



# SAR TEST REPORT

No. I21Z61291-SEM04

For

HMD Global Oy

GSM/WCDMA/LTE phone

Model Name: N139DL

with

Hardware Version: 1.0

Software Version: 00.2131.11.01

FCC ID: 2AJOTTA-1398

Issued Date: 2021-11-11

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

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.

Test Laboratory:

CTTL, Telecommunication Technology Labs, CAICT

No. 51, Xueyuan Road, Haidian District, Beijing, P. R. China 100191.

Tel:+86(0)10-62304633-2512, Fax:+86(0)10-62304633-2504

Email: [cttl\\_terminals@caict.ac.cn](mailto:cttl_terminals@caict.ac.cn), website: [www.caict.ac.cn](http://www.caict.ac.cn)

**REPORT HISTORY**

| Report Number   | Revision | Issue Date | Description                                                                                                                                                                                                                                                                                                                                                              |
|-----------------|----------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I21Z61291-SEM04 | Rev.0    | 2021-10-13 | Initial creation of test report                                                                                                                                                                                                                                                                                                                                          |
| I21Z61291-SEM04 | Rev.1    | 2021-11-11 | <ol style="list-style-type: none"><li>1. Add band cover for LTE B4/B66 on page6.</li><li>2. Revise tune up procedure for GSM850 on page29.</li><li>3. Revise tune up procedure for LTE Band2 on page36.</li><li>4. Revise tune up procedure for 802.11g/n(HT20) on page76.</li><li>5. Revise SAR results for LTE B41 PC2-Body worn in Table 14.1-31 on page95.</li></ol> |

## 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>19</b> |
| 8.1 SYSTEM SETUP.....                                                  | 19        |
| 8.2 SYSTEM VERIFICATION.....                                           | 20        |
| <b>9 MEASUREMENT PROCEDURES .....</b>                                  | <b>21</b> |
| 9.1 TESTS TO BE PERFORMED .....                                        | 21        |
| 9.2 GENERAL MEASUREMENT PROCEDURE.....                                 | 23        |
| 9.3 WCDMA MEASUREMENT PROCEDURES FOR SAR .....                         | 24        |
| 9.4 SAR MEASUREMENT FOR LTE.....                                       | 25        |
| 9.5 BLUETOOTH & WI-FI MEASUREMENT PROCEDURES FOR SAR .....             | 27        |
| 9.6 POWER DRIFT .....                                                  | 27        |
| <b>10 AREA SCAN BASED 1-G SAR .....</b>                                | <b>28</b> |
| 10.1 REQUIREMENT OF KDB.....                                           | 28        |
| 10.2 FAST SAR ALGORITHMS .....                                         | 28        |

|                                                                                 |            |
|---------------------------------------------------------------------------------|------------|
| <b>11 CONDUCTED OUTPUT POWER .....</b>                                          | <b>29</b>  |
| 11.1 GSM MEASUREMENT RESULT .....                                               | 29         |
| 11.2 WCDMA MEASUREMENT RESULT .....                                             | 33         |
| 11.3 LTE MEASUREMENT RESULT .....                                               | 36         |
| 11.4 WI-FI AND BT MEASUREMENT RESULT .....                                      | 76         |
| <b>12 SIMULTANEOUS TX SAR CONSIDERATIONS .....</b>                              | <b>77</b>  |
| 12.1 INTRODUCTION.....                                                          | 77         |
| 12.2 TRANSMIT ANTENNA SEPARATION DISTANCES.....                                 | 77         |
| 12.3 SAR MEASUREMENT POSITIONS .....                                            | 78         |
| 12.4 STANDALONE SAR TEST EXCLUSION CONSIDERATIONS .....                         | 78         |
| <b>13 EVALUATION OF SIMULTANEOUS.....</b>                                       | <b>79</b>  |
| <b>14 SAR TEST RESULT .....</b>                                                 | <b>80</b>  |
| 14.1 SAR RESULTS FOR 2G/3G/4G .....                                             | 80         |
| 14.2 WLAN EVALUATION FOR 2.4G .....                                             | 100        |
| <b>15 SAR MEASUREMENT VARIABILITY.....</b>                                      | <b>104</b> |
| <b>16 MEASUREMENT UNCERTAINTY .....</b>                                         | <b>106</b> |
| 16.1 MEASUREMENT UNCERTAINTY FOR NORMAL SAR TESTS (300MHZ~3GHZ).....            | 106        |
| 16.2 MEASUREMENT UNCERTAINTY FOR FAST SAR TESTS (300MHZ~3GHZ) .....             | 107        |
| <b>17 MAIN TEST INSTRUMENTS .....</b>                                           | <b>109</b> |
| <b>ANNEX A GRAPH RESULTS.....</b>                                               | <b>110</b> |
| <b>ANNEX B SYSTEM VERIFICATION RESULTS .....</b>                                | <b>162</b> |
| <b>ANNEX C SAR MEASUREMENT SETUP.....</b>                                       | <b>169</b> |
| <b>ANNEX D POSITION OF THE WIRELESS DEVICE IN RELATION TO THE PHANTOM .....</b> | <b>175</b> |
| <b>ANNEX E EQUIVALENT MEDIA RECIPES.....</b>                                    | <b>178</b> |
| <b>ANNEX F SYSTEM VALIDATION .....</b>                                          | <b>179</b> |
| <b>ANNEX G PROBE CALIBRATION CERTIFICATE .....</b>                              | <b>180</b> |
| <b>ANNEX H DIPOLE CALIBRATION CERTIFICATE .....</b>                             | <b>189</b> |
| <b>ANNEX I ACCREDITATION CERTIFICATE.....</b>                                   | <b>225</b> |

## 1 Test Laboratory

### 1.1 Testing Location

|               |                                                                      |
|---------------|----------------------------------------------------------------------|
| Company Name: | CTTL(Shouxiang)                                                      |
| Address:      | No. 51, Xueyuan 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   |

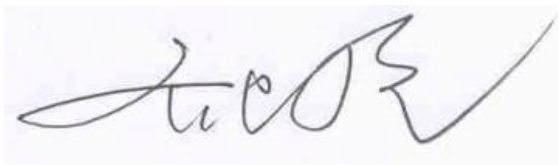
### 1.3 Project Data

|                     |                    |
|---------------------|--------------------|
| Project Leader:     | Qi Dianyuan        |
| Test Engineer:      | Yao Juming         |
| Testing Start Date: | September 15, 2021 |
| Testing End Date:   | September 20, 2021 |

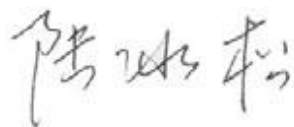
### 1.4 Signature



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 HMD Global Oy GSM/WCDMA/LTE phone N139DL is as follows:

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

| Technology Band | Head<br>(Separation<br>Distance 0mm) | Hotspot<br>(Separation<br>Distance 10mm) | Body-Worn<br>(Separation<br>Distance 15mm) | Equipment<br>Class |
|-----------------|--------------------------------------|------------------------------------------|--------------------------------------------|--------------------|
| GSM850          | 0.56                                 | 0.59                                     | 0.47                                       | PCE                |
| GSM1900         | 0.33                                 | 1.09                                     | 0.46                                       |                    |
| WCDMA1900       | 0.62                                 | 1.26                                     | 0.99                                       |                    |
| WCDMA1700       | 0.65                                 | 0.94                                     | 1.16                                       |                    |
| WCDMA 850       | 0.28                                 | 0.56                                     | /                                          |                    |
| LTE Band2       | 0.44                                 | 0.85                                     | 1.14                                       |                    |
| LTE Band5       | 0.52                                 | 0.67                                     | /                                          |                    |
| LTE Band7       | 1.06                                 | 0.98                                     | 1.17                                       |                    |
| LTE Band12      | 0.44                                 | 0.75                                     | /                                          |                    |
| LTE Band13      | 0.40                                 | 0.76                                     | /                                          |                    |
| LTE Band41-PC3  | 0.62                                 | 1.29                                     | 0.64                                       |                    |
| LTE Band41-PC2  | 0.75                                 | 0.54                                     | 0.57                                       |                    |
| LTE Band66      | 0.42                                 | 0.90                                     | 1.09                                       |                    |
| LTE Band71      | 0.46                                 | 0.56                                     | /                                          |                    |
| WLAN 2.4GHz     | 0.48                                 | 0.56                                     | 0.18                                       | DTS                |

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 15/10 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: **1.29 W/kg(1g)**.

### Remark:

This device supports both LTE B4/B17 and LTE B66/B12. Since the supported frequency span for LTE B4/B17 falls completely within the supports frequency span for LTE B66/B12, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B66/B12.

**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 B41-PC2) | 0.75         | 0.47      | <b>1.22</b> |
| <b>Highest SAR value for Body</b> | Rear 10mm (LTE B7)             | 0.85         | 0.56      | <b>1.41</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 (LTE B7) | 1.06         | 0.37 <sup>[1]</sup> | <b>1.43</b> |
| <b>Highest SAR value for Body</b> | Rear 15mm (LTE B7)         | 1.17         | 0.12 <sup>[1]</sup> | <b>1.29</b> |

[1] - Estimated SAR for Bluetooth (see the table 13.3)

According to the above tables, the highest sum of reported SAR values is **1.43 W/kg (1g)**. The detail for simultaneous transmission consideration is described in chapter 13.

#### **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.

### 3 Client Information

#### 3.1 Applicant Information

|                 |                                             |
|-----------------|---------------------------------------------|
| Company Name:   | HMD Global Oy                               |
| Address/Post:   | Bertel Jungin aukio 9, 02600 Espoo, FINLAND |
| Contact Person: | Mikko Kahlos                                |
| Contact Email:  | mikko.kahlos@hmdglobal.com                  |
| Telephone:      | +358 408036126                              |
| Fax:            | +97143697604                                |

#### 3.2 Manufacturer Information

|                 |                                             |
|-----------------|---------------------------------------------|
| Company Name:   | HMD Global Oy                               |
| Address/Post:   | Bertel Jungin aukio 9, 02600 Espoo, FINLAND |
| Contact Person: | Mikko Kahlos                                |
| Contact Email:  | mikko.kahlos@hmdglobal.com                  |
| Telephone:      | +358 408036126                              |
| Fax:            | +97143697604                                |



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

### 4.1 About EUT

|                                     |                                                                                                |
|-------------------------------------|------------------------------------------------------------------------------------------------|
| Description:                        | GSM/WCDMA/LTE phone                                                                            |
| Model name:                         | N139DL                                                                                         |
| Operating mode(s):                  | GSM850/900/1800/1900,<br>WCDMA B2/B4/B5<br>LTEBand2/4/5/7/12/13/17/41/66/71<br>BT, Wi-Fi(2.4G) |
| 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 IV)                                                            |
|                                     | 1710-1755 MHz (WCDMA1700 Band II)                                                              |
|                                     | 1850.7 – 1909.3 MHz (LTE Band 2)                                                               |
|                                     | 824.7 – 848.3 MHz (LTE Band 5)                                                                 |
|                                     | 2500 – 2570 MHz (LTE Band 7)                                                                   |
|                                     | 699.7 – 715.3 MHz (LTE Band 12)                                                                |
|                                     | 779.5 – 784.5 MHz (LTE Band 13)                                                                |
|                                     | 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    | 358712910008323 | 1.0        | 00.2131.11.01 |
| EUT2    | 358712910008455 | 1.0        | 00.2131.11.01 |
| EUT3    | 358712910007945 | 1.0        | 00.2131.11.01 |
| EUT4    | 358712910007978 | 1.0        | 00.2131.11.01 |

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

**Note:** It is performed to test SAR with the EUT1~2 and conducted power with the EUT3~4.

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

| AE ID* | Description | Model | SN | Manufacturer                      |
|--------|-------------|-------|----|-----------------------------------|
| AE1    | Battery     | HE402 | /  | SHENZHEN UTILITY 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**

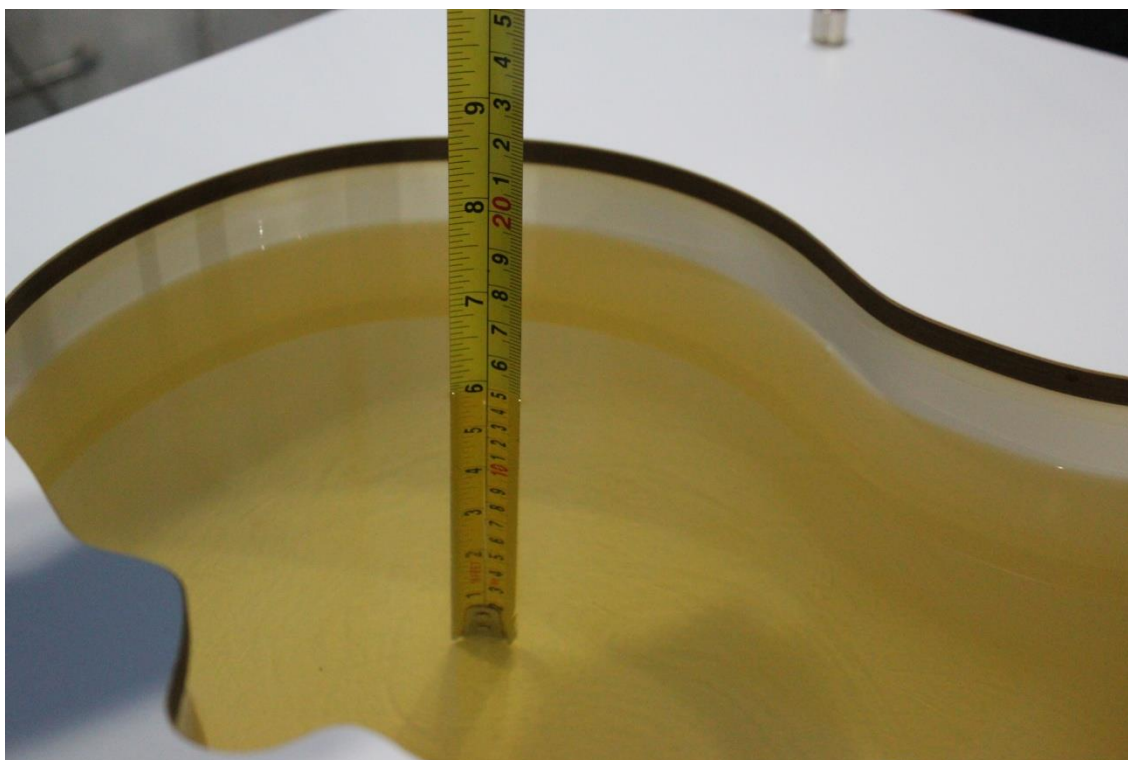
| Frequency(MHz) | Liquid Type | Conductivity( $\sigma$ ) | $\pm 5\%$ Range | Permittivity( $\epsilon$ ) | $\pm 5\%$ Range |
|----------------|-------------|--------------------------|-----------------|----------------------------|-----------------|
| 750            | Head        | 0.89                     | 0.85~0.93       | 41.94                      | 39.8~44.0       |
| 835            | Head        | 0.90                     | 0.86~0.95       | 41.5                       | 39.4~43.6       |
| 1750           | Head        | 1.37                     | 1.30~1.44       | 40.08                      | 38.1~42.1       |
| 1900           | Head        | 1.40                     | 1.33~1.47       | 40.0                       | 38.0~42.0       |
| 2450           | Head        | 1.67                     | 1.59~1.75       | 39.47                      | 37.5~41.4       |
| 2600           | Head        | 1.96                     | 1.86~2.06       | 39.01                      | 37.1~41.0       |

### 7.2 Dielectric Performance

**Table 7.2: Dielectric Performance of Tissue Simulating Liquid**

| Measurement Date<br>(yyyy-mm-dd) | Type | Frequency | Permittivity<br>$\epsilon$ | Drift<br>(%) | Conductivity<br>$\sigma$ (S/m) | Drift<br>(%) |
|----------------------------------|------|-----------|----------------------------|--------------|--------------------------------|--------------|
| 2021-9-15                        | Head | 750 MHz   | 43.88                      | 4.63         | 0.8281                         | -6.96        |
| 2021-9-16                        | Head | 835 MHz   | 43.59                      | 5.04         | 0.8613                         | -4.30        |
| 2021-9-17                        | Head | 1750 MHz  | 41.45                      | 3.42         | 1.331                          | -2.85        |
| 2021-9-18                        | Head | 1900 MHz  | 41.27                      | 3.18         | 1.421                          | 1.50         |
| 2021-9-19                        | Head | 2450 MHz  | 40.49                      | 3.29         | 1.83                           | 1.67         |
| 2021-9-20                        | Head | 2600 MHz  | 40.16                      | 2.95         | 1.96                           | 0.00         |

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 Flat Phantom (750MHz)





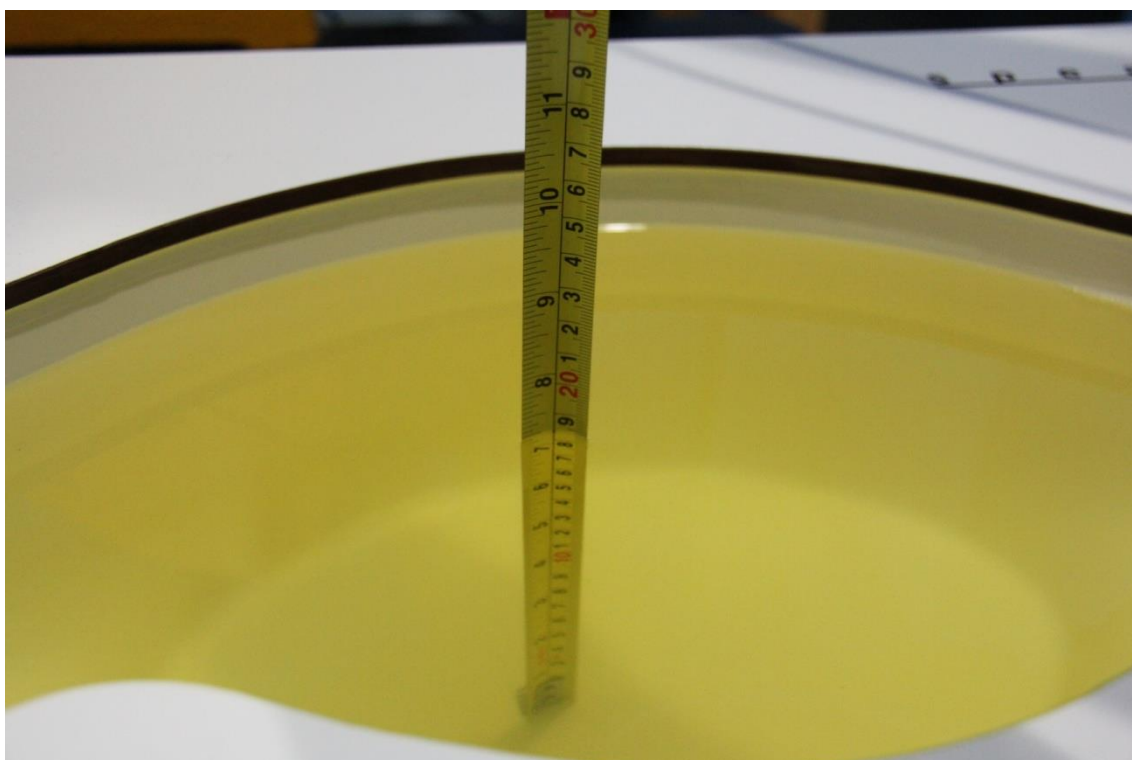
**Picture 7-3 Liquid depth in the Head Phantom (835 MHz)**



