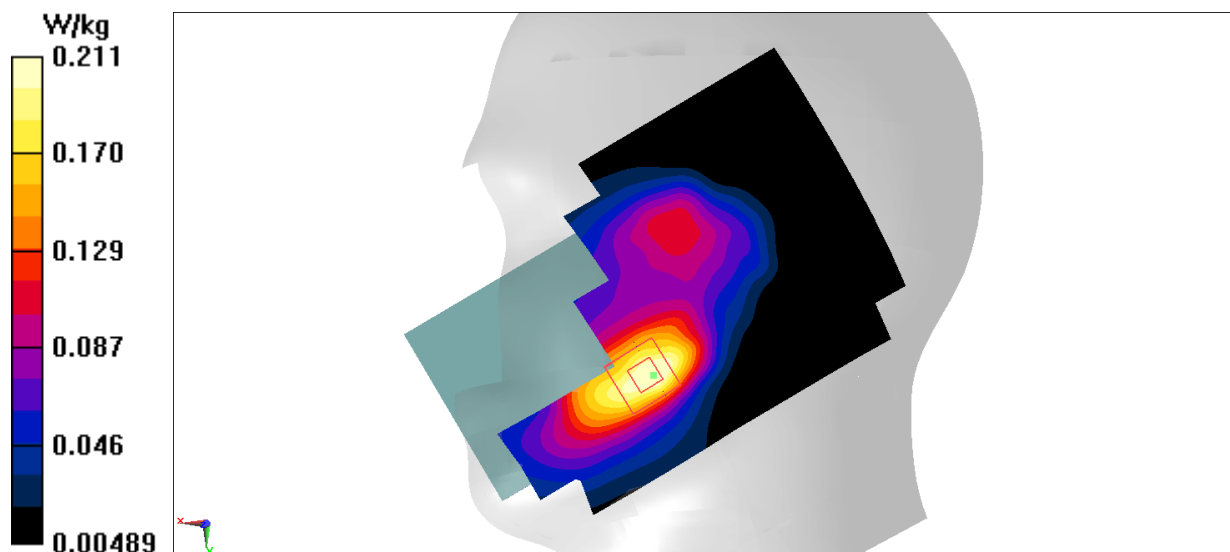
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.244 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.242 W/kg

**SAR(1 g) = 0.157 W/kg; SAR(10 g) = 0.101 W/kg**

Maximum value of SAR (measured) = 0.211 W/kg



### LTE B66 Body

Date: 10/26/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1745$  MHz;  $\sigma = 1.389$  S/m;  $\epsilon_r = 41.055$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band66 1745 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(8.13, 8.13, 8.13)

**Area Scan (81x141x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

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

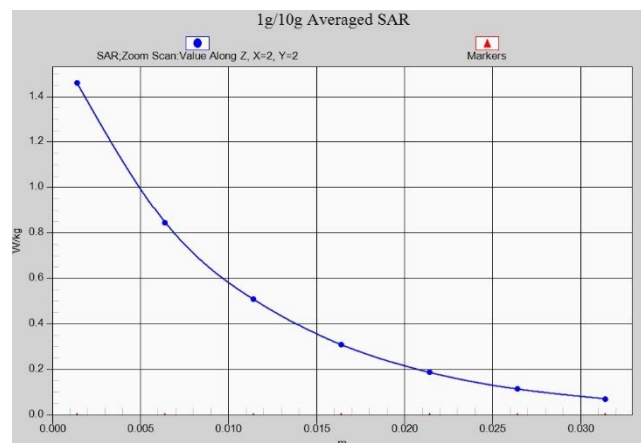
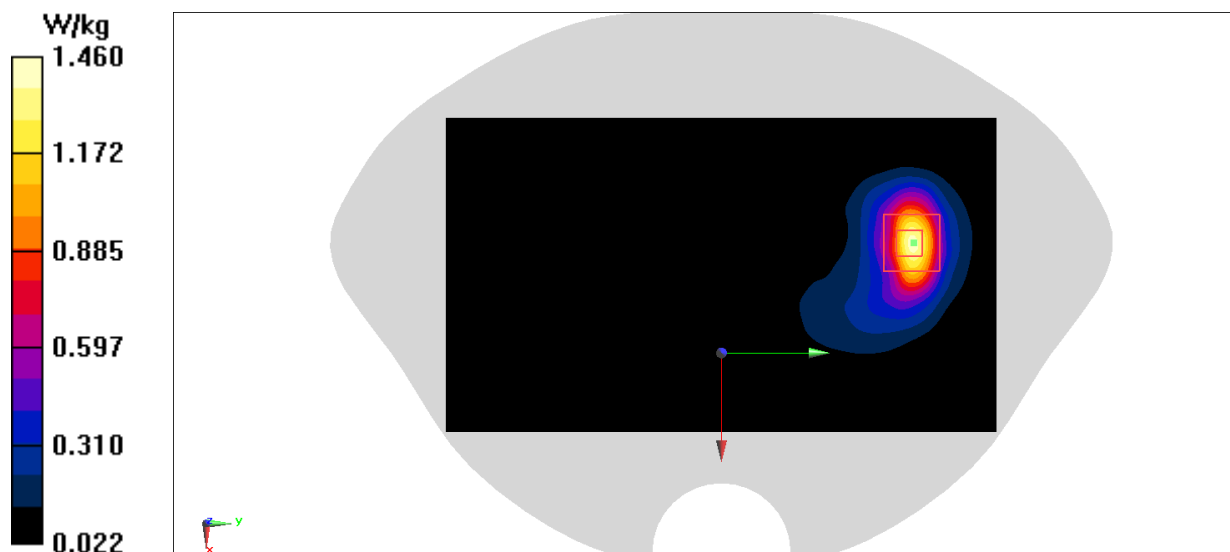
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 5.996 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 1.79 W/kg

**SAR(1 g) = 0.985 W/kg; SAR(10 g) = 0.503 W/kg**

Maximum value of SAR (measured) = 1.46 W/kg



### LTE B66 Body

Date: 10/26/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 1745$  MHz;  $\sigma = 1.389$  S/m;  $\epsilon_r = 41.055$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band66 1745 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(8.13, 8.13, 8.13)

**Area Scan (81x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.914 W/kg

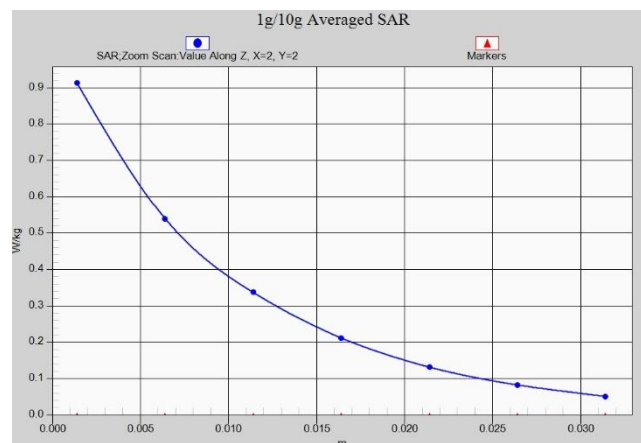
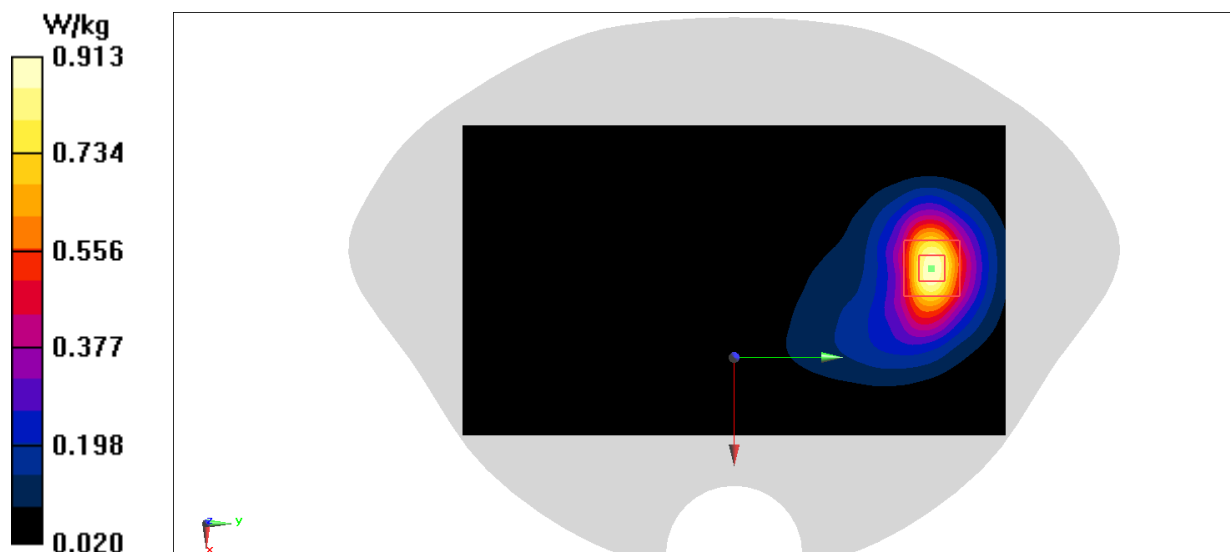
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.747 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.07 W/kg

**SAR(1 g) = 0.626 W/kg; SAR(10 g) = 0.351 W/kg**

Maximum value of SAR (measured) = 0.913 W/kg



### LTE B71 Head

Date: 10/20/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 683 \text{ MHz}$ ;  $\sigma = 0.794 \text{ S/m}$ ;  $\epsilon_r = 44.263$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: LTE Band71 683 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

**Area Scan (81x141x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.232 W/kg

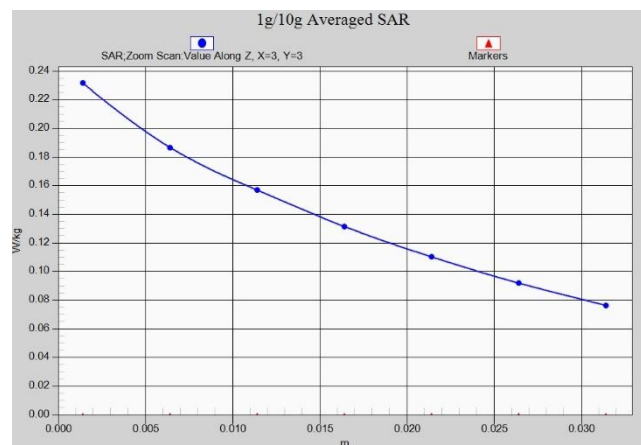
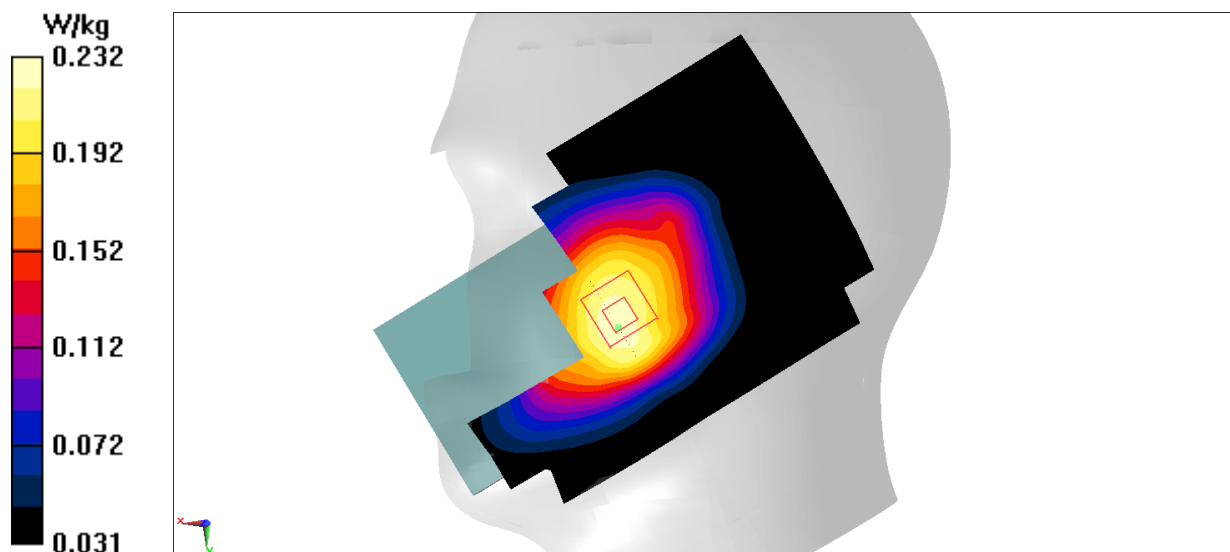
**Zoom Scan (6x6x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 5.145 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.249 W/kg

**SAR(1 g) = 0.201 W/kg; SAR(10 g) = 0.161 W/kg**

Maximum value of SAR (measured) = 0.232 W/kg



### LTE B71 Body

Date: 10/20/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 683 \text{ MHz}$ ;  $\sigma = 0.794 \text{ S/m}$ ;  $\epsilon_r = 44.263$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $23.3^\circ\text{C}$  Liquid Temperature:  $22.5^\circ\text{C}$

Communication System: LTE Band71 683 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

**Area Scan (81x141x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) =  $0.512 \text{ W/kg}$

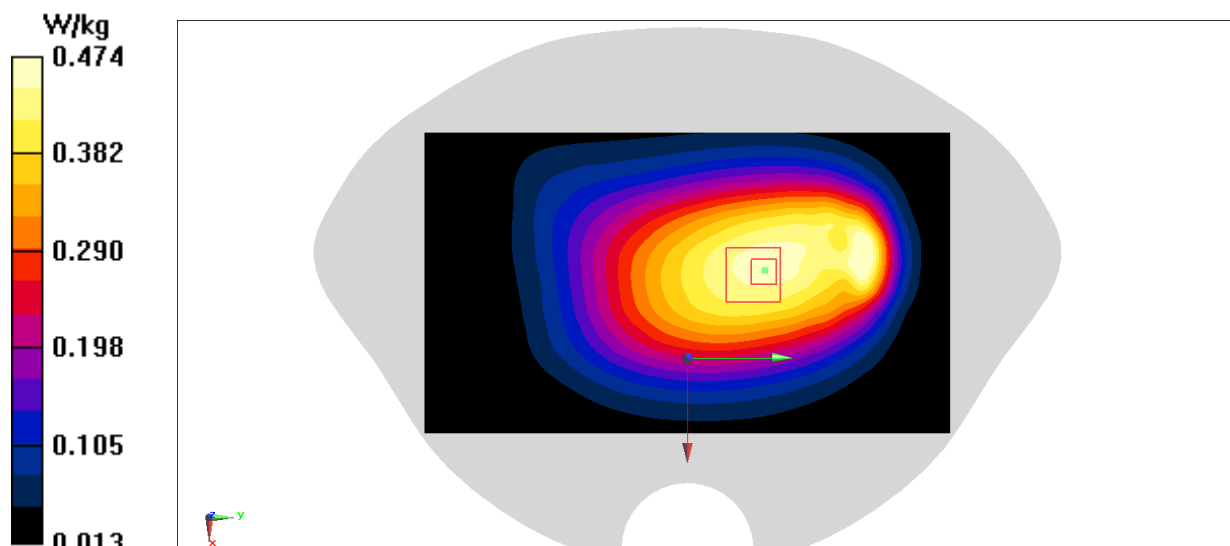
**Zoom Scan (6x10x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $22.74 \text{ V/m}$ ; Power Drift =  $-0.04 \text{ dB}$

Peak SAR (extrapolated) =  $0.599 \text{ W/kg}$

**SAR(1 g) =  $0.374 \text{ W/kg}$ ; SAR(10 g) =  $0.287 \text{ W/kg}$**

Maximum value of SAR (measured) =  $0.474 \text{ W/kg}$



## WLAN 2.4G Head

Date: 11/8/2022

Electronics: DAE4 Sn777

Medium: H700-6000M

Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.846$  S/m;  $\epsilon_r = 40.665$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: Wlan 2450 2462 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7673 ConvF(7.57, 7.57, 7.57)

**Area Scan (101x171x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.82 W/kg

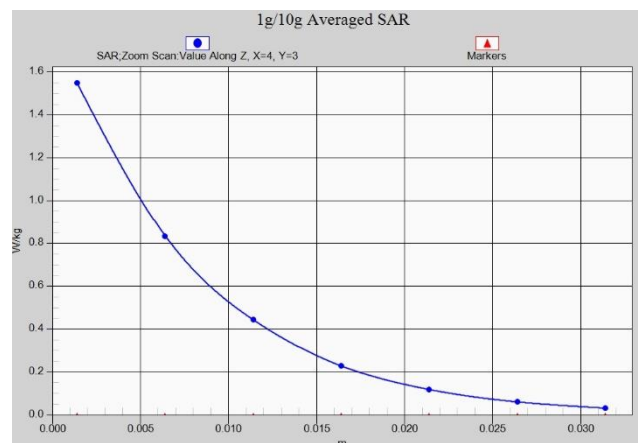
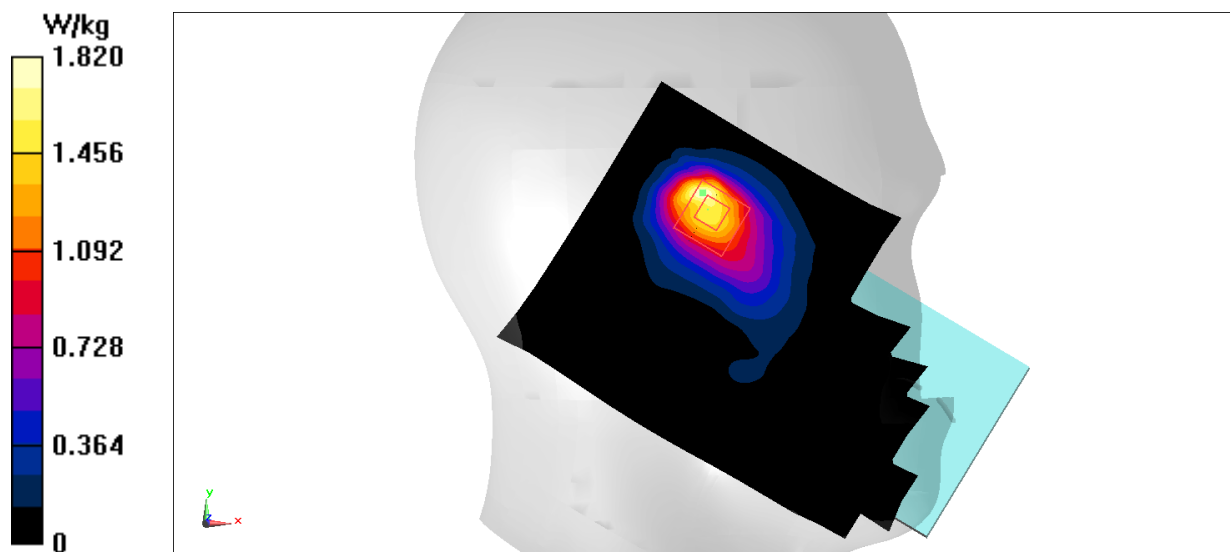
**Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.227 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.87 W/kg