**Picture 7-4 Liquid depth in the Flat Phantom (835 MHz)**



**Picture 7-5 Liquid depth in the Head Phantom (1900 MHz)**

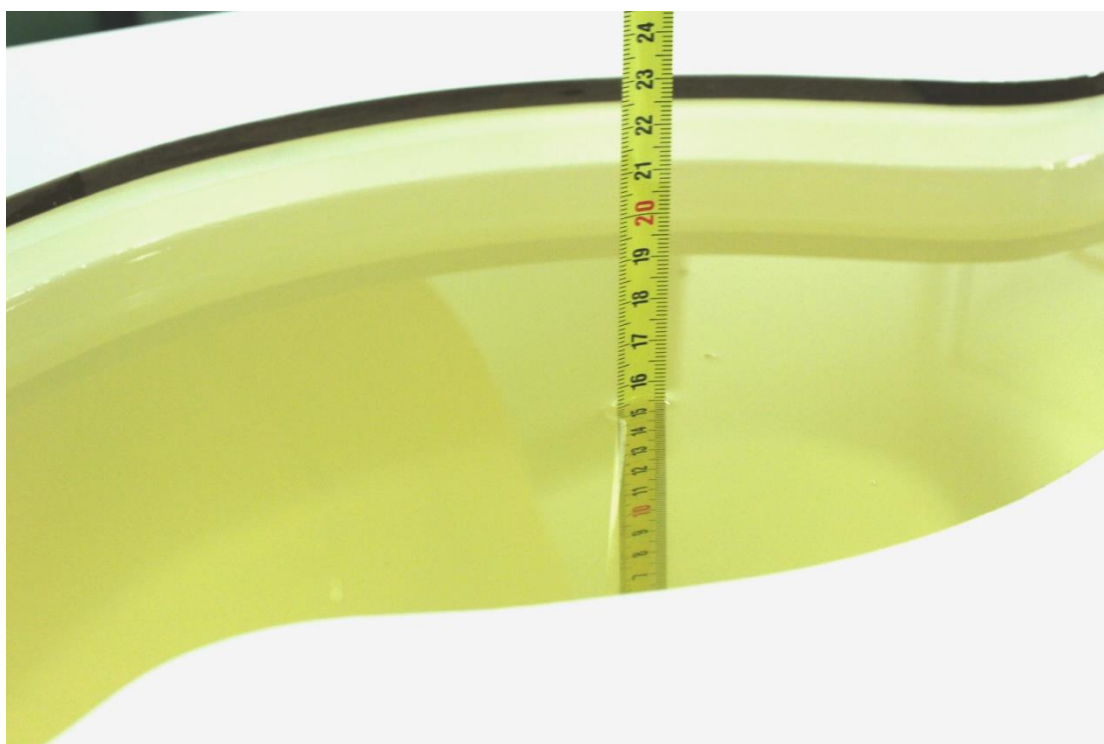


**Picture 7-6 Liquid depth in the Flat Phantom (1900MHz)**





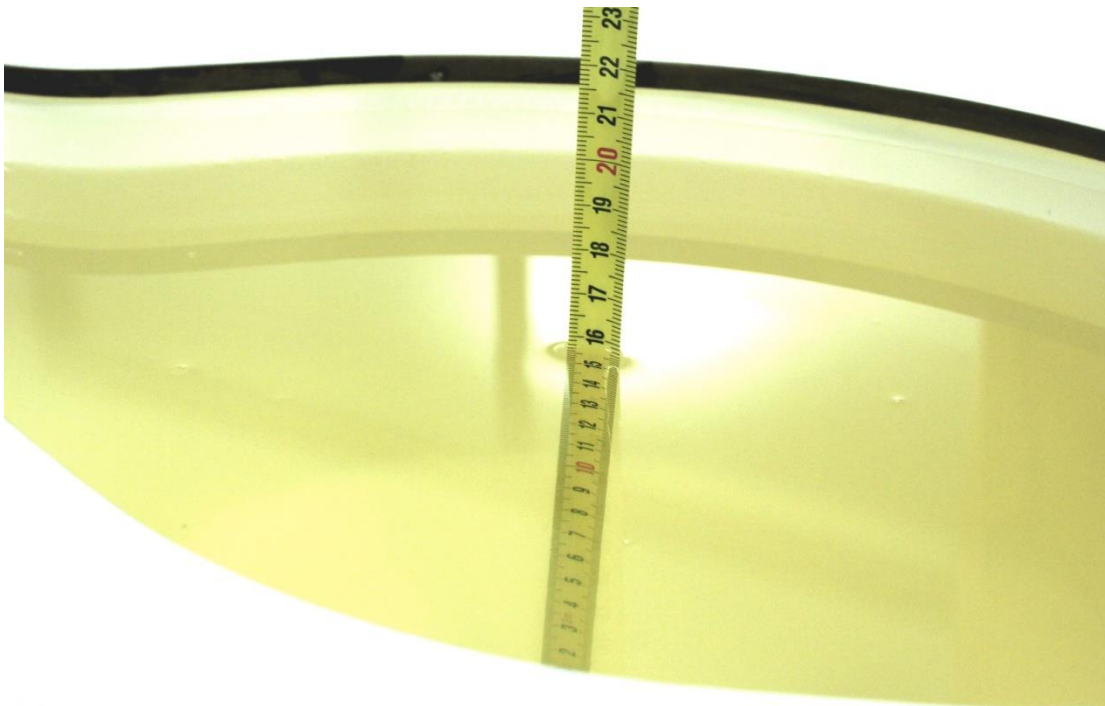
**Picture 7-7 Liquid depth in the Head Phantom (2450MHz)**



**Picture 7-8 Liquid depth in the Flat Phantom (2450MHz)**



**Picture 7-9 Liquid depth in the Head Phantom (2600 MHz)**

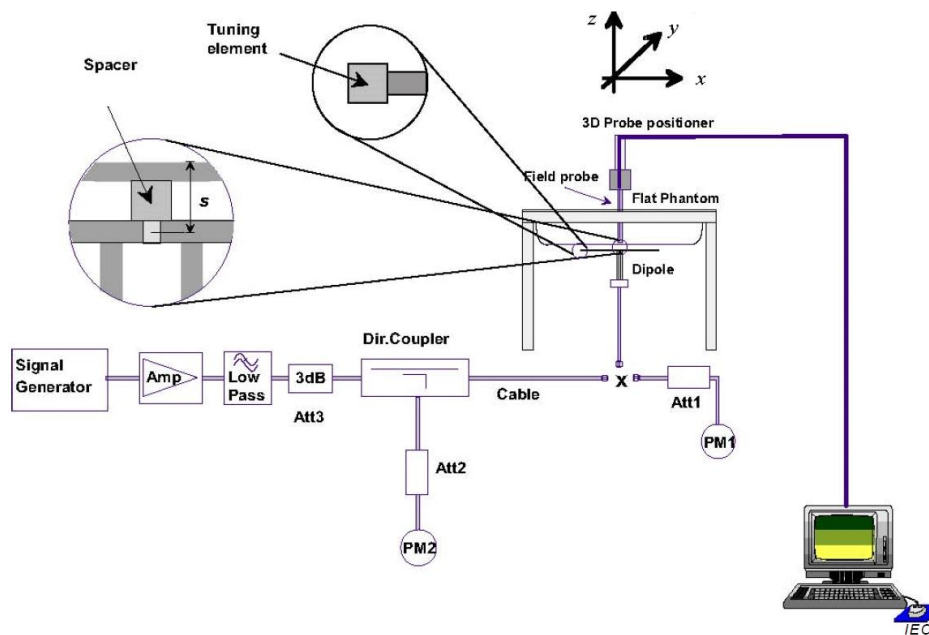


**Picture 7-10 Liquid depth in the Flat Phantom (2600MHz)**

## 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<br>Date<br>(yyyy-mm-dd) | Frequency | Target value (W/kg) |                | Measured value(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 |
| 2021-9-15                           | 750 MHz   | 5.65                | 8.68           | 5.68                 | 8.52           | 0.53%           | -1.84%         |
| 2021-9-16                           | 835 MHz   | 6.24                | 9.63           | 6.24                 | 9.92           | 0.00%           | 3.01%          |
| 2021-9-17                           | 1750 MHz  | 19.4                | 36.9           | 19.36                | 36.52          | -0.21%          | -1.03%         |
| 2021-9-18                           | 1900 MHz  | 20.9                | 40.1           | 20.32                | 39.72          | -2.78%          | -0.95%         |
| 2021-9-19                           | 2450 MHz  | 24.9                | 53.3           | 24.4                 | 53.08          | -2.01%          | -0.41%         |
| 2021-9-20                           | 2600 MHz  | 25.5                | 57.1           | 25.12                | 57.24          | -1.49%          | 0.25%          |

## 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.

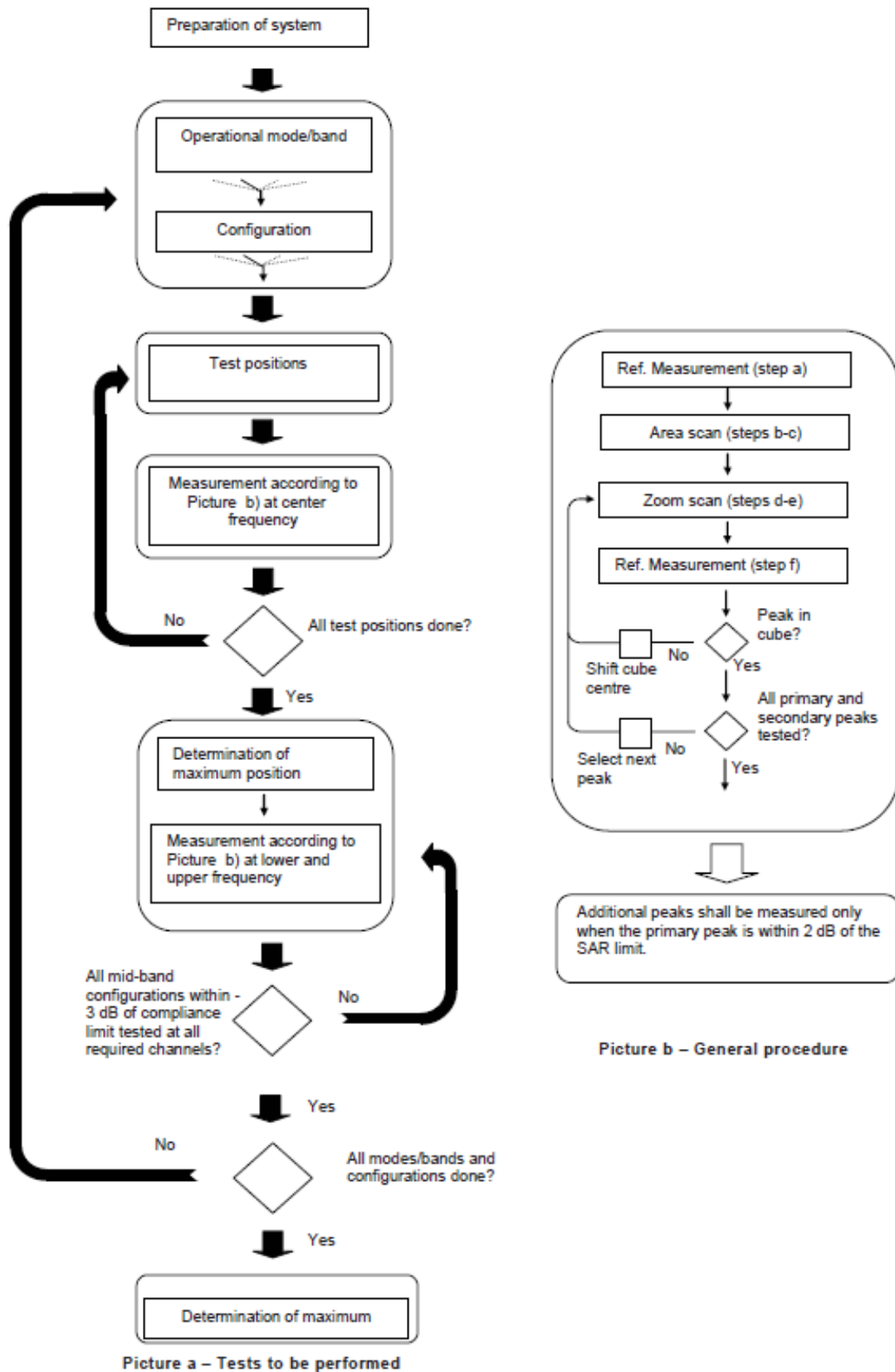
**Step 1:** The tests described in 9.2 shall be performed at the channel that is closest to the centre of the transmit frequency band ( $f_c$ ) for:

- 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 9.1**Block 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

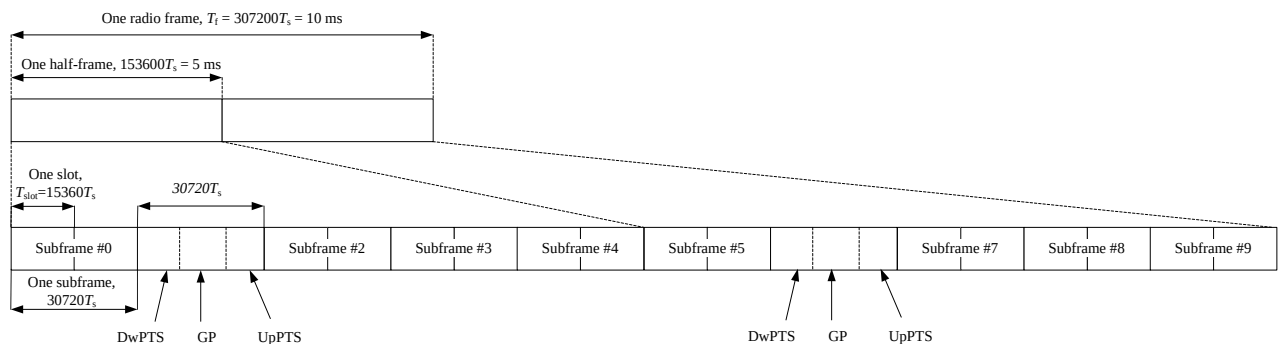
The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.

### 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

For Main antenna, there are two sets of tune-up power, Normal power and Low power, used for different use cases for GSM850/1900, WCDMA1700/1900 and LTE Band2/7/41/66. Low power status is applied for hotspot mode of above bands. For other bands, Normal power status is applied for both head and body test.

### 11.1 GSM Measurement result

During the process of testing, the EUT was controlled via Agilent Digital Radio Communication tester (E5515C) to ensure the maximum power transmission and proper modulation. This result contains conducted output power for the EUT. In all cases, the measured peak output power should be greater and within 5% than EMI measurement.

**Table 11.1-1: The conducted power measurement results–GSM850 Normal power**

| GSM 850<br>Speech (GMSK) | Measured Power (dBm) |       |       | Tune up | calculation | Averaged Power (dBm) |       |       |
|--------------------------|----------------------|-------|-------|---------|-------------|----------------------|-------|-------|
|                          | 251                  | 190   | 128   |         |             | 251                  | 190   | 128   |
| 1 Txslot                 | 31.65                | 31.63 | 31.57 | 32.50   | /           | /                    | /     | /     |
| GSM 850<br>GPRS (GMSK)   | Measured Power (dBm) |       |       |         | calculation | Averaged Power (dBm) |       |       |
|                          | 251                  | 190   | 128   |         |             | 251                  | 190   | 128   |
| 1 Txslot                 | 31.53                | 31.50 | 31.43 | 32.50   | -9.03       | 22.50                | 22.47 | 22.40 |
| <b>2 Txslots</b>         | 29.53                | 29.47 | 29.37 | 30.50   | -6.02       | 23.51                | 23.45 | 23.35 |
| 3Txslots                 | 27.47                | 27.45 | 27.40 | 28.00   | -4.26       | 23.21                | 23.19 | 23.14 |
| 4 Txslots                | 26.38                | 26.40 | 25.76 | 27.00   | -3.01       | 23.37                | 23.39 | 22.75 |
| GSM 850<br>EGPRS (GMSK)  | Measured Power (dBm) |       |       |         | calculation | Averaged Power (dBm) |       |       |
|                          | 251                  | 190   | 128   |         |             | 251                  | 190   | 128   |
| 1 Txslot                 | 31.48                | 31.44 | 31.39 | 32.50   | -9.03       | 22.45                | 22.41 | 22.36 |
| <b>2 Txslots</b>         | 29.48                | 29.42 | 29.34 | 30.50   | -6.02       | 23.46                | 23.40 | 23.32 |
| 3Txslots                 | 27.42                | 27.42 | 27.39 | 28.00   | -4.26       | 23.16                | 23.16 | 23.13 |
| 4 Txslots                | 26.34                | 26.38 | 25.75 | 27.00   | -3.01       | 23.33                | 23.37 | 22.74 |
| GSM 850<br>EGPRS (8PSK)  | Measured Power (dBm) |       |       |         | calculation | Averaged Power (dBm) |       |       |
|                          | 251                  | 190   | 128   |         |             | 251                  | 190   | 128   |
| 1 Txslot                 | 26.02                | 26.11 | 26.11 | 28.00   | -9.03       | 16.99                | 17.08 | 17.08 |
| 2 Txslots                | 23.36                | 23.39 | 23.37 | 25.00   | -6.02       | 17.34                | 17.37 | 17.35 |
| 3Txslots                 | 22.14                | 21.26 | 21.59 | 23.00   | -4.26       | 17.88                | 17.00 | 17.33 |
| 4 Txslots                | 20.05                | 20.02 | 20.05 | 22.00   | -3.01       | 17.04                | 17.01 | 17.04 |

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 GSM850.**

**Table 11.1-2: The conducted power measurement results–GSM850 Low power**

| GSM 850<br>Speech (GMSK) | Measured Power (dBm) |       |       | Tune up | calculation | Averaged Power (dBm) |       |       |
|--------------------------|----------------------|-------|-------|---------|-------------|----------------------|-------|-------|
|                          | 251                  | 190   | 128   |         |             | 251                  | 190   | 128   |
| 1 Txslot                 | 29.88                | 29.78 | 29.75 | 30.00   | /           | /                    | /     | /     |
| GSM 850<br>GPRS (GMSK)   | Measured Power (dBm) |       |       |         | calculation | Averaged Power (dBm) |       |       |
|                          | 251                  | 190   | 128   |         |             | 251                  | 190   | 128   |
| 1 Txslot                 | 29.88                | 29.80 | 29.82 | 30.00   | -9.03       | 20.85                | 20.77 | 20.79 |
| <b>2 Txslots</b>         | 27.60                | 27.58 | 27.57 | 28.00   | -6.02       | 21.58                | 21.56 | 21.55 |
| 3Txslots                 | 25.73                | 25.68 | 25.74 | 26.00   | -4.26       | 21.47                | 21.42 | 21.48 |
| 4 Txslots                | 24.52                | 24.53 | 24.53 | 25.00   | -3.01       | 21.51                | 21.52 | 21.52 |
| GSM 850<br>EGPRS (GMSK)  | Measured Power (dBm) |       |       |         | calculation | Averaged Power (dBm) |       |       |
|                          | 251                  | 190   | 128   |         |             | 251                  | 190   | 128   |
| 1 Txslot                 | 29.76                | 29.69 | 29.70 | 30.00   | -9.03       | 20.73                | 20.66 | 20.67 |
| <b>2 Txslots</b>         | 27.50                | 27.49 | 27.47 | 28.00   | -6.02       | 21.48                | 21.47 | 21.45 |
| 3Txslots                 | 25.73                | 25.69 | 25.63 | 26.00   | -4.26       | 21.47                | 21.43 | 21.37 |
| 4 Txslots                | 24.57                | 24.58 | 24.44 | 25.00   | -3.01       | 21.56                | 21.57 | 21.43 |
| GSM 850<br>EGPRS (8PSK)  | Measured Power (dBm) |       |       |         | calculation | Averaged Power (dBm) |       |       |
|                          | 251                  | 190   | 128   |         |             | 251                  | 190   | 128   |
| 1 Txslot                 | 26.02                | 26.11 | 26.11 | 28.00   | -9.03       | 16.99                | 17.08 | 17.08 |
| 2 Txslots                | 23.36                | 23.39 | 23.37 | 25.00   | -6.02       | 17.34                | 17.37 | 17.35 |
| 3Txslots                 | 22.14                | 21.26 | 21.59 | 23.00   | -4.26       | 17.88                | 17.00 | 17.33 |
| 4 Txslots                | 20.05                | 20.02 | 20.05 | 22.00   | -3.01       | 17.04                | 17.01 | 17.04 |

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 GSM850.**

**Table 11.1-3: The conducted power measurement results-GSM1900 Normal power**

| PCS1900<br>Speech (GMSK) | Measured Power (dBm) |       |       | Tune up | calculation | Averaged Power (dBm) |       |       |
|--------------------------|----------------------|-------|-------|---------|-------------|----------------------|-------|-------|
|                          | 810                  | 661   | 512   |         |             | 810                  | 661   | 512   |
| 1 Txslot                 | 29.77                | 30.14 | 30.04 | 31.50   | /           | /                    | /     | /     |
| PCS1900<br>GPRS (GMSK)   | Measured Power (dBm) |       |       |         | calculation | Averaged Power (dBm) |       |       |
|                          | 810                  | 661   | 512   |         |             | 810                  | 661   | 512   |
| 1 Txslot                 | 29.71                | 30.09 | 30.02 | 31.50   | -9.03       | 20.68                | 21.06 | 20.99 |
| <b>2 Txslots</b>         | 27.15                | 27.19 | 27.36 | 28.30   | -6.02       | 21.13                | 21.17 | 21.34 |
| 3 Txslots                | 25.25                | 25.07 | 25.45 | 27.00   | -4.26       | 20.99                | 20.81 | 21.19 |
| 4 Txslots                | 24.11                | 23.94 | 24.25 | 25.50   | -3.01       | 21.10                | 20.93 | 21.24 |
| PCS1900<br>EGPRS (GMSK)  | Measured Power (dBm) |       |       |         | calculation | Averaged Power (dBm) |       |       |
|                          | 810                  | 661   | 512   |         |             | 810                  | 661   | 512   |
| 1 Txslot                 | 29.69                | 30.06 | 29.97 | 31.50   | -9.03       | 20.66                | 21.03 | 20.94 |
| <b>2 Txslots</b>         | 27.18                | 27.12 | 27.39 | 28.30   | -6.02       | 21.16                | 21.10 | 21.37 |
| 3Txslots                 | 25.40                | 25.03 | 25.42 | 27.00   | -4.26       | 21.14                | 20.77 | 21.16 |
| 4 Txslots                | 24.05                | 23.89 | 24.21 | 25.50   | -3.01       | 21.04                | 20.88 | 21.20 |
| PCS1900<br>EGPRS (8PSK)  | Measured Power (dBm) |       |       |         | calculation | Averaged Power (dBm) |       |       |
|                          | 810                  | 661   | 512   |         |             | 810                  | 661   | 512   |
| 1 Txslot                 | 25.83                | 26.03 | 26.11 | 27.00   | -9.03       | 16.80                | 17.00 | 17.08 |
| 2 Txslots                | 22.76                | 23.21 | 22.98 | 24.00   | -6.02       | 16.74                | 17.19 | 16.96 |
| 3Txslots                 | 21.49                | 21.31 | 21.26 | 23.00   | -4.26       | 17.23                | 17.05 | 17.00 |
| 4 Txslots                | 19.87                | 19.96 | 20.15 | 21.00   | -3.01       | 16.86                | 16.95 | 17.14 |

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 Low power**

| PCS1900<br>Speech (GMSK) | Measured Power (dBm) |       |       | Tune up | calculation | Averaged Power (dBm) |       |       |
|--------------------------|----------------------|-------|-------|---------|-------------|----------------------|-------|-------|
|                          | 810                  | 661   | 512   |         |             | 810                  | 661   | 512   |
| 1 Txslot                 | 27.92                | 27.92 | 28.04 | 29.50   | /           | /                    | /     | /     |
| PCS1900<br>GPRS (GMSK)   | Measured Power (dBm) |       |       |         | calculation | Averaged Power (dBm) |       |       |
|                          | 810                  | 661   | 512   |         |             | 810                  | 661   | 512   |
| 1 Txslot                 | 27.96                | 27.89 | 28.09 | 29.50   | -9.03       | 18.93                | 18.86 | 19.06 |
| 2 Txslots                | 24.83                | 25.36 | 25.62 | 26.00   | -6.02       | 18.81                | 19.34 | 19.60 |
| <b>3 Txslots</b>         | 23.88                | 24.22 | 24.41 | 25.00   | -4.26       | 19.62                | 19.96 | 20.15 |
| 4 Txslots                | 22.17                | 22.67 | 21.77 | 23.50   | -3.01       | 19.16                | 19.66 | 18.76 |
| PCS1900<br>EGPRS (GMSK)  | Measured Power (dBm) |       |       |         | calculation | Averaged Power (dBm) |       |       |
|                          | 810                  | 661   | 512   |         |             | 810                  | 661   | 512   |
| 1 Txslot                 | 27.96                | 27.90 | 28.07 | 29.50   | -9.03       | 18.93                | 18.87 | 19.04 |
| 2 Txslots                | 24.81                | 25.37 | 25.59 | 26.00   | -6.02       | 18.79                | 19.35 | 19.57 |
| <b>3Txslots</b>          | 23.68                | 24.22 | 24.38 | 25.00   | -4.26       | 19.42                | 19.96 | 20.12 |
| 4 Txslots                | 22.15                | 22.67 | 21.75 | 23.50   | -3.01       | 19.14                | 19.66 | 18.74 |
| PCS1900<br>EGPRS (8PSK)  | Measured Power (dBm) |       |       |         | calculation | Averaged Power (dBm) |       |       |
|                          | 810                  | 661   | 512   |         |             | 810                  | 661   | 512   |
| 1 Txslot                 | 25.83                | 26.03 | 26.11 | 27.00   | -9.03       | 16.80                | 17.00 | 17.08 |
| 2 Txslots                | 22.76                | 23.21 | 22.98 | 24.00   | -6.02       | 16.74                | 17.19 | 16.96 |
| 3Txslots                 | 21.49                | 21.31 | 21.26 | 23.00   | -4.26       | 17.23                | 17.05 | 17.00 |
| 4 Txslots                | 19.87                | 19.96 | 20.15 | 21.00   | -3.01       | 16.86                | 16.95 | 17.14 |

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 3Txslots for GSM1900.**

## 11.2 WCDMA Measurement result

Table 11.2-1: The conducted Power for WCDMA B5

| WCDMA850 | FDDV result (dBm)       |                         |                         | Tune up |
|----------|-------------------------|-------------------------|-------------------------|---------|
|          | 4233/4458<br>(846.6MHz) | 4183/4408<br>(836.6MHz) | 4132/4357<br>(826.4MHz) |         |
|          | 22.74                   | 22.72                   | 22.47                   |         |
| HSUPA    | 21.07                   | 21.18                   | 21.18                   | 22.50   |
|          | 20.97                   | 21.16                   | 21.01                   | 22.50   |
|          | 21.07                   | 21.17                   | 21.15                   | 22.50   |
|          | 21.01                   | 21.12                   | 21.50                   | 22.50   |
|          | 21.01                   | 21.06                   | 21.68                   | 22.50   |
| HSPA+    | 20.87                   | 20.99                   | 21.02                   | 22.50   |
| DC-HSDPA | 21.52                   | 21.53                   | 21.51                   | 23.00   |
|          | 21.52                   | 21.52                   | 21.61                   | 23.00   |
|          | 21.01                   | 21.10                   | 21.16                   | 22.50   |
|          | 21.00                   | 21.09                   | 21.15                   | 22.50   |

Table 11.2-2: The conducted Power for WCDMA B2/B4 –Normal Power

| WCDMA1900 | FDDII result (dBm)       |                        |                          | Tune up |
|-----------|--------------------------|------------------------|--------------------------|---------|
|           | 9538/9938<br>(1907.6MHz) | 9400/9800<br>(1880MHz) | 9262/9662<br>(1852.4MHz) |         |
|           | 24.04                    | 24.32                  | 24.20                    |         |
| HSUPA     | 23.36                    | 23.28                  | 23.30                    | 25.00   |
|           | 21.97                    | 22.18                  | 22.56                    | 23.00   |
|           | 22.21                    | 22.39                  | 22.50                    | 23.50   |
|           | 22.43                    | 22.45                  | 22.43                    | 22.50   |
|           | 22.58                    | 22.79                  | 22.72                    | 24.00   |
| HSPA+     | 22.88                    | 22.89                  | 22.90                    | 24.00   |
| DC-HSDPA  | 23.51                    | 23.55                  | 23.52                    | 25.00   |
|           | 23.54                    | 23.57                  | 23.58                    | 25.00   |
|           | 23.07                    | 23.14                  | 23.17                    | 24.50   |
|           | 23.05                    | 23.16                  | 23.12                    | 24.50   |

| WCDMA1700 | FDDIV result (dBm)       |                          |                          | Tune up |
|-----------|--------------------------|--------------------------|--------------------------|---------|
|           | 1513/1738<br>(1752.6MHz) | 1412/1637<br>(1732.4MHz) | 1312/1537<br>(1712.4MHz) |         |
|           | 23.03                    | 22.98                    | 22.91                    |         |
| HSUPA     | 21.83                    | 21.70                    | 21.64                    | 23.00   |
|           | 21.87                    | 21.72                    | 21.75                    | 23.00   |
|           | 21.88                    | 21.83                    | 21.79                    | 23.00   |
|           | 21.96                    | 21.82                    | 21.79                    | 23.00   |
|           | 21.98                    | 21.88                    | 21.85                    | 23.00   |
| HSPA+     | 21.56                    | 21.42                    | 21.45                    | 23.00   |
| DC-HSDPA  | 21.90                    | 21.77                    | 21.69                    | 23.00   |
|           | 21.90                    | 21.75                    | 21.68                    | 23.00   |
|           | 21.52                    | 21.55                    | 21.53                    | 23.00   |
|           | 21.51                    | 21.56                    | 21.55                    | 23.00   |

Table 11.2-3: The conducted Power for WCDMA B2/B4 –Low Power

| WCDMA1900 | FDDII result (dBm) |           |             | Tune up |
|-----------|--------------------|-----------|-------------|---------|
|           | 9538/9938          | 9400/9800 | 9262/9662   |         |
|           | (1907.6MHz)        | (1880MHz) | (1852.4MHz) |         |
|           | 19.81              | 19.88     | 19.77       | 21.00   |
| HSUPA     | 20.64              | 20.69     | 20.61       | 21.00   |
|           | 19.34              | 19.46     | 19.84       | 20.50   |
|           | 19.45              | 19.43     | 19.38       | 20.50   |
|           | 19.81              | 19.87     | 19.72       | 20.50   |
|           | 19.96              | 19.93     | 19.93       | 20.50   |
| HSPA+     | 20.23              | 20.16     | 20.40       | 21.00   |
| DC-HSDPA  | 20.92              | 20.82     | 20.99       | 21.00   |
|           | 20.90              | 20.79     | 20.92       | 21.00   |
|           | 20.35              | 20.48     | 20.46       | 20.50   |
|           | 20.39              | 20.44     | 20.46       | 20.50   |

| WCDMA1700 | FDDIV result (dBm) |             |             | Tune up |
|-----------|--------------------|-------------|-------------|---------|
|           | 1513/1738          | 1412/1637   | 1312/1537   |         |
|           | (1752.6MHz)        | (1732.4MHz) | (1712.4MHz) |         |
|           | 20.25              | 20.12       | 20.06       | 20.50   |
| HSUPA     | 18.19              | 18.18       | 18.12       | 20.00   |
|           | 17.98              | 17.95       | 17.93       | 18.50   |
|           | 18.31              | 18.05       | 18.22       | 18.50   |
|           | 18.34              | 18.16       | 18.09       | 18.50   |
|           | 18.45              | 18.28       | 18.35       | 19.00   |
| HSPA+     | 18.06              | 17.63       | 17.85       | 19.00   |
| DC-HSDPA  | 18.28              | 18.15       | 17.97       | 19.00   |
|           | 18.38              | 18.12       | 18.11       | 19.00   |
|           | 17.81              | 17.88       | 17.64       | 18.50   |
|           | 17.69              | 17.82       | 17.74       | 18.50   |

### 11.3 LTE Measurement result

#### Maximum Target Power for Production Unit

| Band        | Tune up (dBm) |           |
|-------------|---------------|-----------|
|             | Normal power  | Low power |
| LTE B2      | 25.5          | 21.5      |
| LTE B5      | 25.5          | 25.5      |
| LTE B7      | 24.5          | 21        |
| LTE B12     | 25            | 25        |
| LTE B13     | 24            | 24        |
| LTE B41-PC3 | 24.5          | 22.5      |
| LTE B41-PC2 | 26.5          | 22        |
| LTE B66     | 25            | 21        |
| LTE B71     | 24.5          | 24.5      |

| LTE Band2-Normal power |                |                |       |       |
|------------------------|----------------|----------------|-------|-------|
| BANDWIDTH              | Number of RBs  | Frequency      | QPSK  | 16QAM |
| 1.4MHz                 | 1RB-High (5)   | 1909.3 (19193) | 23.86 | 23.43 |
|                        |                | 1880 (18900)   | 24.36 | 23.74 |
|                        |                | 1850.7 (18607) | 23.90 | 23.51 |
|                        | 1RB-Middle (3) | 1909.3 (19193) | 24.21 | 23.22 |
|                        |                | 1880 (18900)   | 24.35 | 22.91 |
|                        |                | 1850.7 (18607) | 23.94 | 23.25 |
|                        | 1RB-Low (0)    | 1909.3 (19193) | 23.94 | 22.89 |
|                        |                | 1880 (18900)   | 24.23 | 22.76 |
|                        |                | 1850.7 (18607) | 24.13 | 23.17 |
|                        | 3RB-High (3)   | 1909.3 (19193) | 24.30 | 23.03 |
|                        |                | 1880 (18900)   | 24.44 | 23.57 |
|                        |                | 1850.7 (18607) | 24.22 | 23.00 |
|                        | 3RB-Middle (1) | 1909.3 (19193) | 24.46 | 23.15 |
|                        |                | 1880 (18900)   | 24.57 | 23.66 |
|                        |                | 1850.7 (18607) | 24.25 | 23.03 |
|                        | 3RB-Low (0)    | 1909.3 (19193) | 24.33 | 23.22 |
|                        |                | 1880 (18900)   | 24.53 | 23.26 |
|                        |                | 1850.7 (18607) | 24.20 | 23.01 |
|                        | 6RB (0)        | 1909.3 (19193) | 23.17 | 22.27 |
|                        |                | 1880 (18900)   | 23.27 | 22.29 |
|                        |                | 1850.7 (18607) | 23.23 | 21.96 |
| 3MHz                   | 1RB-High (14)  | 1908.5 (19185) | 24.21 | 22.91 |
|                        |                | 1880 (18900)   | 24.38 | 22.79 |
|                        |                | 1851.5 (18615) | 24.13 | 22.72 |
|                        | 1RB-Middle (7) | 1908.5 (19185) | 24.24 | 23.00 |
|                        |                | 1880 (18900)   | 24.47 | 23.05 |
|                        |                | 1851.5 (18615) | 24.26 | 22.86 |
|                        | 1RB-Low (0)    | 1908.5 (19185) | 24.29 | 22.73 |
|                        |                | 1880 (18900)   | 24.34 | 22.98 |
|                        |                | 1851.5 (18615) | 24.10 | 22.89 |
|                        | 8RB-High (7)   | 1908.5 (19185) | 23.39 | 22.32 |
|                        |                | 1880 (18900)   | 23.43 | 22.17 |
|                        |                | 1851.5 (18615) | 23.17 | 22.38 |
|                        | 8RB-Middle (4) | 1908.5 (19185) | 23.41 | 22.39 |
|                        |                | 1880 (18900)   | 23.21 | 22.27 |
|                        |                | 1851.5 (18615) | 23.21 | 22.33 |
|                        | 8RB-Low (0)    | 1908.5 (19185) | 23.45 | 22.34 |
|                        |                | 1880 (18900)   | 23.56 | 22.66 |
|                        |                | 1851.5 (18615) | 23.18 | 22.27 |
|                        | 15RB (0)       | 1908.5 (19185) | 23.30 | 22.26 |
|                        |                | 1880 (18900)   | 23.39 | 22.20 |
|                        |                | 1851.5 (18615) | 23.17 | 22.14 |