**SAR(1 g) = 0.985 W/kg; SAR(10 g) = 0.514 W/kg**

Maximum value of SAR (measured) = 1.55 W/kg



## WLAN 2.4G Body

Date: 11/8/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.901$  S/m;  $\epsilon_r = 39.542$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: wifi 2450 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(7.32, 7.32, 7.32)

**Area Scan (101x171x1):** Interpolated grid:  $dx=1.200$  mm,  $dy=1.200$  mm

Maximum value of SAR (interpolated) = 0.812 W/kg

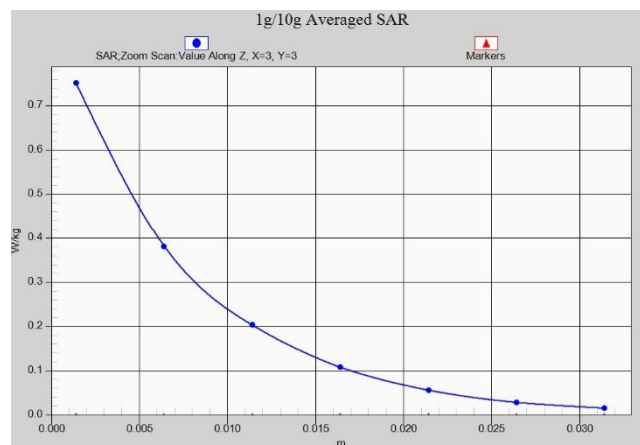
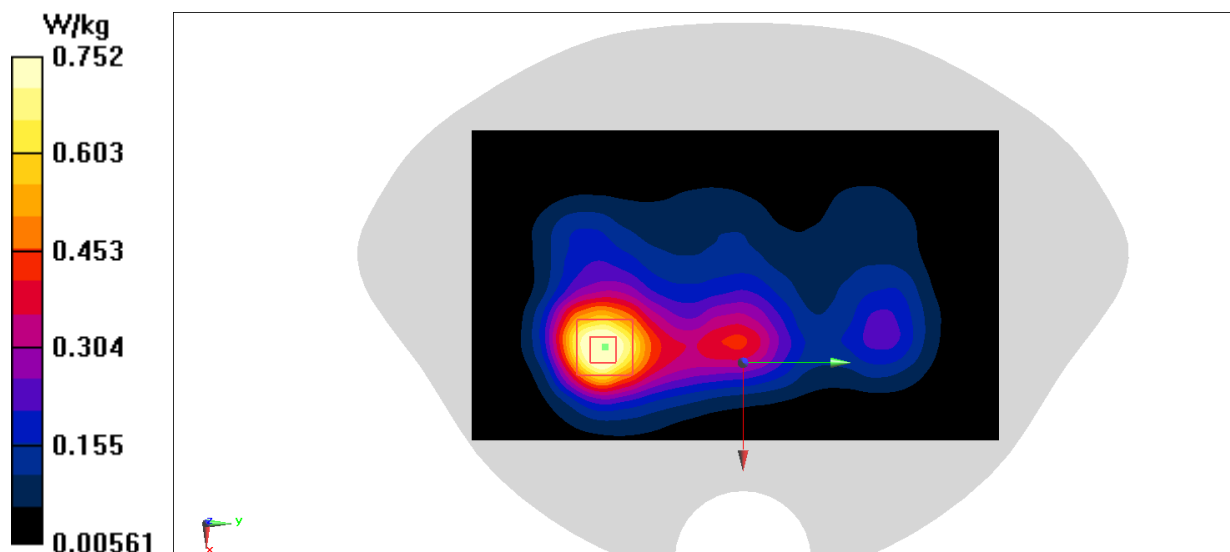
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 11.31 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.943 W/kg

**SAR(1 g) = 0.492 W/kg; SAR(10 g) = 0.264 W/kg**

Maximum value of SAR (measured) = 0.752 W/kg



## WLAN 2.4G Body

Date: 11/8/2022

Electronics: DAE4 Sn1331

Medium: H700-6000M

Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.901$  S/m;  $\epsilon_r = 39.542$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: wifi 2450 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN7548 ConvF(7.32, 7.32, 7.32)

**Area Scan (101x171x1):** Interpolated grid:  $dx=1.200$  mm,  $dy=1.200$  mm

Maximum value of SAR (interpolated) = 0.316 W/kg

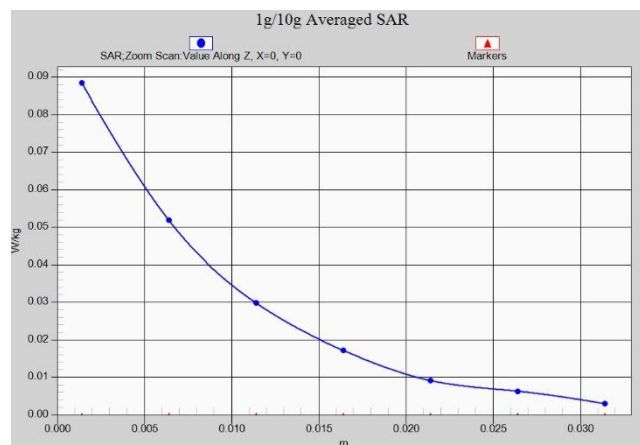
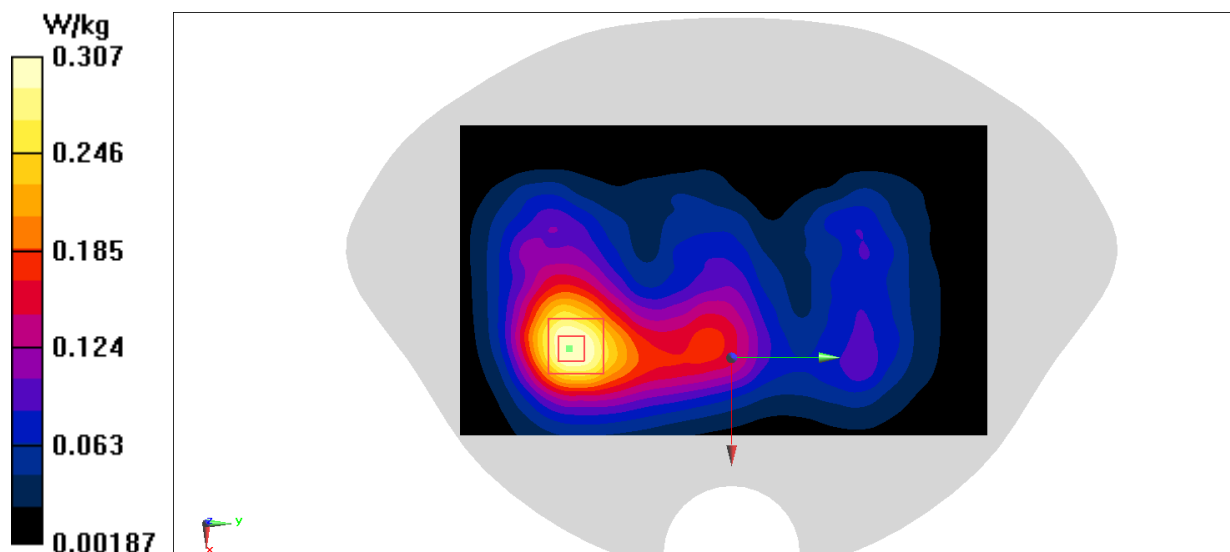
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 7.806 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.377 W/kg

**SAR(1 g) = 0.199 W/kg; SAR(10 g) = 0.111 W/kg**

Maximum value of SAR (measured) = 0.307 W/kg



## BT Head

Date: 11/8/2022

Electronics: DAE4 Sn1331

Medium: H650-7000M

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.905$  S/m;  $\epsilon_r = 40.379$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: BT 2480 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.32, 7.32, 7.32)

**Area Scan (101x171x1):** Interpolated grid:  $dx=1.200$  mm,  $dy=1.200$  mm

Maximum value of SAR (interpolated) = 0.135 W/kg

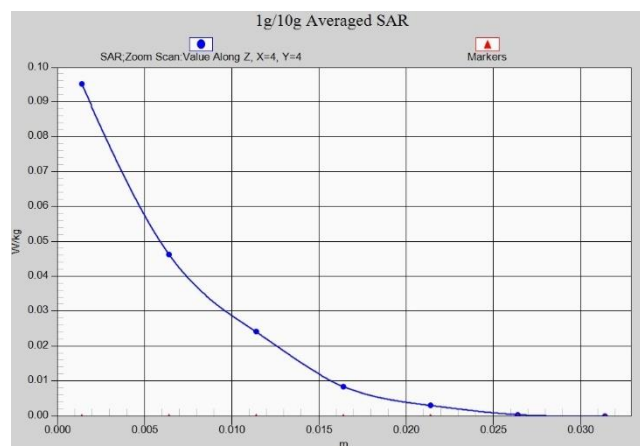
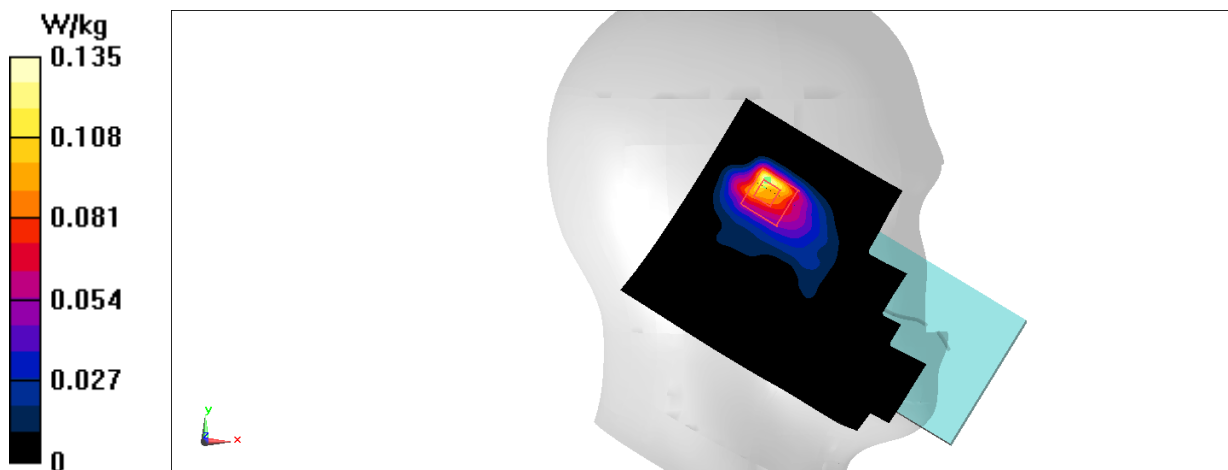
**Zoom Scan (8x8x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 3.250 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.119 W/kg

**SAR(1 g) = 0.058 W/kg; SAR(10 g) = 0.027 W/kg**

Maximum value of SAR (measured) = 0.0951 W/kg



### BT body

Date: 11/8/2022

Electronics: DAE4 Sn1331

Medium: H650-7000M

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.905$  S/m;  $\epsilon_r = 40.379$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: BT 2480 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.32, 7.32, 7.32)

**Area Scan (101x171x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0641 W/kg

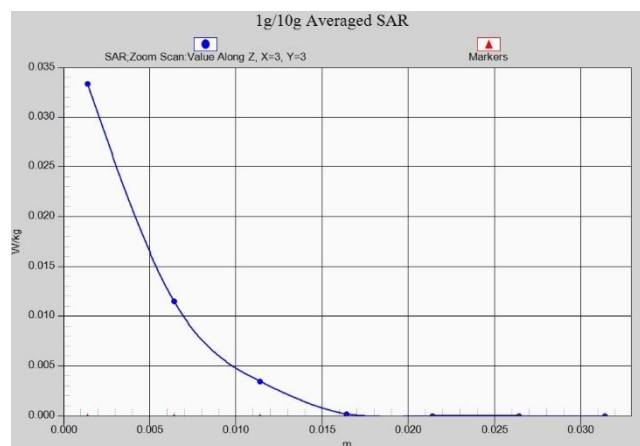
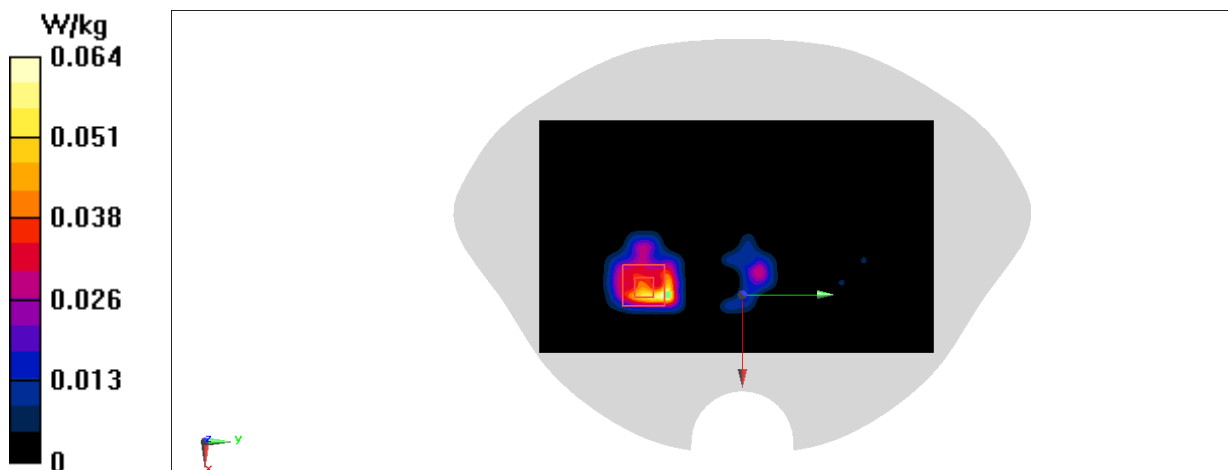
**Zoom Scan (7x10x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.286 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.0430 W/kg

**SAR(1 g) = 0.017 W/kg; SAR(10 g) = 0.00626 W/kg**

Maximum value of SAR (measured) = 0.0333 W/kg



## ANNEX B System Verification Results

### 750MHz

Date: 10/20/2022

Electronics: DAE4 Sn1331

Medium: Head 750MHz

Medium parameters used:  $f = 750\text{MHz}$ ;  $\sigma = 0.877 \text{ mho/m}$ ;  $\epsilon_r = 42.92$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.2^\circ\text{C}$  Liquid Temperature:  $22^\circ\text{C}$

Communication System: CW Frequency: 750MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(10.3,10.3,10.3)

**System Validation /Area Scan (81x191x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Reference Value =  $63.14 \text{ V/m}$ ; Power Drift = 0.03

**Fast SAR: SAR(1 g) =  $2.11 \text{ W/kg}$ ; SAR(10 g) =  $1.37 \text{ W/kg}$**

Maximum value of SAR (interpolated) =  $2.77 \text{ W/kg}$

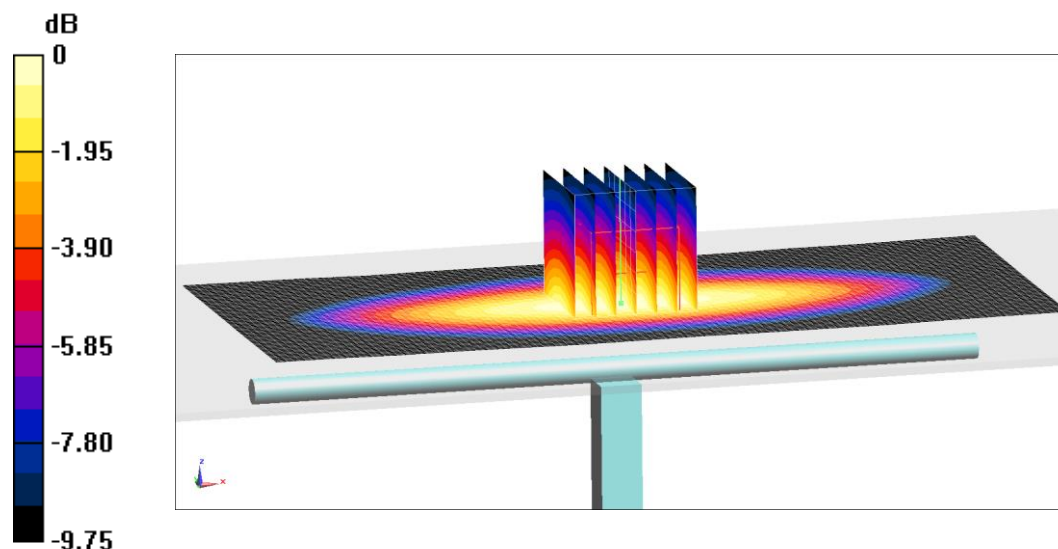
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $63.14 \text{ V/m}$ ; Power Drift = 0.03

Peak SAR (extrapolated) =  $3.21 \text{ W/kg}$

**SAR(1 g) =  $2.08 \text{ W/kg}$ ; SAR(10 g) =  $1.35 \text{ W/kg}$**

Maximum value of SAR (measured) =  $2.84 \text{ W/kg}$



0 dB =  $2.84 \text{ W/kg}$  =  $4.53 \text{ dB W/kg}$

**Fig.B.1 validation 750MHz 250mW**

## 900MHz

Date: 10/22/2022

Electronics: DAE4 Sn1331

Medium: Head 900MHz

Medium parameters used:  $f = 900\text{MHz}$ ;  $\sigma = 0.955 \text{ mho/m}$ ;  $\epsilon_r = 40.97$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.2^\circ\text{C}$  Liquid Temperature:  $22^\circ\text{C}$

Communication System: CW Frequency: 900MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(9.81,9.81,9.81)

**System Validation /Area Scan (81x191x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Reference Value =  $64.3 \text{ V/m}$ ; Power Drift =  $0.12$