|       |                  |                |       |       |
|-------|------------------|----------------|-------|-------|
| 5MHz  | 1RB-High (24)    | 1907.5 (19175) | 24.15 | 22.92 |
|       |                  | 1880 (18900)   | 24.14 | 22.56 |
|       |                  | 1852.5 (18625) | 24.01 | 23.05 |
|       | 1RB-Middle (12)  | 1907.5 (19175) | 24.30 | 23.53 |
|       |                  | 1880 (18900)   | 24.49 | 23.11 |
|       |                  | 1852.5 (18625) | 24.08 | 22.92 |
|       | 1RB-Low (0)      | 1907.5 (19175) | 24.11 | 22.77 |
|       |                  | 1880 (18900)   | 24.21 | 22.76 |
|       |                  | 1852.5 (18625) | 24.08 | 22.79 |
|       | 12RB-High (13)   | 1907.5 (19175) | 23.25 | 22.06 |
|       |                  | 1880 (18900)   | 23.26 | 22.08 |
|       |                  | 1852.5 (18625) | 23.22 | 22.11 |
|       | 12RB-Middle (6)  | 1907.5 (19175) | 23.37 | 22.11 |
|       |                  | 1880 (18900)   | 23.38 | 22.17 |
|       |                  | 1852.5 (18625) | 23.23 | 22.31 |
|       | 12RB-Low (0)     | 1907.5 (19175) | 23.28 | 22.20 |
|       |                  | 1880 (18900)   | 23.27 | 22.22 |
|       |                  | 1852.5 (18625) | 23.10 | 22.26 |
|       | 25RB (0)         | 1907.5 (19175) | 23.21 | 22.23 |
|       |                  | 1880 (18900)   | 23.29 | 22.40 |
|       |                  | 1852.5 (18625) | 23.08 | 22.23 |
| 10MHz | 1RB-High (49)    | 1905 (19150)   | 24.30 | 22.83 |
|       |                  | 1880 (18900)   | 24.21 | 22.90 |
|       |                  | 1855 (18650)   | 24.23 | 23.46 |
|       | 1RB-Middle (24)  | 1905 (19150)   | 24.20 | 22.76 |
|       |                  | 1880 (18900)   | 24.39 | 23.03 |
|       |                  | 1855 (18650)   | 24.06 | 23.10 |
|       | 1RB-Low (0)      | 1905 (19150)   | 24.08 | 22.93 |
|       |                  | 1880 (18900)   | 24.04 | 22.89 |
|       |                  | 1855 (18650)   | 23.99 | 22.99 |
|       | 25RB-High (25)   | 1905 (19150)   | 23.30 | 22.21 |
|       |                  | 1880 (18900)   | 23.26 | 22.37 |
|       |                  | 1855 (18650)   | 23.28 | 22.22 |
|       | 25RB-Middle (12) | 1905 (19150)   | 23.39 | 22.30 |
|       |                  | 1880 (18900)   | 23.43 | 22.23 |
|       |                  | 1855 (18650)   | 23.30 | 22.24 |
|       | 25RB-Low (0)     | 1905 (19150)   | 23.21 | 22.21 |
|       |                  | 1880 (18900)   | 23.36 | 22.57 |
|       |                  | 1855 (18650)   | 23.23 | 22.09 |
|       | 50RB (0)         | 1905 (19150)   | 23.33 | 22.35 |
|       |                  | 1880 (18900)   | 23.31 | 22.35 |
|       |                  | 1855 (18650)   | 23.24 | 22.29 |



|       |                  |                |       |       |
|-------|------------------|----------------|-------|-------|
| 15MHz | 1RB-High (74)    | 1902.5 (19125) | 23.97 | 22.93 |
|       |                  | 1880 (18900)   | 24.38 | 22.89 |
|       |                  | 1857.5 (18675) | 24.30 | 23.70 |
|       | 1RB-Middle (37)  | 1902.5 (19125) | 24.20 | 22.68 |
|       |                  | 1880 (18900)   | 24.48 | 22.80 |
|       |                  | 1857.5 (18675) | 24.21 | 23.38 |
|       | 1RB-Low (0)      | 1902.5 (19125) | 24.29 | 22.93 |
|       |                  | 1880 (18900)   | 24.35 | 22.91 |
|       |                  | 1857.5 (18675) | 24.26 | 22.88 |
|       | 36RB-High (38)   | 1902.5 (19125) | 23.35 | 22.26 |
|       |                  | 1880 (18900)   | 23.34 | 22.32 |
|       |                  | 1857.5 (18675) | 23.35 | 22.26 |
|       | 36RB-Middle (19) | 1902.5 (19125) | 23.29 | 22.21 |
|       |                  | 1880 (18900)   | 23.28 | 22.26 |
|       |                  | 1857.5 (18675) | 23.22 | 22.31 |
|       | 36RB-Low (0)     | 1902.5 (19125) | 23.32 | 22.26 |
|       |                  | 1880 (18900)   | 23.43 | 22.29 |
|       |                  | 1857.5 (18675) | 23.11 | 22.10 |
|       | 75RB (0)         | 1902.5 (19125) | 23.36 | 22.30 |
|       |                  | 1880 (18900)   | 23.13 | 22.45 |
|       |                  | 1857.5 (18675) | 23.24 | 22.23 |
| 20MHz | 1RB-High (99)    | 1900 (19100)   | 24.25 | 22.86 |
|       |                  | 1880 (18900)   | 24.35 | 22.76 |
|       |                  | 1860 (18700)   | 24.22 | 22.82 |
|       | 1RB-Middle (50)  | 1900 (19100)   | 24.32 | 23.97 |
|       |                  | 1880 (18900)   | 24.66 | 23.32 |
|       |                  | 1860 (18700)   | 24.41 | 22.89 |
|       | 1RB-Low (0)      | 1900 (19100)   | 24.03 | 22.87 |
|       |                  | 1880 (18900)   | 24.32 | 22.86 |
|       |                  | 1860 (18700)   | 24.19 | 22.89 |
|       | 50RB-High (50)   | 1900 (19100)   | 23.23 | 22.36 |
|       |                  | 1880 (18900)   | 23.21 | 22.36 |
|       |                  | 1860 (18700)   | 23.20 | 22.11 |
|       | 50RB-Middle (25) | 1900 (19100)   | 23.35 | 22.30 |
|       |                  | 1880 (18900)   | 23.69 | 22.41 |
|       |                  | 1860 (18700)   | 23.39 | 22.30 |
|       | 50RB-Low (0)     | 1900 (19100)   | 23.32 | 22.29 |
|       |                  | 1880 (18900)   | 23.27 | 22.35 |
|       |                  | 1860 (18700)   | 23.25 | 22.27 |
|       | 100RB (0)        | 1900 (19100)   | 23.46 | 22.34 |
|       |                  | 1880 (18900)   | 23.30 | 22.25 |
|       |                  | 1860 (18700)   | 23.12 | 22.17 |

| LTE Band2-Low power |                |                |       |       |
|---------------------|----------------|----------------|-------|-------|
| BANDWIDTH           | Number of RBs  | Frequency      | QPSK  | 16QAM |
| 1.4MHz              | 1RB-High (5)   | 1909.3 (19193) | 20.80 | 20.66 |
|                     |                | 1880 (18900)   | 21.27 | 20.74 |
|                     |                | 1850.7 (18607) | 21.19 | 21.10 |
|                     | 1RB-Middle (3) | 1909.3 (19193) | 21.00 | 20.79 |
|                     |                | 1880 (18900)   | 21.39 | 20.99 |
|                     |                | 1850.7 (18607) | 21.26 | 20.97 |
|                     | 1RB-Low (0)    | 1909.3 (19193) | 20.92 | 20.94 |
|                     |                | 1880 (18900)   | 21.17 | 20.90 |
|                     |                | 1850.7 (18607) | 21.21 | 20.71 |
|                     | 3RB-High (3)   | 1909.3 (19193) | 21.31 | 21.37 |
|                     |                | 1880 (18900)   | 21.41 | 21.12 |
|                     |                | 1850.7 (18607) | 21.32 | 21.07 |
|                     | 3RB-Middle (1) | 1909.3 (19193) | 21.34 | 20.97 |
|                     |                | 1880 (18900)   | 21.39 | 21.29 |
|                     |                | 1850.7 (18607) | 21.36 | 21.19 |
|                     | 3RB-Low (0)    | 1909.3 (19193) | 21.22 | 20.95 |
|                     |                | 1880 (18900)   | 21.47 | 21.27 |
|                     |                | 1850.7 (18607) | 21.33 | 21.18 |
|                     | 6RB (0)        | 1909.3 (19193) | 21.04 | 21.27 |
|                     |                | 1880 (18900)   | 21.28 | 21.39 |
|                     |                | 1850.7 (18607) | 21.15 | 21.36 |
| 3MHz                | 1RB-High (14)  | 1908.5 (19185) | 21.06 | 20.82 |
|                     |                | 1880 (18900)   | 21.28 | 20.75 |
|                     |                | 1851.5 (18615) | 21.25 | 20.79 |
|                     | 1RB-Middle (7) | 1908.5 (19185) | 21.16 | 21.03 |
|                     |                | 1880 (18900)   | 21.43 | 21.18 |
|                     |                | 1851.5 (18615) | 21.39 | 20.82 |
|                     | 1RB-Low (0)    | 1908.5 (19185) | 21.09 | 21.07 |
|                     |                | 1880 (18900)   | 21.28 | 20.62 |
|                     |                | 1851.5 (18615) | 21.08 | 20.94 |
|                     | 8RB-High (7)   | 1908.5 (19185) | 21.18 | 21.30 |
|                     |                | 1880 (18900)   | 21.36 | 21.42 |
|                     |                | 1851.5 (18615) | 21.27 | 21.52 |
|                     | 8RB-Middle (4) | 1908.5 (19185) | 21.17 | 21.59 |
|                     |                | 1880 (18900)   | 21.37 | 21.36 |
|                     |                | 1851.5 (18615) | 21.32 | 21.39 |
|                     | 8RB-Low (0)    | 1908.5 (19185) | 21.26 | 21.21 |
|                     |                | 1880 (18900)   | 21.41 | 21.40 |
|                     |                | 1851.5 (18615) | 21.31 | 21.48 |
|                     | 15RB (0)       | 1908.5 (19185) | 21.13 | 21.09 |
|                     |                | 1880 (18900)   | 21.24 | 21.29 |
|                     |                | 1851.5 (18615) | 21.29 | 21.22 |

|       |                  |                |       |       |
|-------|------------------|----------------|-------|-------|
| 5MHz  | 1RB-High (24)    | 1907.5 (19175) | 20.85 | 20.60 |
|       |                  | 1880 (18900)   | 21.16 | 20.96 |
|       |                  | 1852.5 (18625) | 21.15 | 21.01 |
|       | 1RB-Middle (12)  | 1907.5 (19175) | 21.10 | 20.88 |
|       |                  | 1880 (18900)   | 21.20 | 20.98 |
|       |                  | 1852.5 (18625) | 21.26 | 20.90 |
|       | 1RB-Low (0)      | 1907.5 (19175) | 21.13 | 20.68 |
|       |                  | 1880 (18900)   | 21.15 | 21.00 |
|       |                  | 1852.5 (18625) | 21.27 | 20.89 |
|       | 12RB-High (13)   | 1907.5 (19175) | 21.13 | 20.89 |
|       |                  | 1880 (18900)   | 21.29 | 21.30 |
|       |                  | 1852.5 (18625) | 21.15 | 21.08 |
|       | 12RB-Middle (6)  | 1907.5 (19175) | 21.20 | 21.08 |
|       |                  | 1880 (18900)   | 21.37 | 21.31 |
|       |                  | 1852.5 (18625) | 21.26 | 21.29 |
|       | 12RB-Low (0)     | 1907.5 (19175) | 21.20 | 21.19 |
|       |                  | 1880 (18900)   | 21.33 | 21.26 |
|       |                  | 1852.5 (18625) | 21.27 | 21.30 |
|       | 25RB (0)         | 1907.5 (19175) | 21.16 | 21.25 |
|       |                  | 1880 (18900)   | 21.33 | 21.26 |
|       |                  | 1852.5 (18625) | 21.22 | 21.32 |
| 10MHz | 1RB-High (49)    | 1905 (19150)   | 21.27 | 20.91 |
|       |                  | 1880 (18900)   | 21.41 | 21.61 |
|       |                  | 1855 (18650)   | 21.28 | 20.79 |
|       | 1RB-Middle (24)  | 1905 (19150)   | 21.32 | 20.63 |
|       |                  | 1880 (18900)   | 21.49 | 21.26 |
|       |                  | 1855 (18650)   | 21.35 | 21.34 |
|       | 1RB-Low (0)      | 1905 (19150)   | 21.21 | 20.99 |
|       |                  | 1880 (18900)   | 21.17 | 21.16 |
|       |                  | 1855 (18650)   | 21.17 | 20.97 |
|       | 25RB-High (25)   | 1905 (19150)   | 21.16 | 21.06 |
|       |                  | 1880 (18900)   | 21.40 | 21.40 |
|       |                  | 1855 (18650)   | 21.19 | 21.17 |
|       | 25RB-Middle (12) | 1905 (19150)   | 21.24 | 21.32 |
|       |                  | 1880 (18900)   | 21.39 | 21.56 |
|       |                  | 1855 (18650)   | 21.34 | 21.45 |
|       | 25RB-Low (0)     | 1905 (19150)   | 21.29 | 21.28 |
|       |                  | 1880 (18900)   | 21.37 | 21.47 |
|       |                  | 1855 (18650)   | 21.21 | 21.31 |
|       | 50RB (0)         | 1905 (19150)   | 21.23 | 21.23 |
|       |                  | 1880 (18900)   | 21.43 | 21.43 |
|       |                  | 1855 (18650)   | 21.33 | 21.25 |

|       |                  |                |       |       |
|-------|------------------|----------------|-------|-------|
| 15MHz | 1RB-High (74)    | 1902.5 (19125) | 21.26 | 21.27 |
|       |                  | 1880 (18900)   | 21.23 | 21.54 |
|       |                  | 1857.5 (18675) | 21.17 | 21.45 |
|       | 1RB-Middle (37)  | 1902.5 (19125) | 21.22 | 21.37 |
|       |                  | 1880 (18900)   | 21.34 | 21.42 |
|       |                  | 1857.5 (18675) | 21.23 | 21.33 |
|       | 1RB-Low (0)      | 1902.5 (19125) | 21.29 | 20.92 |
|       |                  | 1880 (18900)   | 21.20 | 21.02 |
|       |                  | 1857.5 (18675) | 21.19 | 20.94 |
|       | 36RB-High (38)   | 1902.5 (19125) | 21.31 | 21.28 |
|       |                  | 1880 (18900)   | 21.39 | 21.26 |
|       |                  | 1857.5 (18675) | 21.23 | 21.22 |
|       | 36RB-Middle (19) | 1902.5 (19125) | 21.32 | 21.24 |
|       |                  | 1880 (18900)   | 21.38 | 21.43 |
|       |                  | 1857.5 (18675) | 21.21 | 21.20 |
|       | 36RB-Low (0)     | 1902.5 (19125) | 21.22 | 21.29 |
|       |                  | 1880 (18900)   | 21.32 | 21.28 |
|       |                  | 1857.5 (18675) | 21.20 | 21.24 |
|       | 75RB (0)         | 1902.5 (19125) | 21.37 | 21.43 |
|       |                  | 1880 (18900)   | 21.30 | 21.36 |
|       |                  | 1857.5 (18675) | 21.26 | 21.23 |
| 20MHz | 1RB-High (99)    | 1900 (19100)   | 20.98 | 20.41 |
|       |                  | 1880 (18900)   | 21.06 | 20.92 |
|       |                  | 1860 (18700)   | 21.21 | 20.81 |
|       | 1RB-Middle (50)  | 1900 (19100)   | 21.25 | 21.49 |
|       |                  | 1880 (18900)   | 21.28 | 21.35 |
|       |                  | 1860 (18700)   | 21.26 | 20.67 |
|       | 1RB-Low (0)      | 1900 (19100)   | 20.79 | 20.71 |
|       |                  | 1880 (18900)   | 21.08 | 20.82 |
|       |                  | 1860 (18700)   | 20.90 | 20.24 |
|       | 50RB-High (50)   | 1900 (19100)   | 21.09 | 21.07 |
|       |                  | 1880 (18900)   | 21.19 | 21.15 |
|       |                  | 1860 (18700)   | 21.16 | 21.22 |
|       | 50RB-Middle (25) | 1900 (19100)   | 21.20 | 21.17 |
|       |                  | 1880 (18900)   | 21.25 | 21.30 |
|       |                  | 1860 (18700)   | 21.19 | 21.15 |
|       | 50RB-Low (0)     | 1900 (19100)   | 21.10 | 21.10 |
|       |                  | 1880 (18900)   | 21.22 | 21.21 |
|       |                  | 1860 (18700)   | 20.95 | 21.05 |
|       | 100RB (0)        | 1900 (19100)   | 21.18 | 21.06 |
|       |                  | 1880 (18900)   | 21.22 | 21.30 |
|       |                  | 1860 (18700)   | 21.15 | 21.14 |

| LTE Band5 |                |               |       |       |
|-----------|----------------|---------------|-------|-------|
| BANDWIDTH | Number of RBs  | Frequency     | QPSK  | 16QAM |
| 1.4MHz    | 1RB-High (5)   | 848.3 (20643) | 23.58 | 22.91 |
|           |                | 836.5 (20525) | 24.67 | 23.23 |
|           |                | 824.7 (20407) | 24.43 | 23.36 |
|           | 1RB-Middle (3) | 848.3 (20643) | 23.76 | 23.12 |
|           |                | 836.5 (20525) | 24.44 | 23.33 |
|           |                | 824.7 (20407) | 24.82 | 23.41 |
|           | 1RB-Low (0)    | 848.3 (20643) | 23.86 | 23.25 |
|           |                | 836.5 (20525) | 24.40 | 23.16 |
|           |                | 824.7 (20407) | 24.38 | 23.31 |
|           | 3RB-High (3)   | 848.3 (20643) | 23.67 | 22.83 |
|           |                | 836.5 (20525) | 24.80 | 23.42 |
|           |                | 824.7 (20407) | 24.78 | 24.00 |
|           | 3RB-Middle (1) | 848.3 (20643) | 23.79 | 22.97 |
|           |                | 836.5 (20525) | 24.59 | 23.60 |
|           |                | 824.7 (20407) | 24.87 | 23.92 |
|           | 3RB-Low (0)    | 848.3 (20643) | 23.81 | 23.00 |
|           |                | 836.5 (20525) | 24.78 | 23.55 |
|           |                | 824.7 (20407) | 24.82 | 23.66 |
|           | 6RB (0)        | 848.3 (20643) | 23.74 | 22.94 |
|           |                | 836.5 (20525) | 23.44 | 22.78 |
|           |                | 824.7 (20407) | 23.65 | 22.50 |
| 3MHz      | 1RB-High (14)  | 847.5 (20635) | 23.51 | 22.93 |
|           |                | 836.5 (20525) | 24.66 | 23.23 |
|           |                | 825.5 (20415) | 24.41 | 23.62 |
|           | 1RB-Middle (7) | 847.5 (20635) | 24.03 | 23.38 |
|           |                | 836.5 (20525) | 24.86 | 23.30 |
|           |                | 825.5 (20415) | 24.97 | 23.43 |
|           | 1RB-Low (0)    | 847.5 (20635) | 24.27 | 23.69 |
|           |                | 836.5 (20525) | 24.76 | 23.15 |
|           |                | 825.5 (20415) | 24.71 | 23.30 |
|           | 8RB-High (7)   | 847.5 (20635) | 23.80 | 22.84 |
|           |                | 836.5 (20525) | 23.54 | 22.72 |
|           |                | 825.5 (20415) | 23.53 | 22.77 |
|           | 8RB-Middle (4) | 847.5 (20635) | 23.83 | 22.90 |
|           |                | 836.5 (20525) | 23.65 | 22.89 |
|           |                | 825.5 (20415) | 23.49 | 22.88 |
|           | 8RB-Low (0)    | 847.5 (20635) | 23.77 | 22.99 |
|           |                | 836.5 (20525) | 23.53 | 22.91 |
|           |                | 825.5 (20415) | 23.68 | 22.91 |
|           | 15RB (0)       | 847.5 (20635) | 23.66 | 22.74 |
|           |                | 836.5 (20525) | 23.61 | 22.74 |
|           |                | 825.5 (20415) | 23.74 | 22.71 |