**Fast SAR: SAR(1 g) =  $2.68 \text{ W/kg}$ ; SAR(10 g) =  $1.65 \text{ W/kg}$**

Maximum value of SAR (interpolated) =  $3.63 \text{ W/kg}$

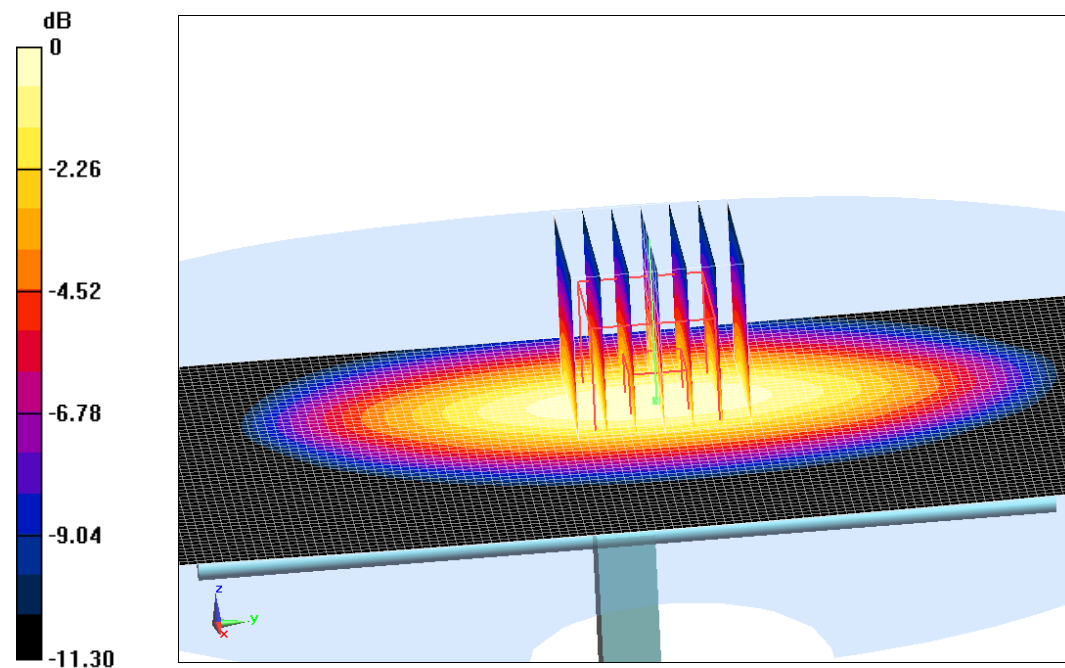
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $64.3 \text{ V/m}$ ; Power Drift =  $0.12 \text{ dB}$

Peak SAR (extrapolated) =  $4.04 \text{ W/kg}$

**SAR(1 g) =  $2.72 \text{ W/kg}$ ; SAR(10 g) =  $1.71 \text{ W/kg}$**

Maximum value of SAR (measured) =  $3.7 \text{ W/kg}$



$0 \text{ dB} = 3.7 \text{ W/kg} = 5.68 \text{ dB W/kg}$

**Fig.B.2 validation 900MHz 250mW**

## 1800MHz

Date: 10/26/2022

Electronics: DAE4 Sn1331

Medium: Head 1800MHz

Medium parameters used:  $f = 1800\text{MHz}$ ;  $\sigma = 1.403 \text{ mho/m}$ ;  $\epsilon_r = 38.96$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.2^\circ\text{C}$  Liquid Temperature:  $22^\circ\text{C}$

Communication System: CW Frequency: 1800MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(8.13,8.13,8.13)

**System Validation /Area Scan (81x191x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Reference Value =  $107.29 \text{ V/m}$ ; Power Drift =  $-0.01$

**Fast SAR: SAR(1 g) =  $9.85 \text{ W/kg}$ ; SAR(10 g) =  $5.16 \text{ W/kg}$**

Maximum value of SAR (interpolated) =  $15.03 \text{ W/kg}$

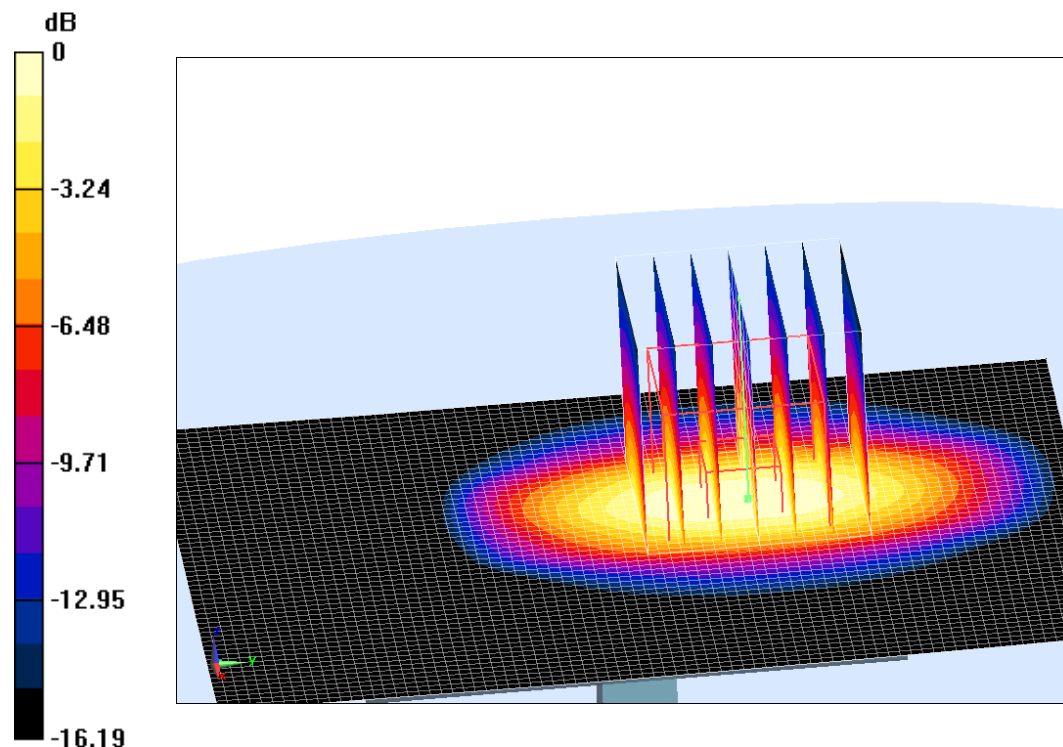
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $107.29 \text{ V/m}$ ; Power Drift =  $-0.01 \text{ dB}$

Peak SAR (extrapolated) =  $18.62 \text{ W/kg}$

**SAR(1 g) =  $9.87 \text{ W/kg}$ ; SAR(10 g) =  $5.12 \text{ W/kg}$**

Maximum value of SAR (measured) =  $14.92 \text{ W/kg}$



0 dB =  $14.92 \text{ W/kg}$  =  $11.74 \text{ dB W/kg}$

**Fig.B.3 validation 1800MHz 250mW**

## 1900MHz

Date: 11/5/2022

Electronics: DAE4 Sn1331

Medium: Head 1900MHz

Medium parameters used:  $f = 1900\text{MHz}$ ;  $\sigma = 1.439 \text{ mho/m}$ ;  $\epsilon_r = 39.62$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.2^\circ\text{C}$  Liquid Temperature:  $22^\circ\text{C}$

Communication System: CW Frequency:  $1900\text{MHz}$  Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.8,7.8,7.8)

**System Validation /Area Scan (81x191x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Reference Value =  $108.41 \text{ V/m}$ ; Power Drift =  $-0.15 \text{ dB}$

**Fast SAR: SAR(1 g) =  $9.87 \text{ W/kg}$ ; SAR(10 g) =  $5.12 \text{ W/kg}$**

Maximum value of SAR (interpolated) =  $15.32 \text{ W/kg}$

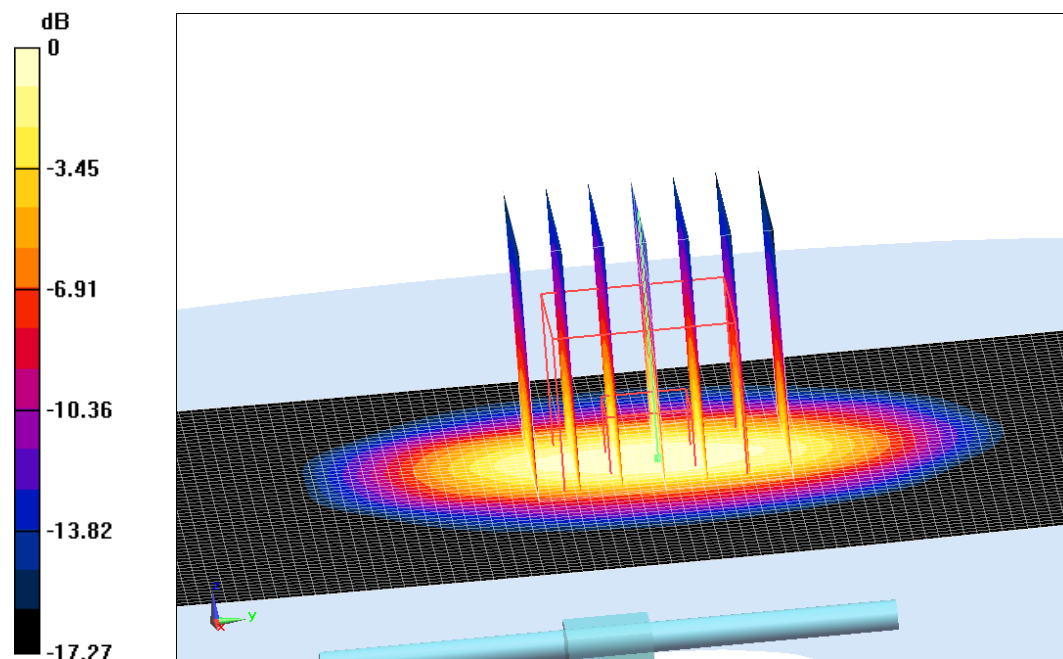
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $108.41 \text{ V/m}$ ; Power Drift =  $-0.15 \text{ dB}$

Peak SAR (extrapolated) =  $18.36 \text{ W/kg}$

**SAR(1 g) =  $9.88 \text{ W/kg}$ ; SAR(10 g) =  $5.15 \text{ W/kg}$**

Maximum value of SAR (measured) =  $15.11 \text{ W/kg}$



0 dB =  $15.11 \text{ W/kg}$  =  $11.79 \text{ dB W/kg}$

**Fig.B.4 validation 1900MHz 250mW**

## 2450MHz

Date: 11/8/2022

Electronics: DAE4 Sn1331

Medium: Head 2450MHz

Medium parameters used:  $f = 2450\text{MHz}$ ;  $\sigma = 1.841 \text{ mho/m}$ ;  $\epsilon_r = 38.64$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.2^\circ\text{C}$  Liquid Temperature:  $22^\circ\text{C}$