|       |                  |               |       |       |
|-------|------------------|---------------|-------|-------|
| 5MHz  | 1RB-High (24)    | 846.5 (20625) | 24.46 | 22.89 |
|       |                  | 836.5 (20525) | 24.61 | 23.34 |
|       |                  | 826.5 (20425) | 24.78 | 22.94 |
|       | 1RB-Middle (12)  | 846.5 (20625) | 24.33 | 23.69 |
|       |                  | 836.5 (20525) | 24.87 | 23.27 |
|       |                  | 826.5 (20425) | 25.04 | 23.40 |
|       | 1RB-Low (0)      | 846.5 (20625) | 24.55 | 22.98 |
|       |                  | 836.5 (20525) | 24.35 | 23.03 |
|       |                  | 826.5 (20425) | 24.66 | 23.09 |
|       | 12RB-High (13)   | 846.5 (20625) | 23.61 | 22.79 |
|       |                  | 836.5 (20525) | 23.66 | 22.68 |
|       |                  | 826.5 (20425) | 23.84 | 22.63 |
|       | 12RB-Middle (6)  | 846.5 (20625) | 23.73 | 22.63 |
|       |                  | 836.5 (20525) | 23.69 | 22.45 |
|       |                  | 826.5 (20425) | 23.87 | 22.85 |
|       | 12RB-Low (0)     | 846.5 (20625) | 23.52 | 22.62 |
|       |                  | 836.5 (20525) | 23.69 | 22.44 |
|       |                  | 826.5 (20425) | 23.70 | 22.48 |
|       | 25RB (0)         | 846.5 (20625) | 23.70 | 22.82 |
|       |                  | 836.5 (20525) | 23.62 | 22.70 |
|       |                  | 826.5 (20425) | 23.79 | 22.74 |
| 10MHz | 1RB-High (49)    | 844 (20600)   | 24.37 | 23.46 |
|       |                  | 836.5 (20525) | 24.58 | 23.58 |
|       |                  | 829 (20450)   | 24.73 | 23.89 |
|       | 1RB-Middle (24)  | 844 (20600)   | 25.11 | 24.29 |
|       |                  | 836.5 (20525) | 24.96 | 23.29 |
|       |                  | 829 (20450)   | 24.85 | 23.78 |
|       | 1RB-Low (0)      | 844 (20600)   | 24.80 | 23.42 |
|       |                  | 836.5 (20525) | 24.72 | 23.39 |
|       |                  | 829 (20450)   | 24.79 | 23.45 |
|       | 25RB-High (25)   | 844 (20600)   | 23.82 | 23.01 |
|       |                  | 836.5 (20525) | 23.83 | 22.89 |
|       |                  | 829 (20450)   | 23.84 | 22.90 |
|       | 25RB-Middle (12) | 844 (20600)   | 23.86 | 22.79 |
|       |                  | 836.5 (20525) | 23.85 | 22.83 |
|       |                  | 829 (20450)   | 23.76 | 22.92 |
|       | 25RB-Low (0)     | 844 (20600)   | 23.82 | 22.84 |
|       |                  | 836.5 (20525) | 23.71 | 22.85 |
|       |                  | 829 (20450)   | 23.81 | 22.98 |
|       | 50RB (0)         | 844 (20600)   | 23.83 | 23.10 |
|       |                  | 836.5 (20525) | 23.81 | 22.78 |
|       |                  | 829 (20450)   | 23.90 | 22.89 |

| LTE Band7-Normal power |                  |                |       |       |
|------------------------|------------------|----------------|-------|-------|
| BANDWIDTH              | Number of RBs    | Frequency      | QPSK  | 16QAM |
| 5MHz                   | 1RB-High (24)    | 2567.5 (21425) | 23.65 | 22.08 |
|                        |                  | 2535 (21100)   | 23.57 | 21.76 |
|                        |                  | 2502.5 (20775) | 23.63 | 22.08 |
|                        | 1RB-Middle (12)  | 2567.5 (21425) | 23.75 | 22.25 |
|                        |                  | 2535 (21100)   | 23.51 | 22.17 |
|                        |                  | 2502.5 (20775) | 23.58 | 22.37 |
|                        | 1RB-Low (0)      | 2567.5 (21425) | 23.81 | 22.10 |
|                        |                  | 2535 (21100)   | 23.44 | 21.59 |
|                        |                  | 2502.5 (20775) | 23.58 | 22.12 |
|                        | 12RB-High (13)   | 2567.5 (21425) | 22.69 | 21.64 |
|                        |                  | 2535 (21100)   | 22.46 | 21.52 |
|                        |                  | 2502.5 (20775) | 22.67 | 21.71 |
|                        | 12RB-Middle (6)  | 2567.5 (21425) | 22.67 | 21.63 |
|                        |                  | 2535 (21100)   | 22.46 | 21.60 |
|                        |                  | 2502.5 (20775) | 22.68 | 21.62 |
|                        | 12RB-Low (0)     | 2567.5 (21425) | 22.65 | 21.79 |
|                        |                  | 2535 (21100)   | 22.46 | 21.55 |
|                        |                  | 2502.5 (20775) | 22.69 | 21.66 |
|                        | 25RB (0)         | 2567.5 (21425) | 22.67 | 21.63 |
|                        |                  | 2535 (21100)   | 22.57 | 21.64 |
|                        |                  | 2502.5 (20775) | 22.73 | 21.70 |
| 10MHz                  | 1RB-High (49)    | 2565 (21400)   | 23.84 | 22.48 |
|                        |                  | 2535 (21100)   | 23.55 | 21.93 |
|                        |                  | 2505 (20800)   | 23.70 | 22.85 |
|                        | 1RB-Middle (24)  | 2565 (21400)   | 23.95 | 22.15 |
|                        |                  | 2535 (21100)   | 23.76 | 22.07 |
|                        |                  | 2505 (20800)   | 23.90 | 22.61 |
|                        | 1RB-Low (0)      | 2565 (21400)   | 23.95 | 22.31 |
|                        |                  | 2535 (21100)   | 23.64 | 22.31 |
|                        |                  | 2505 (20800)   | 23.85 | 22.26 |
|                        | 25RB-High (25)   | 2565 (21400)   | 22.69 | 21.95 |
|                        |                  | 2535 (21100)   | 22.61 | 21.74 |
|                        |                  | 2505 (20800)   | 22.81 | 21.84 |
|                        | 25RB-Middle (12) | 2565 (21400)   | 22.76 | 21.92 |
|                        |                  | 2535 (21100)   | 22.55 | 21.67 |
|                        |                  | 2505 (20800)   | 22.73 | 21.94 |
|                        | 25RB-Low (0)     | 2565 (21400)   | 22.78 | 21.99 |
|                        |                  | 2535 (21100)   | 22.61 | 21.73 |
|                        |                  | 2505 (20800)   | 22.78 | 21.80 |
|                        | 50RB (0)         | 2565 (21400)   | 22.87 | 21.96 |
|                        |                  | 2535 (21100)   | 22.50 | 21.65 |
|                        |                  | 2505 (20800)   | 22.79 | 21.74 |

|       |                  |                |       |       |
|-------|------------------|----------------|-------|-------|
| 15MHz | 1RB-High (74)    | 2562.5 (21375) | 23.81 | 22.51 |
|       |                  | 2535 (21100)   | 23.59 | 22.03 |
|       |                  | 2507.5 (20825) | 23.72 | 22.08 |
|       | 1RB-Middle (37)  | 2562.5 (21375) | 23.85 | 22.60 |
|       |                  | 2535 (21100)   | 23.65 | 22.02 |
|       |                  | 2507.5 (20825) | 23.72 | 22.23 |
|       | 1RB-Low (0)      | 2562.5 (21375) | 23.86 | 22.10 |
|       |                  | 2535 (21100)   | 23.72 | 22.19 |
|       |                  | 2507.5 (20825) | 23.70 | 22.47 |
|       | 36RB-High (38)   | 2562.5 (21375) | 22.81 | 21.84 |
|       |                  | 2535 (21100)   | 22.58 | 21.66 |
|       |                  | 2507.5 (20825) | 22.67 | 21.62 |
|       | 36RB-Middle (19) | 2562.5 (21375) | 22.93 | 22.00 |
|       |                  | 2535 (21100)   | 22.58 | 21.58 |
|       |                  | 2507.5 (20825) | 22.70 | 21.72 |
|       | 36RB-Low (0)     | 2562.5 (21375) | 22.94 | 21.78 |
|       |                  | 2535 (21100)   | 22.63 | 21.65 |
|       |                  | 2507.5 (20825) | 22.74 | 21.88 |
|       | 75RB (0)         | 2562.5 (21375) | 22.77 | 21.92 |
|       |                  | 2535 (21100)   | 22.55 | 21.65 |
|       |                  | 2507.5 (20825) | 22.71 | 21.85 |
| 20MHz | 1RB-High (99)    | 2560 (21350)   | 23.67 | 22.07 |
|       |                  | 2535 (21100)   | 23.38 | 21.93 |
|       |                  | 2510 (20850)   | 23.40 | 21.95 |
|       | 1RB-Middle (50)  | 2560 (21350)   | 23.89 | 22.43 |
|       |                  | 2535 (21100)   | 23.55 | 22.07 |
|       |                  | 2510 (20850)   | 23.74 | 22.35 |
|       | 1RB-Low (0)      | 2560 (21350)   | 23.52 | 22.06 |
|       |                  | 2535 (21100)   | 23.44 | 21.80 |
|       |                  | 2510 (20850)   | 23.61 | 22.34 |
|       | 50RB-High (50)   | 2560 (21350)   | 22.55 | 21.69 |
|       |                  | 2535 (21100)   | 22.32 | 21.34 |
|       |                  | 2510 (20850)   | 22.44 | 21.58 |
|       | 50RB-Middle (25) | 2560 (21350)   | 22.65 | 21.91 |
|       |                  | 2535 (21100)   | 22.45 | 21.42 |
|       |                  | 2510 (20850)   | 22.58 | 21.66 |
|       | 50RB-Low (0)     | 2560 (21350)   | 22.57 | 21.83 |
|       |                  | 2535 (21100)   | 22.24 | 21.36 |
|       |                  | 2510 (20850)   | 22.55 | 21.69 |
|       | 100RB (0)        | 2560 (21350)   | 22.50 | 21.56 |
|       |                  | 2535 (21100)   | 22.33 | 21.35 |
|       |                  | 2510 (20850)   | 22.44 | 21.58 |



| LTE Band7-Low power |                  |                |       |       |
|---------------------|------------------|----------------|-------|-------|
| BANDWIDTH           | Number of RBs    | Frequency      | QPSK  | 16QAM |
| 5MHz                | 1RB-High (24)    | 2567.5 (21425) | 20.07 | 19.82 |
|                     |                  | 2535 (21100)   | 19.83 | 19.94 |
|                     |                  | 2502.5 (20775) | 20.19 | 19.59 |
|                     | 1RB-Middle (12)  | 2567.5 (21425) | 20.42 | 20.19 |
|                     |                  | 2535 (21100)   | 19.78 | 19.65 |
|                     |                  | 2502.5 (20775) | 20.07 | 19.90 |
|                     | 1RB-Low (0)      | 2567.5 (21425) | 20.26 | 20.57 |
|                     |                  | 2535 (21100)   | 19.89 | 19.40 |
|                     |                  | 2502.5 (20775) | 20.05 | 19.77 |
|                     | 12RB-High (13)   | 2567.5 (21425) | 20.46 | 20.29 |
|                     |                  | 2535 (21100)   | 20.01 | 19.93 |
|                     |                  | 2502.5 (20775) | 20.18 | 20.20 |
|                     | 12RB-Middle (6)  | 2567.5 (21425) | 20.50 | 20.58 |
|                     |                  | 2535 (21100)   | 20.02 | 20.07 |
|                     |                  | 2502.5 (20775) | 20.30 | 20.37 |
|                     | 12RB-Low (0)     | 2567.5 (21425) | 20.51 | 20.47 |
|                     |                  | 2535 (21100)   | 19.99 | 20.01 |
|                     |                  | 2502.5 (20775) | 20.22 | 20.03 |
|                     | 25RB (0)         | 2567.5 (21425) | 20.42 | 20.55 |
|                     |                  | 2535 (21100)   | 19.91 | 20.02 |
|                     |                  | 2502.5 (20775) | 20.26 | 20.34 |
| 10MHz               | 1RB-High (49)    | 2565 (21400)   | 20.31 | 20.09 |
|                     |                  | 2535 (21100)   | 20.12 | 19.65 |
|                     |                  | 2505 (20800)   | 20.30 | 20.65 |
|                     | 1RB-Middle (24)  | 2565 (21400)   | 20.63 | 20.45 |
|                     |                  | 2535 (21100)   | 20.17 | 19.86 |
|                     |                  | 2505 (20800)   | 20.33 | 20.74 |
|                     | 1RB-Low (0)      | 2565 (21400)   | 20.50 | 20.07 |
|                     |                  | 2535 (21100)   | 19.78 | 19.26 |
|                     |                  | 2505 (20800)   | 19.98 | 19.91 |
|                     | 25RB-High (25)   | 2565 (21400)   | 20.52 | 20.35 |
|                     |                  | 2535 (21100)   | 20.07 | 20.01 |
|                     |                  | 2505 (20800)   | 20.34 | 20.36 |
|                     | 25RB-Middle (12) | 2565 (21400)   | 20.52 | 20.68 |
|                     |                  | 2535 (21100)   | 20.05 | 20.01 |
|                     |                  | 2505 (20800)   | 20.30 | 20.46 |
|                     | 25RB-Low (0)     | 2565 (21400)   | 20.48 | 20.63 |
|                     |                  | 2535 (21100)   | 20.03 | 20.16 |
|                     |                  | 2505 (20800)   | 20.33 | 20.42 |
|                     | 50RB (0)         | 2565 (21400)   | 20.34 | 20.48 |
|                     |                  | 2535 (21100)   | 19.94 | 19.98 |
|                     |                  | 2505 (20800)   | 20.35 | 20.35 |

|       |                  |                |       |       |
|-------|------------------|----------------|-------|-------|
| 15MHz | 1RB-High (74)    | 2562.5 (21375) | 20.25 | 20.10 |
|       |                  | 2535 (21100)   | 20.07 | 19.77 |
|       |                  | 2507.5 (20825) | 19.95 | 19.40 |
|       | 1RB-Middle (37)  | 2562.5 (21375) | 20.31 | 20.43 |
|       |                  | 2535 (21100)   | 19.95 | 19.69 |
|       |                  | 2507.5 (20825) | 20.13 | 19.58 |
|       | 1RB-Low (0)      | 2562.5 (21375) | 20.41 | 20.51 |
|       |                  | 2535 (21100)   | 20.09 | 19.73 |
|       |                  | 2507.5 (20825) | 20.10 | 19.25 |
|       | 36RB-High (38)   | 2562.5 (21375) | 20.45 | 20.47 |
|       |                  | 2535 (21100)   | 20.15 | 20.03 |
|       |                  | 2507.5 (20825) | 20.20 | 20.09 |
|       | 36RB-Middle (19) | 2562.5 (21375) | 20.48 | 20.53 |
|       |                  | 2535 (21100)   | 19.99 | 19.91 |
|       |                  | 2507.5 (20825) | 20.25 | 20.09 |
|       | 36RB-Low (0)     | 2562.5 (21375) | 20.38 | 20.42 |
|       |                  | 2535 (21100)   | 20.08 | 19.96 |
|       |                  | 2507.5 (20825) | 20.29 | 20.20 |
|       | 75RB (0)         | 2562.5 (21375) | 20.41 | 20.35 |
|       |                  | 2535 (21100)   | 20.03 | 20.00 |
|       |                  | 2507.5 (20825) | 20.24 | 20.26 |
| 20MHz | 1RB-High (99)    | 2560 (21350)   | 20.57 | 19.89 |
|       |                  | 2535 (21100)   | 20.46 | 19.77 |
|       |                  | 2510 (20850)   | 20.47 | 20.47 |
|       | 1RB-Middle (50)  | 2560 (21350)   | 20.35 | 19.80 |
|       |                  | 2535 (21100)   | 20.08 | 20.03 |
|       |                  | 2510 (20850)   | 20.27 | 20.55 |
|       | 1RB-Low (0)      | 2560 (21350)   | 20.24 | 19.39 |
|       |                  | 2535 (21100)   | 19.95 | 19.76 |
|       |                  | 2510 (20850)   | 20.12 | 20.25 |
|       | 50RB-High (50)   | 2560 (21350)   | 20.28 | 20.38 |
|       |                  | 2535 (21100)   | 20.04 | 20.21 |
|       |                  | 2510 (20850)   | 20.02 | 20.09 |
|       | 50RB-Middle (25) | 2560 (21350)   | 20.46 | 20.41 |
|       |                  | 2535 (21100)   | 20.38 | 20.03 |
|       |                  | 2510 (20850)   | 20.35 | 20.20 |
|       | 50RB-Low (0)     | 2560 (21350)   | 20.27 | 20.37 |
|       |                  | 2535 (21100)   | 19.89 | 19.94 |
|       |                  | 2510 (20850)   | 20.18 | 20.17 |
|       | 100RB (0)        | 2560 (21350)   | 20.50 | 20.40 |
|       |                  | 2535 (21100)   | 20.00 | 19.95 |
|       |                  | 2510 (20850)   | 20.14 | 20.11 |

| LTE Band12 |                |               |       |       |
|------------|----------------|---------------|-------|-------|
| BANDWIDTH  | Number of RBs  | Frequency     | QPSK  | 16QAM |
| 1.4MHz     | 1RB-High (5)   | 715.3 (23173) | 24.29 | 23.20 |
|            |                | 707.5 (23095) | 24.28 | 23.74 |
|            |                | 699.7 (23017) | 24.10 | 23.25 |
|            | 1RB-Middle (3) | 715.3 (23173) | 24.23 | 23.46 |
|            |                | 707.5 (23095) | 24.20 | 23.12 |
|            |                | 699.7 (23017) | 24.23 | 22.71 |
|            | 1RB-Low (0)    | 715.3 (23173) | 24.05 | 22.77 |
|            |                | 707.5 (23095) | 23.97 | 22.81 |
|            |                | 699.7 (23017) | 24.18 | 22.46 |
|            | 3RB-High (3)   | 715.3 (23173) | 24.24 | 23.13 |
|            |                | 707.5 (23095) | 24.41 | 23.45 |
|            |                | 699.7 (23017) | 24.32 | 23.12 |
|            | 3RB-Middle (1) | 715.3 (23173) | 24.23 | 22.90 |
|            |                | 707.5 (23095) | 24.39 | 23.08 |
|            |                | 699.7 (23017) | 24.26 | 23.12 |
|            | 3RB-Low (0)    | 715.3 (23173) | 24.20 | 23.08 |
|            |                | 707.5 (23095) | 24.32 | 23.07 |
|            |                | 699.7 (23017) | 24.25 | 23.11 |
|            | 6RB (0)        | 715.3 (23173) | 23.29 | 22.30 |
|            |                | 707.5 (23095) | 23.24 | 22.04 |
|            |                | 699.7 (23017) | 23.16 | 22.10 |
| 3MHz       | 1RB-High (14)  | 714.5 (23165) | 24.17 | 22.73 |
|            |                | 707.5 (23095) | 24.12 | 22.64 |
|            |                | 700.5 (23025) | 23.92 | 23.29 |
|            | 1RB-Middle (7) | 714.5 (23165) | 24.06 | 23.01 |
|            |                | 707.5 (23095) | 24.29 | 22.81 |
|            |                | 700.5 (23025) | 24.07 | 22.79 |
|            | 1RB-Low (0)    | 714.5 (23165) | 23.99 | 22.82 |
|            |                | 707.5 (23095) | 24.16 | 22.87 |
|            |                | 700.5 (23025) | 24.18 | 22.86 |
|            | 8RB-High (7)   | 714.5 (23165) | 23.23 | 22.04 |
|            |                | 707.5 (23095) | 23.28 | 22.46 |
|            |                | 700.5 (23025) | 23.26 | 22.28 |
|            | 8RB-Middle (4) | 714.5 (23165) | 23.21 | 22.24 |
|            |                | 707.5 (23095) | 23.17 | 22.36 |
|            |                | 700.5 (23025) | 23.22 | 22.23 |
|            | 8RB-Low (0)    | 714.5 (23165) | 23.14 | 22.19 |
|            |                | 707.5 (23095) | 23.33 | 22.24 |
|            |                | 700.5 (23025) | 23.26 | 22.27 |
|            | 15RB (0)       | 714.5 (23165) | 23.06 | 22.17 |
|            |                | 707.5 (23095) | 23.15 | 22.27 |
|            |                | 700.5 (23025) | 23.23 | 22.21 |

|       |                  |               |       |       |
|-------|------------------|---------------|-------|-------|
| 5MHz  | 1RB-High (24)    | 713.5 (23155) | 23.86 | 22.49 |
|       |                  | 707.5 (23095) | 23.78 | 23.31 |
|       |                  | 701.5 (23035) | 23.87 | 23.06 |
|       | 1RB-Middle (12)  | 713.5 (23155) | 23.81 | 23.14 |
|       |                  | 707.5 (23095) | 23.92 | 22.73 |
|       |                  | 701.5 (23035) | 23.85 | 22.86 |
|       | 1RB-Low (0)      | 713.5 (23155) | 24.04 | 23.29 |
|       |                  | 707.5 (23095) | 23.89 | 22.61 |
|       |                  | 701.5 (23035) | 23.84 | 22.57 |
|       | 12RB-High (13)   | 713.5 (23155) | 23.08 | 22.14 |
|       |                  | 707.5 (23095) | 23.12 | 22.26 |
|       |                  | 701.5 (23035) | 22.89 | 21.98 |
|       | 12RB-Middle (6)  | 713.5 (23155) | 23.03 | 21.98 |
|       |                  | 707.5 (23095) | 23.08 | 21.98 |
|       |                  | 701.5 (23035) | 22.95 | 21.84 |
|       | 12RB-Low (0)     | 713.5 (23155) | 23.10 | 22.13 |
|       |                  | 707.5 (23095) | 23.05 | 21.96 |
|       |                  | 701.5 (23035) | 23.09 | 21.99 |
|       | 25RB (0)         | 713.5 (23155) | 22.97 | 22.20 |
|       |                  | 707.5 (23095) | 23.02 | 22.17 |
|       |                  | 701.5 (23035) | 23.01 | 21.98 |
| 10MHz | 1RB-High (49)    | 711 (23130)   | 23.85 | 23.16 |
|       |                  | 707.5 (23095) | 23.78 | 23.18 |
|       |                  | 704 (23060)   | 23.92 | 22.52 |
|       | 1RB-Middle (24)  | 711 (23130)   | 23.99 | 22.97 |
|       |                  | 707.5 (23095) | 24.10 | 22.20 |
|       |                  | 704 (23060)   | 23.90 | 22.45 |
|       | 1RB-Low (0)      | 711 (23130)   | 23.81 | 22.56 |
|       |                  | 707.5 (23095) | 23.58 | 22.57 |
|       |                  | 704 (23060)   | 23.65 | 22.35 |
|       | 25RB-High (25)   | 711 (23130)   | 23.02 | 21.90 |
|       |                  | 707.5 (23095) | 23.04 | 21.85 |
|       |                  | 704 (23060)   | 22.97 | 22.05 |
|       | 25RB-Middle (12) | 711 (23130)   | 23.03 | 21.99 |
|       |                  | 707.5 (23095) | 22.98 | 21.95 |
|       |                  | 704 (23060)   | 22.98 | 21.97 |
|       | 25RB-Low (0)     | 711 (23130)   | 23.05 | 22.00 |
|       |                  | 707.5 (23095) | 23.06 | 21.98 |
|       |                  | 704 (23060)   | 22.91 | 22.00 |
|       | 50RB (0)         | 711 (23130)   | 23.06 | 21.97 |
|       |                  | 707.5 (23095) | 22.99 | 21.96 |
|       |                  | 704 (23060)   | 22.90 | 21.98 |

| LTE Band13 |                  |               |       |       |
|------------|------------------|---------------|-------|-------|
| BANDWIDTH  | Number of RBs    | Frequency     | QPSK  | 16QAM |
| 5MHz       | 1RB-High (24)    | 784.5 (23255) | 22.57 | 21.20 |
|            |                  | 782 (23230)   | 22.71 | 21.64 |
|            |                  | 779.5 (23205) | 22.66 | 21.23 |
|            | 1RB-Middle (12)  | 784.5 (23255) | 22.69 | 21.43 |
|            |                  | 782 (23230)   | 22.74 | 21.35 |
|            |                  | 779.5 (23205) | 22.64 | 21.44 |
|            | 1RB-Low (0)      | 784.5 (23255) | 22.73 | 21.25 |
|            |                  | 782 (23230)   | 22.76 | 21.44 |
|            |                  | 779.5 (23205) | 22.61 | 21.19 |
|            | 12RB-High (13)   | 784.5 (23255) | 21.73 | 20.76 |
|            |                  | 782 (23230)   | 21.71 | 20.70 |
|            |                  | 779.5 (23205) | 21.73 | 20.65 |
|            | 12RB-Middle (6)  | 784.5 (23255) | 21.74 | 20.68 |
|            |                  | 782 (23230)   | 21.78 | 20.59 |
|            |                  | 779.5 (23205) | 21.83 | 20.97 |
|            | 12RB-Low (0)     | 784.5 (23255) | 21.82 | 20.86 |
|            |                  | 782 (23230)   | 21.78 | 20.87 |
|            |                  | 779.5 (23205) | 21.71 | 20.85 |
|            | 25RB (0)         | 784.5 (23255) | 21.77 | 20.81 |
|            |                  | 782 (23230)   | 21.68 | 20.77 |
|            |                  | 779.5 (23205) | 21.77 | 20.90 |
| 10MHz      | 1RB-High (49)    | 782 (23230)   | 22.59 | 21.08 |
|            | 1RB-Middle (24)  | 782 (23230)   | 22.94 | 21.60 |
|            | 1RB-Low (0)      | 782 (23230)   | 22.73 | 21.29 |
|            | 25RB-High (25)   | 782 (23230)   | 21.69 | 20.74 |
|            | 25RB-Middle (12) | 782 (23230)   | 21.71 | 20.77 |
|            | 25RB-Low (0)     | 782 (23230)   | 21.82 | 20.98 |
|            | 50RB (0)         | 782 (23230)   | 21.71 | 20.78 |

| LTE B41 PC3-Normal power |                 |                |       |       |
|--------------------------|-----------------|----------------|-------|-------|
| BANDWIDTH                | Number of RBs   | Frequency      | QPSK  | 16QAM |
| 5MHz                     | 1RB-High (24)   | 2687.5 (41565) | 22.85 | 21.94 |
|                          |                 | 2640.3(41093)  | 22.89 | 21.52 |
|                          |                 | 2593 (40620)   | 23.24 | 21.93 |
|                          |                 | 2545.8(40148)  | 22.88 | 21.82 |
|                          |                 | 2498.5 (39675) | 23.08 | 21.89 |
|                          | 1RB-Middle (12) | 2687.5 (41565) | 23.08 | 21.58 |
|                          |                 | 2640.3(41093)  | 22.99 | 21.73 |
|                          |                 | 2593 (40620)   | 23.45 | 21.83 |
|                          |                 | 2545.8(40148)  | 23.09 | 21.76 |
|                          |                 | 2498.5 (39675) | 23.25 | 21.99 |
|                          | 1RB-Low (0)     | 2687.5 (41565) | 23.03 | 21.92 |
|                          |                 | 2640.3(41093)  | 22.91 | 21.59 |
|                          |                 | 2593 (40620)   | 23.30 | 21.86 |
|                          |                 | 2545.8(40148)  | 22.91 | 21.55 |
|                          |                 | 2498.5 (39675) | 23.24 | 21.63 |
|                          | 12RB-High (13)  | 2687.5 (41565) | 22.06 | 20.87 |
|                          |                 | 2640.3(41093)  | 21.94 | 20.79 |
|                          |                 | 2593 (40620)   | 22.38 | 21.24 |
|                          |                 | 2545.8(40148)  | 21.95 | 20.90 |
|                          |                 | 2498.5 (39675) | 22.25 | 21.18 |
|                          | 12RB-Middle (6) | 2687.5 (41565) | 22.11 | 20.83 |
|                          |                 | 2640.3(41093)  | 21.94 | 20.70 |
|                          |                 | 2593 (40620)   | 22.40 | 21.28 |
|                          |                 | 2545.8(40148)  | 21.97 | 20.92 |
|                          |                 | 2498.5 (39675) | 22.18 | 21.14 |
|                          | 12RB-Low (0)    | 2687.5 (41565) | 22.16 | 20.90 |
|                          |                 | 2640.3(41093)  | 22.01 | 20.78 |
|                          |                 | 2593 (40620)   | 22.33 | 21.21 |
|                          |                 | 2545.8(40148)  | 21.98 | 20.84 |
|                          |                 | 2498.5 (39675) | 22.14 | 21.09 |
|                          | 25RB (0)        | 2687.5 (41565) | 22.05 | 21.24 |
|                          |                 | 2640.3(41093)  | 21.95 | 21.04 |
|                          |                 | 2593 (40620)   | 22.27 | 21.08 |
|                          |                 | 2545.8(40148)  | 21.94 | 20.93 |
|                          |                 | 2498.5 (39675) | 22.26 | 21.34 |

|       |                  |              |       |       |
|-------|------------------|--------------|-------|-------|
| 10MHz | 1RB-High (49)    | 2685 (41540) | 22.88 | 21.65 |
|       |                  | 2639(41080)  | 22.94 | 21.80 |
|       |                  | 2593 (40620) | 23.35 | 21.93 |
|       |                  | 2547(40160)  | 22.85 | 21.60 |
|       |                  | 2501 (39700) | 23.40 | 21.98 |
|       | 1RB-Middle (24)  | 2685 (41540) | 23.15 | 21.77 |
|       |                  | 2639(41080)  | 23.12 | 21.72 |
|       |                  | 2593 (40620) | 23.53 | 21.90 |
|       |                  | 2547(40160)  | 23.23 | 21.61 |
|       |                  | 2501 (39700) | 23.42 | 21.80 |
|       | 1RB-Low (0)      | 2685 (41540) | 23.14 | 21.79 |
|       |                  | 2639(41080)  | 23.03 | 21.62 |
|       |                  | 2593 (40620) | 23.50 | 21.90 |
|       |                  | 2547(40160)  | 22.76 | 21.67 |
|       |                  | 2501 (39700) | 23.37 | 21.66 |
|       | 25RB-High (25)   | 2685 (41540) | 22.14 | 21.28 |
|       |                  | 2639(41080)  | 21.98 | 21.18 |
|       |                  | 2593 (40620) | 22.44 | 21.55 |
|       |                  | 2547(40160)  | 22.00 | 21.19 |
|       |                  | 2501 (39700) | 22.24 | 21.24 |
|       | 25RB-Middle (12) | 2685 (41540) | 22.02 | 21.08 |
|       |                  | 2639(41080)  | 22.00 | 21.00 |
|       |                  | 2593 (40620) | 22.41 | 21.40 |
|       |                  | 2547(40160)  | 22.03 | 21.21 |
|       |                  | 2501 (39700) | 22.21 | 21.30 |
|       | 25RB-Low (0)     | 2685 (41540) | 22.23 | 21.31 |
|       |                  | 2639(41080)  | 22.03 | 21.03 |
|       |                  | 2593 (40620) | 22.43 | 21.35 |
|       |                  | 2547(40160)  | 22.07 | 20.96 |
|       |                  | 2501 (39700) | 22.16 | 21.15 |
|       | 50RB (0)         | 2685 (41540) | 22.12 | 21.05 |
|       |                  | 2639(41080)  | 22.06 | 20.91 |
|       |                  | 2593 (40620) | 22.49 | 21.47 |
|       |                  | 2547(40160)  | 22.14 | 20.98 |
|       |                  | 2501 (39700) | 22.21 | 21.25 |

|       |                  |                |       |       |
|-------|------------------|----------------|-------|-------|
| 15MHz | 1RB-High (74)    | 2682.5 (41515) | 23.00 | 21.67 |
|       |                  | 2637.8(41068)  | 22.86 | 21.50 |
|       |                  | 2593 (40620)   | 23.32 | 22.40 |
|       |                  | 2548.3(40173)  | 22.97 | 21.65 |
|       |                  | 2503.5 (39725) | 22.97 | 21.94 |
|       | 1RB-Middle (37)  | 2682.5 (41515) | 23.02 | 21.71 |
|       |                  | 2637.8(41068)  | 22.83 | 21.56 |
|       |                  | 2593 (40620)   | 23.45 | 22.43 |
|       |                  | 2548.3(40173)  | 23.02 | 21.71 |
|       |                  | 2503.5 (39725) | 22.92 | 21.90 |
|       | 1RB-Low (0)      | 2682.5 (41515) | 23.09 | 21.72 |
|       |                  | 2637.8(41068)  | 22.88 | 21.61 |
|       |                  | 2593 (40620)   | 23.54 | 22.06 |
|       |                  | 2548.3(40173)  | 22.93 | 21.68 |
|       |                  | 2503.5 (39725) | 22.98 | 21.61 |
|       | 36RB-High (38)   | 2682.5 (41515) | 22.16 | 21.09 |
|       |                  | 2637.8(41068)  | 21.96 | 20.89 |
|       |                  | 2593 (40620)   | 22.46 | 21.38 |
|       |                  | 2548.3(40173)  | 22.09 | 20.98 |
|       |                  | 2503.5 (39725) | 22.15 | 21.15 |
|       | 36RB-Middle (19) | 2682.5 (41515) | 22.16 | 21.16 |
|       |                  | 2637.8(41068)  | 21.97 | 20.97 |
|       |                  | 2593 (40620)   | 22.50 | 21.28 |
|       |                  | 2548.3(40173)  | 22.08 | 20.96 |
|       |                  | 2503.5 (39725) | 22.08 | 21.03 |
|       | 36RB-Low (0)     | 2682.5 (41515) | 22.31 | 21.13 |
|       |                  | 2637.8(41068)  | 21.96 | 20.86 |
|       |                  | 2593 (40620)   | 22.39 | 21.20 |
|       |                  | 2548.3(40173)  | 22.09 | 20.87 |
|       |                  | 2503.5 (39725) | 22.00 | 21.06 |
|       | 75RB (0)         | 2682.5 (41515) | 22.20 | 21.16 |
|       |                  | 2637.8(41068)  | 22.04 | 21.09 |
|       |                  | 2593 (40620)   | 22.48 | 21.36 |
|       |                  | 2548.3(40173)  | 22.02 | 21.14 |
|       |                  | 2503.5 (39725) | 22.05 | 21.07 |



|       |                  |               |       |       |
|-------|------------------|---------------|-------|-------|
| 20MHz | 1RB-High (99)    | 2680 (41490)  | 22.89 | 21.78 |
|       |                  | 2636.5(41055) | 22.61 | 21.83 |
|       |                  | 2593 (40620)  | 23.19 | 22.12 |
|       |                  | 2549.5(40185) | 22.94 | 21.66 |
|       |                  | 2506 (39750)  | 22.77 | 21.79 |
|       | 1RB-Middle (50)  | 2680 (41490)  | 23.04 | 21.89 |
|       |                  | 2636.5(41055) | 22.88 | 22.03 |
|       |                  | 2593 (40620)  | 23.64 | 21.89 |
|       |                  | 2549.5(40185) | 23.01 | 21.76 |
|       |                  | 2506 (39750)  | 23.36 | 21.80 |
|       | 1RB-Low (0)      | 2680 (41490)  | 22.82 | 21.55 |
|       |                  | 2636.5(41055) | 22.70 | 21.69 |
|       |                  | 2593 (40620)  | 23.18 | 21.76 |
|       |                  | 2549.5(40185) | 22.83 | 21.78 |
|       |                  | 2506 (39750)  | 22.92 | 21.50 |
|       | 50RB-High (50)   | 2680 (41490)  | 21.93 | 20.91 |
|       |                  | 2636.5(41055) | 21.87 | 20.77 |
|       |                  | 2593 (40620)  | 22.31 | 21.14 |
|       |                  | 2549.5(40185) | 21.97 | 20.95 |
|       |                  | 2506 (39750)  | 22.08 | 21.07 |
|       | 50RB-Middle (25) | 2680 (41490)  | 22.08 | 21.09 |
|       |                  | 2636.5(41055) | 21.88 | 20.79 |
|       |                  | 2593 (40620)  | 22.42 | 21.14 |
|       |                  | 2549.5(40185) | 22.01 | 20.99 |
|       |                  | 2506 (39750)  | 21.93 | 21.02 |
|       | 50RB-Low (0)     | 2680 (41490)  | 21.98 | 20.90 |
|       |                  | 2636.5(41055) | 21.81 | 20.82 |
|       |                  | 2593 (40620)  | 22.27 | 21.16 |
|       |                  | 2549.5(40185) | 21.94 | 20.83 |
|       |                  | 2506 (39750)  | 21.93 | 21.02 |
|       | 100RB (0)        | 2680 (41490)  | 22.10 | 21.00 |
|       |                  | 2636.5(41055) | 21.79 | 20.70 |
|       |                  | 2593 (40620)  | 22.33 | 21.22 |
|       |                  | 2549.5(40185) | 21.97 | 21.05 |
|       |                  | 2506 (39750)  | 22.02 | 20.91 |