Communication System: CW Frequency: 2450MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.32,7.32,7.32)

**System Validation /Area Scan (81x191x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Reference Value =  $114.55 \text{ V/m}$ ; Power Drift =  $-0.08 \text{ dB}$

**Fast SAR: SAR(1 g) =  $13.32 \text{ W/kg}$ ; SAR(10 g) =  $6.25 \text{ W/kg}$**

Maximum value of SAR (interpolated) =  $21.89 \text{ W/kg}$

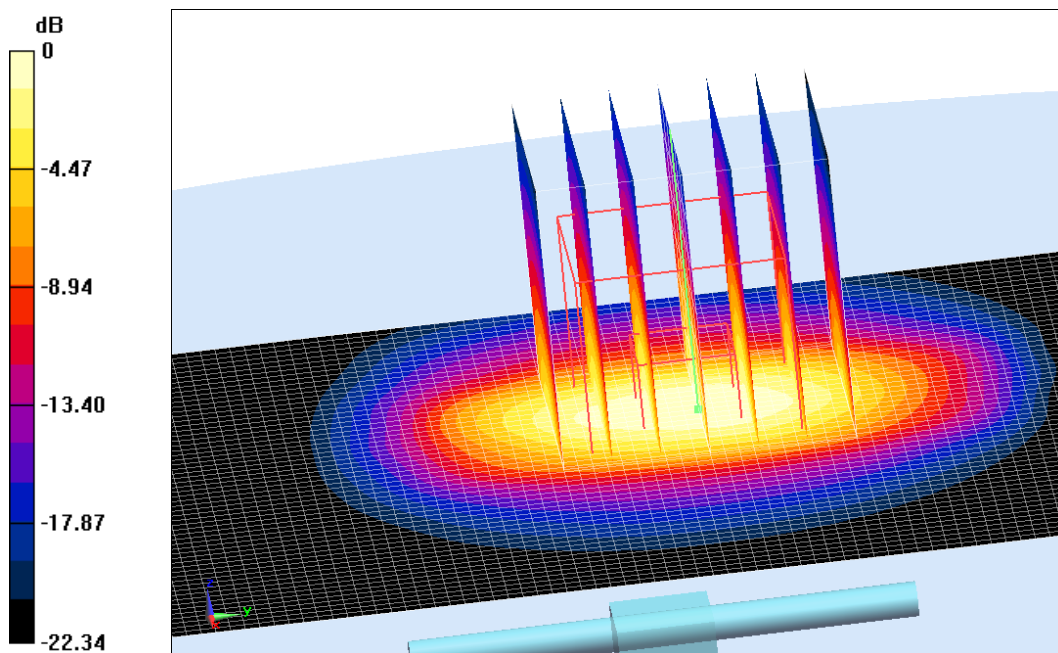
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $114.55 \text{ V/m}$ ; Power Drift =  $-0.08 \text{ dB}$

Peak SAR (extrapolated) =  $26.23 \text{ W/kg}$

**SAR(1 g) =  $13.37 \text{ W/kg}$ ; SAR(10 g) =  $6.28 \text{ W/kg}$**

Maximum value of SAR (measured) =  $21.84 \text{ W/kg}$



0 dB =  $21.84 \text{ W/kg}$  =  $13.39 \text{ dB W/kg}$

**Fig.B.5 validation 2450MHz 250mW**

## 2600MHz

Date: 11/11/2022

Electronics: DAE4 Sn1331

Medium: Head 2600MHz

Medium parameters used:  $f = 2600\text{MHz}$ ;  $\sigma = 1.974 \text{ mho/m}$ ;  $\epsilon_r = 38.74$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.2^\circ\text{C}$  Liquid Temperature:  $22^\circ\text{C}$

Communication System: CW Frequency: 2600MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.12,7.12,7.12)

**System Validation /Area Scan (81x191x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Reference Value =  $122.37 \text{ V/m}$ ; Power Drift =  $-0.09 \text{ dB}$

**Fast SAR: SAR(1 g) =  $13.85 \text{ W/kg}$ ; SAR(10 g) =  $6.24 \text{ W/kg}$**

Maximum value of SAR (interpolated) =  $24.19 \text{ W/kg}$

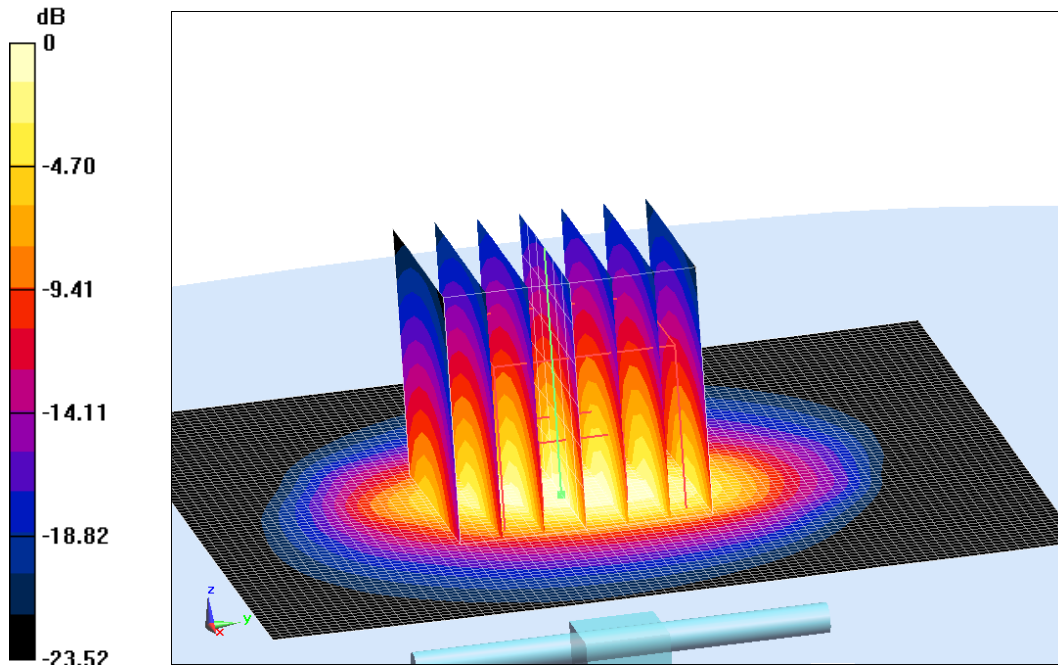
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $122.37 \text{ V/m}$ ; Power Drift =  $-0.09 \text{ dB}$

Peak SAR (extrapolated) =  $29.49 \text{ W/kg}$

**SAR(1 g) =  $13.91 \text{ W/kg}$ ; SAR(10 g) =  $6.26 \text{ W/kg}$**

Maximum value of SAR (measured) =  $24.36 \text{ W/kg}$



$0 \text{ dB} = 24.36 \text{ W/kg} = 13.87 \text{ dB W/kg}$

**Fig.B.6 validation 2600MHz 250mW**

The SAR system verification must be required that the area scan estimated 1-g SAR is within 3% of the zoom scan 1-g SAR.

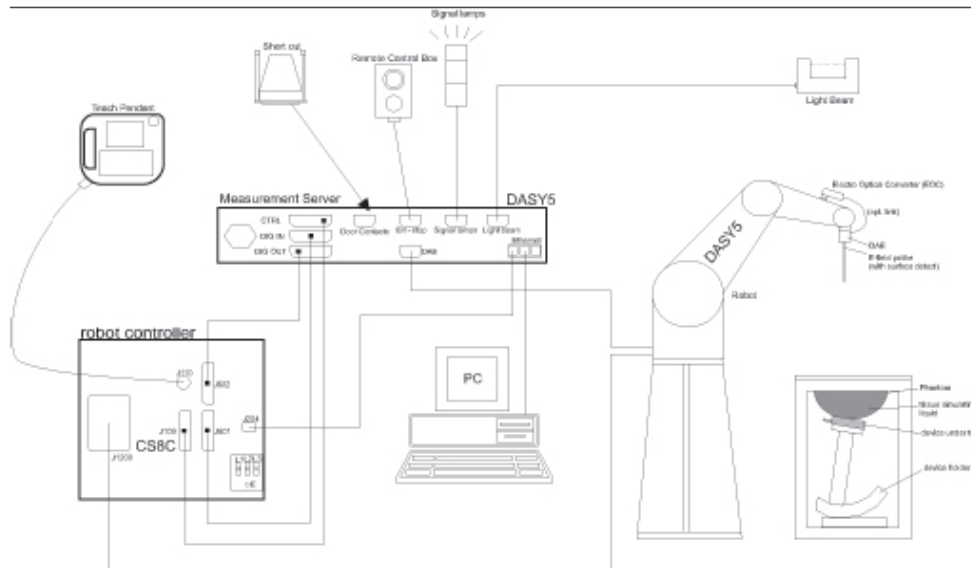
**Table B.1 Comparison between area scan and zoom scan for system verification**

| Date       | Band    | Position | Area scan<br>(1g) | Zoom scan<br>(1g) | Drift (%) |
|------------|---------|----------|-------------------|-------------------|-----------|
| 2022-10-20 | 750MHz  | Head     | 2.11              | 2.08              | 1.44      |
| 2022-10-22 | 900MHz  | Head     | 2.68              | 2.72              | -1.47     |
| 2022-10-26 | 1800MHz | Head     | 9.85              | 9.87              | -0.20     |
| 2022-11-5  | 1900MHz | Head     | 9.87              | 9.88              | -0.10     |
| 2022-11-8  | 2450MHz | Head     | 13.32             | 13.37             | -0.37     |
| 2022-11-11 | 2600MHz | Head     | 13.85             | 13.91             | -0.43     |

## ANNEX C SAR Measurement Setup

### C.1 Measurement Set-up

The Dasy4 or DASY5 system for performing compliance tests is illustrated above graphically. This system consists of the following items:



### Picture C.1 SAR Lab Test Measurement Set-up

- A standard high precision 6-axis robot (StäubliTX=RX family) 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 and the DASY4 or 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.

## C.2 Dasy4 or DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multifiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY4 or DASY5 software reads the reflection during a software approach and looks for the maximum using 2<sup>nd</sup> order curve fitting. The approach is stopped at reaching the maximum.

### Probe Specifications:

|                       |                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------|
| <b>Model:</b>         | ES3DV3, EX3DV4                                                                                    |
| <b>Frequency</b>      | 10MHz — 6.0GHz(EX3DV4)                                                                            |
| <b>Range:</b>         | 10MHz — 4GHz(ES3DV3)                                                                              |
| <b>Calibration:</b>   | In head and body simulating tissue at<br>Frequencies from 835 up to 5800MHz                       |
| <b>Linearity:</b>     | ± 0.2 dB(30 MHz to 6 GHz) for EX3DV4<br>± 0.2 dB(30 MHz to 4 GHz) for ES3DV3                      |
| <b>Dynamic Range:</b> | 10 mW/kg — 100W/kg                                                                                |
| <b>Probe Length:</b>  | 330 mm                                                                                            |
| <b>Probe Tip</b>      |                                                                                                   |
| <b>Length:</b>        | 20 mm                                                                                             |
| <b>Body Diameter:</b> | 12 mm                                                                                             |
| <b>Tip Diameter:</b>  | 2.5 mm (3.9 mm for ES3DV3)                                                                        |
| <b>Tip-Center:</b>    | 1 mm (2.0mm for ES3DV3)                                                                           |
| <b>Application:</b>   | SAR Dosimetry Testing<br>Compliance tests of mobile phones<br>Dosimetry in strong gradient fields |



Picture C.2 Near-field Probe



Picture C.3 E-field Probe

## C.3 E-field Probe Calibration

Each E-Probe/Probe Amplifier combination has unique calibration parameters. A TEM cell calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm<sup>2</sup>) using an RF Signal generator, TEM cell, and RF Power Meter.

The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and in a waveguide or

other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1 mW/cm<sup>2</sup>.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The E-field in the medium correlates with the temperature rise in the dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C \frac{\Delta T}{\Delta t}$$

Where:

$\Delta t$  = Exposure time (30 seconds),

C = Heat capacity of tissue (brain or muscle),

$\Delta T$  = Temperature increase due to RF exposure.

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

Where:

$\sigma$  = Simulated tissue conductivity,

$\rho$  = Tissue density (kg/m<sup>3</sup>).

## C.4 Other Test Equipment

### C.4.1 Data Acquisition Electronics(DAE)

The data acquisition electronics consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.

The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.



**PictureC.4: DAE**

### C.4.2 Robot

The SPEAG DASY system uses the high precision robots (DASY4: RX90XL; DASY5: RX160L) type from Stäubli SA (France). For the 6-axis controller system, the robot controller version from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability 0.02mm)
- High reliability (industrial design)
- Low maintenance costs (virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements (brushless synchron motors; no stepper motors)
- Low ELF interference (motor control fields shielded via the closed metallic construction shields)



Picture C.5 DASY 4



Picture C.6 DASY 5

### C.4.3 Measurement Server

The Measurement server is based on a PC/104 CPU board with CPU (dasy4: 166 MHz, Intel Pentium; DASY5: 400 MHz, Intel Celeron), chipdisk (DASY4: 32 MB; DASY5: 128MB), RAM (DASY4: 64 MB, DASY5: 128MB). The necessary circuits for communication with the DAE electronic box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all real-time data evaluation of field measurements and surface detection, controls robot movements and handles safety operation. The PC operating system cannot interfere with these time critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program-controlled robot movements. Furthermore, the measurement server is equipped with an expansion port which is reserved for future applications. Please note that this expansion port does not have a standardized pinout, and therefore only devices provided by SPEAG can be connected. Devices from any other supplier could seriously damage the measurement server.



Picture C.7 Server for DASY 4



Picture C.8 Server for DASY 5

#### C.4.4 Device Holder for Phantom

The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5mm distance, a positioning uncertainty of  $\pm 0.5\text{mm}$  would produce a SAR uncertainty of  $\pm 20\%$ . Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

The DASY device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales are the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.

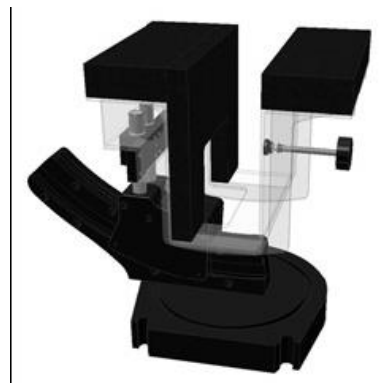
The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity  $\epsilon = 3$  and loss tangent  $\delta = 0.02$ . The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested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

<Laptop Extension Kit>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin-SAM and ELI phantoms.



Picture C.9-1: Device Holder



Picture C.9-2: Laptop Extension Kit

### C.4.5 Phantom

The SAM Twin Phantom V4.0 is constructed of a fiberglass shell integrated in a table. The shape of the shell is based on data from an anatomical study designed to

Represent the 90<sup>th</sup> percentile of the population. The phantom enables the dissymmetric evaluation of SAR for both left and right handed handset usage, as well as body-worn usage using the flat phantom region. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot. The shell phantom has a 2mm shell thickness (except the ear region where shell thickness increases to 6 mm).

Shell Thickness:  $2 \pm 0.2$  mm

Filling Volume: Approx. 25 liters

Dimensions: 810 x 1000 x 500 mm (H x L x W)

Available: Special

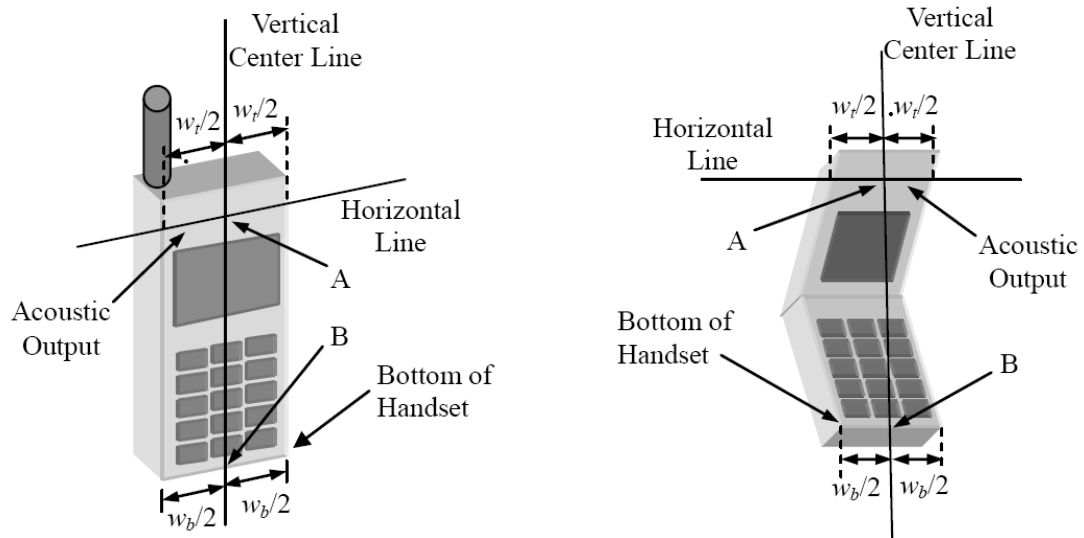


**Picture C.10: SAM Twin Phantom**

## ANNEX D Position of the wireless device in relation to the phantom

### D.1 General considerations

This standard specifies two handset test positions against the head phantom – the “cheek” position and the “tilt” position.



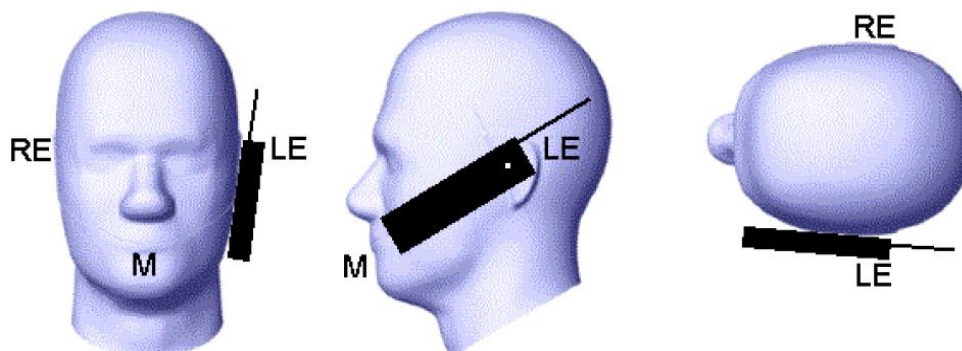
$w_t$  Width of the handset at the level of the acoustic