| LTE B41 PC3-Low power |                 |                |       |       |
|-----------------------|-----------------|----------------|-------|-------|
| BANDWIDTH             | Number of RBs   | Frequency      | QPSK  | 16QAM |
| 5MHz                  | 1RB-High (24)   | 2687.5 (41565) | 21.34 | 21.25 |
|                       |                 | 2640.3(41093)  | 21.35 | 21.24 |
|                       |                 | 2593 (40620)   | 21.77 | 21.42 |
|                       |                 | 2545.8(40148)  | 21.33 | 20.96 |
|                       |                 | 2498.5 (39675) | 21.53 | 21.50 |
|                       | 1RB-Middle (12) | 2687.5 (41565) | 21.51 | 21.45 |
|                       |                 | 2640.3(41093)  | 21.46 | 20.83 |
|                       |                 | 2593 (40620)   | 22.01 | 21.63 |
|                       |                 | 2545.8(40148)  | 21.34 | 20.79 |
|                       |                 | 2498.5 (39675) | 21.73 | 21.32 |
|                       | 1RB-Low (0)     | 2687.5 (41565) | 21.43 | 21.31 |
|                       |                 | 2640.3(41093)  | 21.29 | 21.36 |
|                       |                 | 2593 (40620)   | 21.80 | 21.55 |
|                       |                 | 2545.8(40148)  | 21.17 | 20.89 |
|                       |                 | 2498.5 (39675) | 21.67 | 21.34 |
|                       | 12RB-High (13)  | 2687.5 (41565) | 21.50 | 21.02 |
|                       |                 | 2640.3(41093)  | 21.33 | 20.90 |
|                       |                 | 2593 (40620)   | 21.79 | 21.19 |
|                       |                 | 2545.8(40148)  | 21.44 | 20.90 |
|                       |                 | 2498.5 (39675) | 21.60 | 21.18 |
|                       | 12RB-Middle (6) | 2687.5 (41565) | 21.42 | 20.97 |
|                       |                 | 2640.3(41093)  | 21.37 | 20.92 |
|                       |                 | 2593 (40620)   | 21.85 | 21.21 |
|                       |                 | 2545.8(40148)  | 21.35 | 20.83 |
|                       |                 | 2498.5 (39675) | 21.63 | 21.14 |
|                       | 12RB-Low (0)    | 2687.5 (41565) | 21.59 | 20.93 |
|                       |                 | 2640.3(41093)  | 21.30 | 20.91 |
|                       |                 | 2593 (40620)   | 21.83 | 21.23 |
|                       |                 | 2545.8(40148)  | 21.45 | 20.83 |
|                       |                 | 2498.5 (39675) | 21.76 | 21.07 |
|                       | 25RB (0)        | 2687.5 (41565) | 21.49 | 21.07 |
|                       |                 | 2640.3(41093)  | 21.32 | 20.97 |
|                       |                 | 2593 (40620)   | 21.78 | 21.32 |
|                       |                 | 2545.8(40148)  | 21.22 | 21.03 |
|                       |                 | 2498.5 (39675) | 21.70 | 21.13 |

|       |                  |              |       |       |
|-------|------------------|--------------|-------|-------|
| 10MHz | 1RB-High (49)    | 2685 (41540) | 21.61 | 21.40 |
|       |                  | 2639(41080)  | 21.34 | 21.38 |
|       |                  | 2593 (40620) | 21.84 | 21.48 |
|       |                  | 2547(40160)  | 21.44 | 21.00 |
|       |                  | 2501 (39700) | 21.81 | 21.58 |
|       | 1RB-Middle (24)  | 2685 (41540) | 21.69 | 21.42 |
|       |                  | 2639(41080)  | 21.83 | 21.32 |
|       |                  | 2593 (40620) | 22.04 | 21.61 |
|       |                  | 2547(40160)  | 21.70 | 21.11 |
|       |                  | 2501 (39700) | 21.89 | 21.40 |
|       | 1RB-Low (0)      | 2685 (41540) | 21.75 | 21.52 |
|       |                  | 2639(41080)  | 21.58 | 21.08 |
|       |                  | 2593 (40620) | 21.98 | 21.47 |
|       |                  | 2547(40160)  | 21.55 | 21.04 |
|       |                  | 2501 (39700) | 21.67 | 21.25 |
|       | 25RB-High (25)   | 2685 (41540) | 21.52 | 21.22 |
|       |                  | 2639(41080)  | 21.50 | 21.06 |
|       |                  | 2593 (40620) | 21.87 | 21.58 |
|       |                  | 2547(40160)  | 21.53 | 20.98 |
|       |                  | 2501 (39700) | 21.58 | 21.40 |
|       | 25RB-Middle (12) | 2685 (41540) | 21.58 | 21.11 |
|       |                  | 2639(41080)  | 21.46 | 21.02 |
|       |                  | 2593 (40620) | 21.89 | 21.51 |
|       |                  | 2547(40160)  | 21.48 | 21.10 |
|       |                  | 2501 (39700) | 21.63 | 21.45 |
|       | 25RB-Low (0)     | 2685 (41540) | 21.79 | 21.34 |
|       |                  | 2639(41080)  | 21.45 | 21.14 |
|       |                  | 2593 (40620) | 21.82 | 21.57 |
|       |                  | 2547(40160)  | 21.49 | 21.23 |
|       |                  | 2501 (39700) | 21.67 | 21.41 |
|       | 50RB (0)         | 2685 (41540) | 21.67 | 21.25 |
|       |                  | 2639(41080)  | 21.47 | 21.01 |
|       |                  | 2593 (40620) | 22.00 | 21.38 |
|       |                  | 2547(40160)  | 21.56 | 20.95 |
|       |                  | 2501 (39700) | 21.73 | 21.19 |

|       |                  |                |       |       |
|-------|------------------|----------------|-------|-------|
| 15MHz | 1RB-High (74)    | 2682.5 (41515) | 21.45 | 21.61 |
|       |                  | 2637.8(41068)  | 21.38 | 21.23 |
|       |                  | 2593 (40620)   | 21.70 | 21.68 |
|       |                  | 2548.3(40173)  | 21.51 | 21.33 |
|       |                  | 2503.5 (39725) | 21.50 | 21.34 |
|       | 1RB-Middle (37)  | 2682.5 (41515) | 21.61 | 21.19 |
|       |                  | 2637.8(41068)  | 21.42 | 21.06 |
|       |                  | 2593 (40620)   | 21.84 | 21.79 |
|       |                  | 2548.3(40173)  | 21.44 | 21.37 |
|       |                  | 2503.5 (39725) | 21.52 | 21.38 |
|       | 1RB-Low (0)      | 2682.5 (41515) | 21.63 | 21.28 |
|       |                  | 2637.8(41068)  | 21.37 | 20.96 |
|       |                  | 2593 (40620)   | 21.89 | 21.82 |
|       |                  | 2548.3(40173)  | 21.51 | 21.36 |
|       |                  | 2503.5 (39725) | 21.47 | 21.16 |
|       | 36RB-High (38)   | 2682.5 (41515) | 21.49 | 21.00 |
|       |                  | 2637.8(41068)  | 21.47 | 20.80 |
|       |                  | 2593 (40620)   | 21.86 | 21.33 |
|       |                  | 2548.3(40173)  | 21.53 | 20.94 |
|       |                  | 2503.5 (39725) | 21.60 | 21.10 |
|       | 36RB-Middle (19) | 2682.5 (41515) | 21.65 | 21.09 |
|       |                  | 2637.8(41068)  | 21.50 | 20.87 |
|       |                  | 2593 (40620)   | 21.92 | 21.41 |
|       |                  | 2548.3(40173)  | 21.54 | 21.01 |
|       |                  | 2503.5 (39725) | 21.50 | 20.98 |
|       | 36RB-Low (0)     | 2682.5 (41515) | 21.78 | 21.14 |
|       |                  | 2637.8(41068)  | 21.44 | 20.86 |
|       |                  | 2593 (40620)   | 21.82 | 21.31 |
|       |                  | 2548.3(40173)  | 21.52 | 21.00 |
|       |                  | 2503.5 (39725) | 21.51 | 20.98 |
|       | 75RB (0)         | 2682.5 (41515) | 21.57 | 21.26 |
|       |                  | 2637.8(41068)  | 21.42 | 20.98 |
|       |                  | 2593 (40620)   | 21.94 | 21.37 |
|       |                  | 2548.3(40173)  | 21.54 | 21.08 |
|       |                  | 2503.5 (39725) | 21.55 | 21.11 |

|       |                  |               |       |       |
|-------|------------------|---------------|-------|-------|
| 20MHz | 1RB-High (99)    | 2680 (41490)  | 21.15 | 20.85 |
|       |                  | 2636.5(41055) | 21.08 | 21.23 |
|       |                  | 2593 (40620)  | 21.48 | 21.47 |
|       |                  | 2549.5(40185) | 21.32 | 20.94 |
|       |                  | 2506 (39750)  | 21.16 | 21.02 |
|       | 1RB-Middle (50)  | 2680 (41490)  | 21.49 | 21.05 |
|       |                  | 2636.5(41055) | 21.24 | 21.37 |
|       |                  | 2593 (40620)  | 22.05 | 21.59 |
|       |                  | 2549.5(40185) | 21.66 | 21.11 |
|       |                  | 2506 (39750)  | 21.43 | 21.00 |
|       | 1RB-Low (0)      | 2680 (41490)  | 21.15 | 20.98 |
|       |                  | 2636.5(41055) | 21.19 | 20.85 |
|       |                  | 2593 (40620)  | 21.86 | 21.33 |
|       |                  | 2549.5(40185) | 21.41 | 20.97 |
|       |                  | 2506 (39750)  | 21.29 | 20.98 |
|       | 50RB-High (50)   | 2680 (41490)  | 21.32 | 21.43 |
|       |                  | 2636.5(41055) | 21.25 | 21.32 |
|       |                  | 2593 (40620)  | 21.75 | 21.63 |
|       |                  | 2549.5(40185) | 21.37 | 21.49 |
|       |                  | 2506 (39750)  | 21.32 | 21.43 |
|       | 50RB-Middle (25) | 2680 (41490)  | 21.54 | 21.46 |
|       |                  | 2636.5(41055) | 21.30 | 21.30 |
|       |                  | 2593 (40620)  | 21.84 | 21.86 |
|       |                  | 2549.5(40185) | 21.42 | 21.54 |
|       |                  | 2506 (39750)  | 21.44 | 21.34 |
|       | 50RB-Low (0)     | 2680 (41490)  | 21.38 | 21.37 |
|       |                  | 2636.5(41055) | 21.16 | 21.24 |
|       |                  | 2593 (40620)  | 21.74 | 21.83 |
|       |                  | 2549.5(40185) | 21.32 | 21.35 |
|       |                  | 2506 (39750)  | 21.41 | 21.26 |
|       | 100RB (0)        | 2680 (41490)  | 21.39 | 21.49 |
|       |                  | 2636.5(41055) | 21.48 | 21.24 |
|       |                  | 2593 (40620)  | 21.71 | 21.79 |
|       |                  | 2549.5(40185) | 21.36 | 21.38 |
|       |                  | 2506 (39750)  | 21.41 | 21.35 |

| LTE B41 PC2-Normal power |                 |                |       |       |
|--------------------------|-----------------|----------------|-------|-------|
| BANDWIDTH                | Number of RBs   | Frequency      | QPSK  | 16QAM |
| 5MHz                     | 1RB-High (24)   | 2687.5 (41565) | 25.10 | 23.57 |
|                          |                 | 2640.3(41093)  | 24.57 | 23.69 |
|                          |                 | 2593 (40620)   | 24.78 | 23.89 |
|                          |                 | 2545.8(40148)  | 25.00 | 23.62 |
|                          |                 | 2498.5 (39675) | 24.96 | 23.53 |
|                          | 1RB-Middle (12) | 2687.5 (41565) | 25.39 | 23.78 |
|                          |                 | 2640.3(41093)  | 24.85 | 23.81 |
|                          |                 | 2593 (40620)   | 25.43 | 24.34 |
|                          |                 | 2545.8(40148)  | 25.12 | 23.58 |
|                          |                 | 2498.5 (39675) | 25.15 | 23.90 |
|                          | 1RB-Low (0)     | 2687.5 (41565) | 25.25 | 23.57 |
|                          |                 | 2640.3(41093)  | 24.57 | 23.55 |
|                          |                 | 2593 (40620)   | 25.24 | 23.81 |
|                          |                 | 2545.8(40148)  | 25.02 | 23.65 |
|                          |                 | 2498.5 (39675) | 24.75 | 23.75 |
|                          | 12RB-High (13)  | 2687.5 (41565) | 24.10 | 22.76 |
|                          |                 | 2640.3(41093)  | 23.95 | 22.99 |
|                          |                 | 2593 (40620)   | 24.43 | 23.04 |
|                          |                 | 2545.8(40148)  | 24.34 | 23.43 |
|                          |                 | 2498.5 (39675) | 24.00 | 23.09 |
|                          | 12RB-Middle (6) | 2687.5 (41565) | 24.27 | 22.91 |
|                          |                 | 2640.3(41093)  | 24.08 | 22.97 |
|                          |                 | 2593 (40620)   | 24.46 | 23.23 |
|                          |                 | 2545.8(40148)  | 23.92 | 23.15 |
|                          |                 | 2498.5 (39675) | 23.92 | 23.14 |
|                          | 12RB-Low (0)    | 2687.5 (41565) | 23.91 | 23.06 |
|                          |                 | 2640.3(41093)  | 24.09 | 22.81 |
|                          |                 | 2593 (40620)   | 24.56 | 23.41 |
|                          |                 | 2545.8(40148)  | 24.10 | 23.34 |
|                          |                 | 2498.5 (39675) | 24.26 | 22.87 |
|                          | 25RB (0)        | 2687.5 (41565) | 23.73 | 23.12 |
|                          |                 | 2640.3(41093)  | 23.91 | 22.68 |
|                          |                 | 2593 (40620)   | 24.30 | 23.06 |
|                          |                 | 2545.8(40148)  | 24.03 | 23.46 |
|                          |                 | 2498.5 (39675) | 23.75 | 23.08 |

|       |                  |              |       |       |
|-------|------------------|--------------|-------|-------|
| 10MHz | 1RB-High (49)    | 2685 (41540) | 24.87 | 23.70 |
|       |                  | 2639(41080)  | 24.55 | 23.67 |
|       |                  | 2593 (40620) | 25.18 | 23.96 |
|       |                  | 2547(40160)  | 24.75 | 23.63 |
|       |                  | 2501 (39700) | 24.57 | 23.66 |
|       | 1RB-Middle (24)  | 2685 (41540) | 25.38 | 23.80 |
|       |                  | 2639(41080)  | 24.58 | 23.76 |
|       |                  | 2593 (40620) | 25.11 | 24.20 |
|       |                  | 2547(40160)  | 25.23 | 23.79 |
|       |                  | 2501 (39700) | 25.28 | 23.87 |
|       | 1RB-Low (0)      | 2685 (41540) | 25.21 | 23.53 |
|       |                  | 2639(41080)  | 24.82 | 23.55 |
|       |                  | 2593 (40620) | 25.42 | 24.12 |
|       |                  | 2547(40160)  | 24.63 | 23.69 |
|       |                  | 2501 (39700) | 24.62 | 23.78 |
|       | 25RB-High (25)   | 2685 (41540) | 23.95 | 22.82 |
|       |                  | 2639(41080)  | 24.04 | 22.72 |
|       |                  | 2593 (40620) | 24.35 | 23.13 |
|       |                  | 2547(40160)  | 23.90 | 23.17 |
|       |                  | 2501 (39700) | 24.24 | 23.00 |
|       | 25RB-Middle (12) | 2685 (41540) | 24.33 | 23.29 |
|       |                  | 2639(41080)  | 23.87 | 23.02 |
|       |                  | 2593 (40620) | 24.20 | 22.94 |
|       |                  | 2547(40160)  | 24.38 | 23.34 |
|       |                  | 2501 (39700) | 24.13 | 23.11 |
|       | 25RB-Low (0)     | 2685 (41540) | 24.15 | 22.81 |
|       |                  | 2639(41080)  | 23.71 | 22.84 |
|       |                  | 2593 (40620) | 24.37 | 23.06 |
|       |                  | 2547(40160)  | 23.99 | 23.32 |
|       |                  | 2501 (39700) | 24.17 | 23.08 |
|       | 50RB (0)         | 2685 (41540) | 23.75 | 23.35 |
|       |                  | 2639(41080)  | 23.97 | 23.06 |
|       |                  | 2593 (40620) | 23.89 | 22.89 |
|       |                  | 2547(40160)  | 23.83 | 22.93 |
|       |                  | 2501 (39700) | 24.07 | 22.83 |

|       |                  |                |       |       |
|-------|------------------|----------------|-------|-------|
| 15MHz | 1RB-High (74)    | 2682.5 (41515) | 24.86 | 23.50 |
|       |                  | 2637.8(41068)  | 24.86 | 23.51 |
|       |                  | 2593 (40620)   | 24.94 | 23.55 |
|       |                  | 2548.3(40173)  | 24.78 | 23.51 |
|       |                  | 2503.5 (39725) | 24.67 | 23.62 |
|       | 1RB-Middle (37)  | 2682.5 (41515) | 25.23 | 23.83 |
|       |                  | 2637.8(41068)  | 25.13 | 23.83 |
|       |                  | 2593 (40620)   | 25.42 | 24.03 |
|       |                  | 2548.3(40173)  | 25.39 | 23.80 |
|       |                  | 2503.5 (39725) | 24.95 | 23.71 |
|       | 1RB-Low (0)      | 2682.5 (41515) | 25.15 | 23.61 |
|       |                  | 2637.8(41068)  | 24.98 | 23.87 |
|       |                  | 2593 (40620)   | 25.31 | 24.08 |
|       |                  | 2548.3(40173)  | 24.60 | 23.60 |
|       |                  | 2503.5 (39725) | 24.94 | 23.61 |
|       | 36RB-High (38)   | 2682.5 (41515) | 24.29 | 22.89 |
|       |                  | 2637.8(41068)  | 23.66 | 22.62 |
|       |                  | 2593 (40620)   | 23.86 | 23.01 |
|       |                  | 2548.3(40173)  | 24.47 | 23.05 |
|       |                  | 2503.5 (39725) | 24.15 | 22.77 |
|       | 36RB-Middle (19) | 2682.5 (41515) | 24.08 | 23.33 |
|       |                  | 2637.8(41068)  | 23.74 | 22.63 |
|       |                  | 2593 (40620)   | 24.21 | 22.88 |
|       |                  | 2548.3(40173)  | 24.10 | 22.89 |
|       |                  | 2503.5 (39725) | 24.06 | 22.99 |
|       | 36RB-Low (0)     | 2682.5 (41515) | 24.09 | 23.20 |
|       |                  | 2637.8(41068)  | 23.92 | 22.67 |
|       |                  | 2593 (40620)   | 24.02 | 23.18 |
|       |                  | 2548.3(40173)  | 24.35 | 22.84 |
|       |                  | 2503.5 (39725) | 24.17 | 23.21 |
|       | 75RB (0)         | 2682.5 (41515) | 24.23 | 23.04 |
|       |                  | 2637.8(41068)  | 23.72 | 22.69 |
|       |                  | 2593 (40620)   | 24.45 | 23.41 |
|       |                  | 2548.3(40173)  | 24.15 | 23.28 |
|       |                  | 2503.5 (39725) | 23.89 | 23.03 |