$w_b$  Width of the bottom of the handset

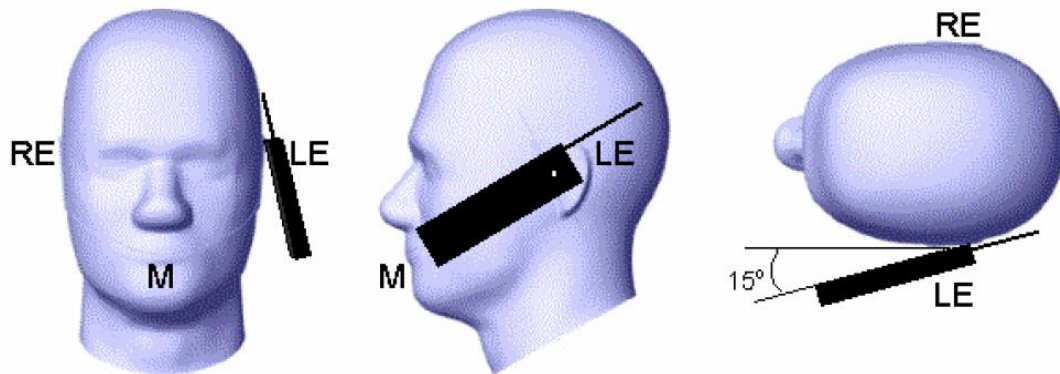
A Midpoint of the width  $w_t$  of the handset at the level of the acoustic output

B Midpoint of the width  $w_b$  of the bottom of the handset

Picture D.1-a Typical “fixed” case handset      Picture D.1-b Typical “clam-shell” case handset



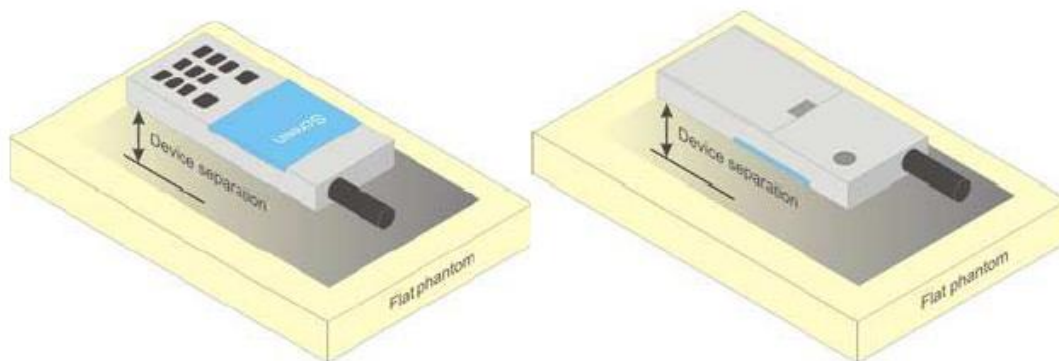
Picture D.2 Cheek position of the wireless device on the left side of SAM



Picture D.3 Tilt position of the wireless device on the left side of SAM

## D.2 Body-worn device

A typical example of a body-worn device is a mobile phone, wireless enabled PDA or other battery operated wireless device with the ability to transmit while mounted on a person's body using a carry accessory approved by the wireless device manufacturer.

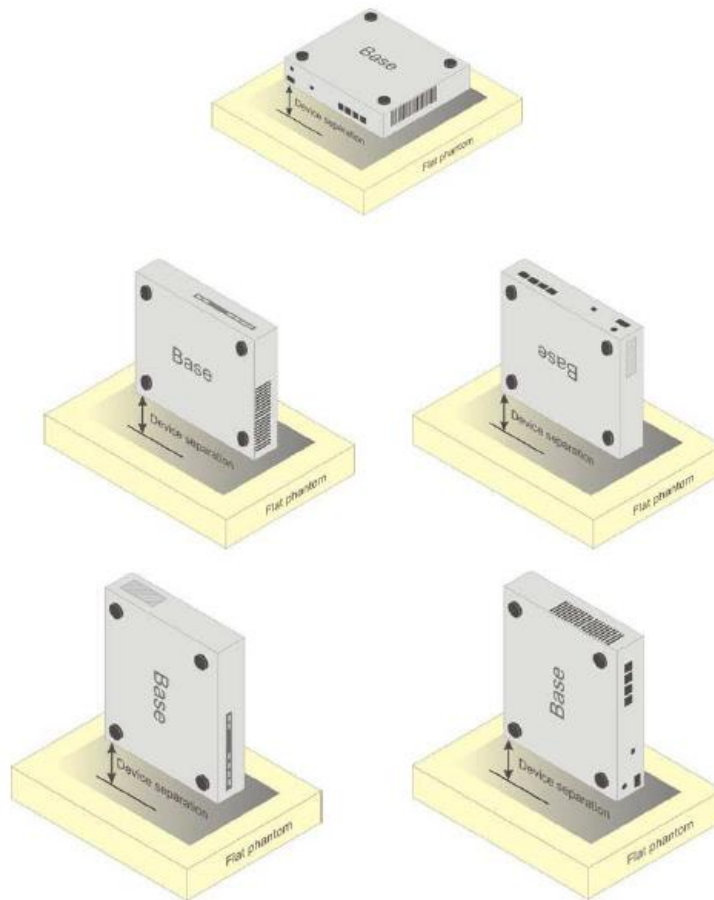


Picture D.4 Test positions for body-worn devices

## D.3 Desktop device

A typical example of a desktop device is a wireless enabled desktop computer placed on a table or desk when used.

The DUT shall be positioned at the distance and in the orientation to the phantom that corresponds to the intended use as specified by the manufacturer in the user instructions. For devices that employ an external antenna with variable positions, tests shall be performed for all antenna positions specified. Picture 8.5 show positions for desktop device SAR tests. If the intended use is not specified, the device shall be tested directly against the flat phantom.



Picture D.5 Test positions for desktop devices

#### D.4 DUT Setup Photos



Picture D.6

## ANNEX E Equivalent Media Recipes

The liquid used for the frequency range of 800-3000 MHz consisted of water, sugar, salt, preventol, glycol monobutyl and Cellulose. The liquid has been previously proven to be suited for worst-case. The Table E.1 shows the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the IEEE 1528 and IEC 62209.

**TableE.1: Composition of the Tissue Equivalent Matter**

| Frequency (MHz)                    | 835Head                          | 835Body                          | 1900 Head                        | 1900 Body                        | 2450 Head                        | 2450 Body                        | 5800 Head                        | 5800 Body                        |
|------------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Ingredients (% by weight)          |                                  |                                  |                                  |                                  |                                  |                                  |                                  |                                  |
| Water                              | 41.45                            | 52.5                             | 55.242                           | 69.91                            | 58.79                            | 72.60                            | 65.53                            | 65.53                            |
| Sugar                              | 56.0                             | 45.0                             | \                                | \                                | \                                | \                                | \                                | \                                |
| Salt                               | 1.45                             | 1.4                              | 0.306                            | 0.13                             | 0.06                             | 0.18                             | \                                | \                                |
| Preventol                          | 0.1                              | 0.1                              | \                                | \                                | \                                | \                                | \                                | \                                |
| Cellulose                          | 1.0                              | 1.0                              | \                                | \                                | \                                | \                                | \                                | \                                |
| Glycol Monobutyl                   | \                                | \                                | 44.452                           | 29.96                            | 41.15                            | 27.22                            | \                                | \                                |
| Diethylenglycol monohexylether     | \                                | \                                | \                                | \                                | \                                | \                                | 17.24                            | 17.24                            |
| Triton X-100                       | \                                | \                                | \                                | \                                | \                                | \                                | 17.24                            | 17.24                            |
| Dielectric Parameters Target Value | $\epsilon=41.5$<br>$\sigma=0.90$ | $\epsilon=55.2$<br>$\sigma=0.97$ | $\epsilon=40.0$<br>$\sigma=1.40$ | $\epsilon=53.3$<br>$\sigma=1.52$ | $\epsilon=39.2$<br>$\sigma=1.80$ | $\epsilon=52.7$<br>$\sigma=1.95$ | $\epsilon=35.3$<br>$\sigma=5.27$ | $\epsilon=48.2$<br>$\sigma=6.00$ |

**Note:** There are a little adjustment respectively for 750, 1750, 2600, 5200, 5300 and 5600 based on the recipe of closest frequency in table E.1.

## ANNEX F System Validation

The SAR system must be validated against its performance specifications before it is deployed. When SAR probes, system components or software are changed, upgraded or recalibrated, these must be validated with the SAR system(s) that operates with such components.

**Table F.1: System Validation for 7548**

| Probe SN. | Liquid name  | Validation date | Frequency point | Status (OK or Not) |
|-----------|--------------|-----------------|-----------------|--------------------|
| 7548      | Head 750MHz  | August.2,2022   | 750 MHz         | OK                 |
| 7548      | Head 900MHz  | August.2,2022   | 900 MHz         | OK                 |
| 7548      | Head 1450MHz | August.2,2022   | 1450 MHz        | OK                 |
| 7548      | Head 1750MHz | August.2,2022   | 1750 MHz        | OK                 |
| 7548      | Head 1900MHz | August.2,2022   | 1900 MHz        | OK                 |
| 7548      | Head 2000MHz | August.3,2022   | 2000 MHz        | OK                 |
| 7548      | Head 2300MHz | August.3,2022   | 2300 MHz        | OK                 |
| 7548      | Head 2450MHz | August.3,2022   | 2450 MHz        | OK                 |
| 7548      | Head 2600MHz | August.3,2022   | 2600 MHz        | OK                 |
| 7548      | Head 3300MHz | August.3,2022   | 3300 MHz        | OK                 |
| 7548      | Head 3500MHz | August.3,2022   | 3500 MHz        | OK                 |
| 7548      | Head 3700MHz | August.3,2022   | 3700 MHz        | OK                 |
| 7548      | Head 5250MHz | August.4,2022   | 5250 MHz        | OK                 |
| 7548      | Head 5600MHz | August.4,2022   | 5600 MHz        | OK                 |
| 7548      | Head 5750MHz | August.4,2022   | 5750 MHz        | OK                 |