|       |                  |               |       |       |
|-------|------------------|---------------|-------|-------|
| 20MHz | 1RB-High (99)    | 2680 (41490)  | 25.03 | 23.54 |
|       |                  | 2636.5(41055) | 24.64 | 23.56 |
|       |                  | 2593 (40620)  | 24.95 | 23.72 |
|       |                  | 2549.5(40185) | 25.05 | 23.74 |
|       |                  | 2506 (39750)  | 24.72 | 23.50 |
|       | 1RB-Middle (50)  | 2680 (41490)  | 25.12 | 23.96 |
|       |                  | 2636.5(41055) | 24.74 | 23.62 |
|       |                  | 2593 (40620)  | 25.31 | 24.20 |
|       |                  | 2549.5(40185) | 25.18 | 23.87 |
|       |                  | 2506 (39750)  | 25.09 | 23.87 |
|       | 1RB-Low (0)      | 2680 (41490)  | 25.00 | 23.64 |
|       |                  | 2636.5(41055) | 24.69 | 23.58 |
|       |                  | 2593 (40620)  | 25.18 | 24.05 |
|       |                  | 2549.5(40185) | 24.82 | 23.52 |
|       |                  | 2506 (39750)  | 24.90 | 23.61 |
|       | 50RB-High (50)   | 2680 (41490)  | 23.99 | 22.92 |
|       |                  | 2636.5(41055) | 23.81 | 22.71 |
|       |                  | 2593 (40620)  | 24.13 | 23.13 |
|       |                  | 2549.5(40185) | 24.19 | 23.20 |
|       |                  | 2506 (39750)  | 23.98 | 22.87 |
|       | 50RB-Middle (25) | 2680 (41490)  | 24.08 | 23.04 |
|       |                  | 2636.5(41055) | 23.78 | 22.79 |
|       |                  | 2593 (40620)  | 24.24 | 23.15 |
|       |                  | 2549.5(40185) | 24.17 | 23.19 |
|       |                  | 2506 (39750)  | 24.07 | 22.99 |
|       | 50RB-Low (0)     | 2680 (41490)  | 24.04 | 22.99 |
|       |                  | 2636.5(41055) | 23.83 | 22.73 |
|       |                  | 2593 (40620)  | 24.28 | 23.18 |
|       |                  | 2549.5(40185) | 24.07 | 23.08 |
|       |                  | 2506 (39750)  | 24.04 | 23.07 |
|       | 100RB (0)        | 2680 (41490)  | 24.00 | 23.05 |
|       |                  | 2636.5(41055) | 23.87 | 22.87 |
|       |                  | 2593 (40620)  | 24.18 | 23.18 |
|       |                  | 2549.5(40185) | 24.09 | 23.19 |
|       |                  | 2506 (39750)  | 24.01 | 22.93 |

| LTE B41 PC2-Low power |                 |                |       |       |
|-----------------------|-----------------|----------------|-------|-------|
| BANDWIDTH             | Number of RBs   | Frequency      | QPSK  | 16QAM |
| 5MHz                  | 1RB-High (24)   | 2687.5 (41565) | 21.44 | 21.02 |
|                       |                 | 2640.3(41093)  | 21.24 | 21.00 |
|                       |                 | 2593 (40620)   | 21.58 | 21.39 |
|                       |                 | 2545.8(40148)  | 21.35 | 21.24 |
|                       |                 | 2498.5 (39675) | 21.51 | 21.18 |
|                       | 1RB-Middle (12) | 2687.5 (41565) | 21.53 | 21.14 |
|                       |                 | 2640.3(41093)  | 21.32 | 21.04 |
|                       |                 | 2593 (40620)   | 21.82 | 21.53 |
|                       |                 | 2545.8(40148)  | 21.49 | 21.13 |
|                       |                 | 2498.5 (39675) | 21.54 | 21.18 |
|                       | 1RB-Low (0)     | 2687.5 (41565) | 21.29 | 21.19 |
|                       |                 | 2640.3(41093)  | 21.23 | 20.99 |
|                       |                 | 2593 (40620)   | 21.66 | 21.49 |
|                       |                 | 2545.8(40148)  | 21.31 | 21.02 |
|                       |                 | 2498.5 (39675) | 21.43 | 21.18 |
|                       | 12RB-High (13)  | 2687.5 (41565) | 21.41 | 21.60 |
|                       |                 | 2640.3(41093)  | 21.19 | 21.35 |
|                       |                 | 2593 (40620)   | 21.66 | 21.59 |
|                       |                 | 2545.8(40148)  | 21.47 | 21.51 |
|                       |                 | 2498.5 (39675) | 21.65 | 21.64 |
|                       | 12RB-Middle (6) | 2687.5 (41565) | 21.56 | 21.45 |
|                       |                 | 2640.3(41093)  | 21.18 | 21.38 |
|                       |                 | 2593 (40620)   | 21.73 | 21.83 |
|                       |                 | 2545.8(40148)  | 21.37 | 21.48 |
|                       |                 | 2498.5 (39675) | 21.64 | 21.45 |
|                       | 12RB-Low (0)    | 2687.5 (41565) | 21.51 | 21.56 |
|                       |                 | 2640.3(41093)  | 21.27 | 21.34 |
|                       |                 | 2593 (40620)   | 21.76 | 21.78 |
|                       |                 | 2545.8(40148)  | 21.49 | 21.34 |
|                       |                 | 2498.5 (39675) | 21.59 | 21.40 |
|                       | 25RB (0)        | 2687.5 (41565) | 21.49 | 21.54 |
|                       |                 | 2640.3(41093)  | 21.19 | 21.36 |
|                       |                 | 2593 (40620)   | 21.71 | 21.65 |
|                       |                 | 2545.8(40148)  | 21.44 | 21.39 |
|                       |                 | 2498.5 (39675) | 21.63 | 21.88 |

|       |                  |              |       |       |
|-------|------------------|--------------|-------|-------|
| 10MHz | 1RB-High (49)    | 2685 (41540) | 21.44 | 21.26 |
|       |                  | 2639(41080)  | 21.30 | 21.01 |
|       |                  | 2593 (40620) | 21.67 | 21.40 |
|       |                  | 2547(40160)  | 21.65 | 21.02 |
|       |                  | 2501 (39700) | 21.69 | 21.27 |
|       | 1RB-Middle (24)  | 2685 (41540) | 21.77 | 21.39 |
|       |                  | 2639(41080)  | 21.46 | 21.03 |
|       |                  | 2593 (40620) | 21.98 | 21.47 |
|       |                  | 2547(40160)  | 21.72 | 21.29 |
|       |                  | 2501 (39700) | 21.77 | 21.45 |
|       | 1RB-Low (0)      | 2685 (41540) | 21.68 | 21.39 |
|       |                  | 2639(41080)  | 21.38 | 21.02 |
|       |                  | 2593 (40620) | 21.93 | 21.50 |
|       |                  | 2547(40160)  | 21.51 | 21.09 |
|       |                  | 2501 (39700) | 21.63 | 21.29 |
|       | 25RB-High (25)   | 2685 (41540) | 21.67 | 21.80 |
|       |                  | 2639(41080)  | 21.26 | 21.50 |
|       |                  | 2593 (40620) | 21.77 | 21.91 |
|       |                  | 2547(40160)  | 21.63 | 21.83 |
|       |                  | 2501 (39700) | 21.61 | 21.86 |
|       | 25RB-Middle (12) | 2685 (41540) | 21.66 | 21.79 |
|       |                  | 2639(41080)  | 21.40 | 21.28 |
|       |                  | 2593 (40620) | 21.83 | 21.85 |
|       |                  | 2547(40160)  | 21.56 | 21.77 |
|       |                  | 2501 (39700) | 21.61 | 21.53 |
|       | 25RB-Low (0)     | 2685 (41540) | 21.69 | 21.64 |
|       |                  | 2639(41080)  | 21.34 | 21.31 |
|       |                  | 2593 (40620) | 21.97 | 21.95 |
|       |                  | 2547(40160)  | 21.52 | 21.87 |
|       |                  | 2501 (39700) | 21.65 | 21.51 |
|       | 50RB (0)         | 2685 (41540) | 21.66 | 21.75 |
|       |                  | 2639(41080)  | 21.45 | 21.44 |
|       |                  | 2593 (40620) | 21.77 | 21.75 |
|       |                  | 2547(40160)  | 21.58 | 21.52 |
|       |                  | 2501 (39700) | 21.62 | 21.55 |

|       |                  |                |       |       |
|-------|------------------|----------------|-------|-------|
| 15MHz | 1RB-High (74)    | 2682.5 (41515) | 21.60 | 21.18 |
|       |                  | 2637.8(41068)  | 21.44 | 21.03 |
|       |                  | 2593 (40620)   | 21.80 | 21.37 |
|       |                  | 2548.3(40173)  | 21.76 | 21.38 |
|       |                  | 2503.5 (39725) | 21.48 | 21.06 |
|       | 1RB-Middle (37)  | 2682.5 (41515) | 21.61 | 21.24 |
|       |                  | 2637.8(41068)  | 21.46 | 21.10 |
|       |                  | 2593 (40620)   | 21.88 | 21.43 |
|       |                  | 2548.3(40173)  | 21.65 | 21.41 |
|       |                  | 2503.5 (39725) | 21.54 | 21.13 |
|       | 1RB-Low (0)      | 2682.5 (41515) | 21.58 | 21.34 |
|       |                  | 2637.8(41068)  | 21.42 | 21.08 |
|       |                  | 2593 (40620)   | 21.99 | 21.53 |
|       |                  | 2548.3(40173)  | 21.61 | 21.27 |
|       |                  | 2503.5 (39725) | 21.60 | 21.25 |
|       | 36RB-High (38)   | 2682.5 (41515) | 21.56 | 21.53 |
|       |                  | 2637.8(41068)  | 21.43 | 21.33 |
|       |                  | 2593 (40620)   | 21.68 | 21.68 |
|       |                  | 2548.3(40173)  | 21.67 | 21.70 |
|       |                  | 2503.5 (39725) | 21.49 | 21.39 |
|       | 36RB-Middle (19) | 2682.5 (41515) | 21.64 | 21.70 |
|       |                  | 2637.8(41068)  | 21.46 | 21.26 |
|       |                  | 2593 (40620)   | 21.60 | 21.66 |
|       |                  | 2548.3(40173)  | 21.64 | 21.57 |
|       |                  | 2503.5 (39725) | 21.45 | 21.37 |
|       | 36RB-Low (0)     | 2682.5 (41515) | 21.67 | 21.85 |
|       |                  | 2637.8(41068)  | 21.39 | 21.27 |
|       |                  | 2593 (40620)   | 21.91 | 21.88 |
|       |                  | 2548.3(40173)  | 21.58 | 21.61 |
|       |                  | 2503.5 (39725) | 21.51 | 21.44 |
|       | 75RB (0)         | 2682.5 (41515) | 21.64 | 21.58 |
|       |                  | 2637.8(41068)  | 21.31 | 21.34 |
|       |                  | 2593 (40620)   | 21.75 | 21.86 |
|       |                  | 2548.3(40173)  | 21.67 | 21.74 |
|       |                  | 2503.5 (39725) | 21.52 | 21.51 |

|       |                  |               |       |       |
|-------|------------------|---------------|-------|-------|
| 20MHz | 1RB-High (99)    | 2680 (41490)  | 21.46 | 20.97 |
|       |                  | 2636.5(41055) | 21.12 | 20.88 |
|       |                  | 2593 (40620)  | 21.61 | 21.20 |
|       |                  | 2549.5(40185) | 21.64 | 21.29 |
|       |                  | 2506 (39750)  | 21.30 | 20.87 |
|       | 1RB-Middle (50)  | 2680 (41490)  | 21.58 | 21.39 |
|       |                  | 2636.5(41055) | 21.25 | 21.25 |
|       |                  | 2593 (40620)  | 21.95 | 21.54 |
|       |                  | 2549.5(40185) | 21.88 | 21.36 |
|       |                  | 2506 (39750)  | 21.59 | 21.18 |
|       | 1RB-Low (0)      | 2680 (41490)  | 21.36 | 21.06 |
|       |                  | 2636.5(41055) | 21.34 | 20.99 |
|       |                  | 2593 (40620)  | 21.83 | 21.49 |
|       |                  | 2549.5(40185) | 21.42 | 20.99 |
|       |                  | 2506 (39750)  | 21.41 | 21.08 |
|       | 50RB-High (50)   | 2680 (41490)  | 21.51 | 21.53 |
|       |                  | 2636.5(41055) | 21.26 | 21.34 |
|       |                  | 2593 (40620)  | 21.60 | 21.57 |
|       |                  | 2549.5(40185) | 21.70 | 21.62 |
|       |                  | 2506 (39750)  | 21.44 | 21.30 |
|       | 50RB-Middle (25) | 2680 (41490)  | 21.63 | 21.54 |
|       |                  | 2636.5(41055) | 21.22 | 21.40 |
|       |                  | 2593 (40620)  | 21.76 | 21.66 |
|       |                  | 2549.5(40185) | 21.64 | 21.62 |
|       |                  | 2506 (39750)  | 21.47 | 21.33 |
|       | 50RB-Low (0)     | 2680 (41490)  | 21.57 | 21.58 |
|       |                  | 2636.5(41055) | 21.19 | 21.17 |
|       |                  | 2593 (40620)  | 21.56 | 21.69 |
|       |                  | 2549.5(40185) | 21.65 | 21.40 |
|       |                  | 2506 (39750)  | 21.46 | 21.46 |
|       | 100RB (0)        | 2680 (41490)  | 21.54 | 21.46 |
|       |                  | 2636.5(41055) | 21.32 | 21.31 |
|       |                  | 2593 (40620)  | 21.64 | 21.69 |
|       |                  | 2549.5(40185) | 21.60 | 21.60 |
|       |                  | 2506 (39750)  | 21.43 | 21.43 |

| LTE Band66-Normal power |                |                 |       |       |
|-------------------------|----------------|-----------------|-------|-------|
| BANDWIDTH               | Number of RBs  | Frequency       | QPSK  | 16QAM |
| 1.4MHz                  | 1RB-High (5)   | 1779.3 (132665) | 24.10 | 22.60 |
|                         |                | 1745 (132322)   | 24.41 | 23.48 |
|                         |                | 1710.7 (131979) | 24.48 | 22.91 |
|                         | 1RB-Middle (3) | 1779.3 (132665) | 24.22 | 22.90 |
|                         |                | 1745 (132322)   | 24.39 | 23.08 |
|                         |                | 1710.7 (131979) | 24.45 | 23.39 |
|                         | 1RB-Low (0)    | 1779.3 (132665) | 24.07 | 22.73 |
|                         |                | 1745 (132322)   | 24.37 | 22.87 |
|                         |                | 1710.7 (131979) | 24.24 | 22.87 |
|                         | 3RB-High (3)   | 1779.3 (132665) | 24.11 | 23.28 |
|                         |                | 1745 (132322)   | 24.69 | 23.41 |
|                         |                | 1710.7 (131979) | 24.38 | 23.22 |
|                         | 3RB-Middle (1) | 1779.3 (132665) | 24.14 | 23.32 |
|                         |                | 1745 (132322)   | 24.48 | 23.37 |
|                         |                | 1710.7 (131979) | 24.42 | 23.32 |
|                         | 3RB-Low (0)    | 1779.3 (132665) | 24.26 | 23.29 |
|                         |                | 1745 (132322)   | 24.54 | 23.44 |
|                         |                | 1710.7 (131979) | 24.44 | 23.30 |
|                         | 6RB (0)        | 1779.3 (132665) | 23.02 | 21.88 |
|                         |                | 1745 (132322)   | 23.44 | 22.39 |
|                         |                | 1710.7 (131979) | 23.43 | 22.48 |
| 3MHz                    | 1RB-High (14)  | 1778.5 (132657) | 24.26 | 22.57 |
|                         |                | 1745 (132322)   | 24.53 | 23.06 |
|                         |                | 1711.5 (131987) | 24.45 | 23.08 |
|                         | 1RB-Middle (7) | 1778.5 (132657) | 24.30 | 22.86 |
|                         |                | 1745 (132322)   | 24.65 | 23.25 |
|                         |                | 1711.5 (131987) | 24.65 | 23.11 |
|                         | 1RB-Low (0)    | 1778.5 (132657) | 24.23 | 22.60 |
|                         |                | 1745 (132322)   | 24.57 | 23.17 |
|                         |                | 1711.5 (131987) | 24.57 | 22.72 |
|                         | 8RB-High (7)   | 1778.5 (132657) | 23.28 | 22.26 |
|                         |                | 1745 (132322)   | 23.56 | 22.70 |
|                         |                | 1711.5 (131987) | 23.44 | 22.64 |
|                         | 8RB-Middle (4) | 1778.5 (132657) | 23.25 | 22.34 |
|                         |                | 1745 (132322)   | 23.52 | 22.76 |
|                         |                | 1711.5 (131987) | 23.50 | 22.70 |
|                         | 8RB-Low (0)    | 1778.5 (132657) | 23.28 | 22.42 |
|                         |                | 1745 (132322)   | 23.51 | 22.63 |
|                         |                | 1711.5 (131987) | 23.49 | 22.69 |
|                         | 15RB (0)       | 1778.5 (132657) | 23.21 | 22.09 |
|                         |                | 1745 (132322)   | 23.49 | 22.31 |
|                         |                | 1711.5 (131987) | 23.38 | 22.44 |

|       |                  |                 |       |       |
|-------|------------------|-----------------|-------|-------|
| 5MHz  | 1RB-High (24)    | 1777.5 (132647) | 24.15 | 22.50 |
|       |                  | 1745 (132322)   | 24.48 | 23.05 |
|       |                  | 1712.5 (131997) | 24.28 | 23.74 |
|       | 1RB-Middle (12)  | 1777.5 (132647) | 24.20 | 22.98 |
|       |                  | 1745 (132322)   | 24.45 | 23.34 |
|       |                  | 1712.5 (131997) | 24.60 | 23.68 |
|       | 1RB-Low (0)      | 1777.5 (132647) | 24.29 | 22.60 |
|       |                  | 1745 (132322)   | 24.49 | 22.78 |
|       |                  | 1712.5 (131997) | 24.40 | 22.82 |
|       | 12RB-High (13)   | 1777.5 (132647) | 23.18 | 22.07 |
|       |                  | 1745 (132322)   | 23.52 | 22.42 |
|       |                  | 1712.5 (131997) | 23.41 | 22.34 |
|       | 12RB-Middle (6)  | 1777.5 (132647) | 23.19 | 22.21 |
|       |                  | 1745 (132322)   | 23.55 | 22.47 |
|       |                  | 1712.5 (131997) | 23.48 | 22.38 |
|       | 12RB-Low (0)     | 1777.5 (132647) | 23.24 | 22.36 |
|       |                  | 1745 (132322)   | 23.57 | 22.55 |
|       |                  | 1712.5 (131997) | 23.40 | 22.27 |
|       | 25RB (0)         | 1777.5 (132647) | 23.10 | 22.23 |
|       |                  | 1745 (132322)   | 23.56 | 22.71 |
|       |                  | 1712.5 (131997) | 23.47 | 22.41 |
| 10MHz | 1RB-High (49)    | 1775 (132622)   | 23.91 | 23.07 |
|       |                  | 1745 (132322)   | 24.75 | 23.13 |
|       |                  | 1715 (132022)   | 23.72 | 23.03 |
|       | 1RB-Middle (24)  | 1775 (132622)   | 24.57 | 22.82 |
|       |                  | 1745 (132322)   | 24.73 | 23.47 |
|       |                  | 1715 (132022)   | 24.56 | 23.33 |
|       | 1RB-Low (0)      | 1775 (132622)   | 24.38 | 22.98 |
|       |                  | 1745 (132322)   | 24.56 | 23.39 |
|       |                  | 1715 (132022)   | 23.92 | 23.14 |
|       | 25RB-High (25)   | 1775 (132622)   | 23.25 | 22.16 |
|       |                  | 1745 (132322)   | 23.61 | 22.67 |
|       |                  | 1715 (132022)   | 23.49 | 22.60 |
|       | 25RB-Middle (12) | 1775 (132622)   | 23.32 | 22.31 |
|       |                  | 1745 (132322)   | 23.64 | 22.70 |
|       |                  | 1715 (132022)   | 23.55 | 22.59 |
|       | 25RB-Low (0)     | 1775 (132622)   | 23.35 | 22.39 |
|       |                  | 1745 (132322)   | 23.64 | 22.77 |
|       |                  | 1715 (132022)   | 23.54 | 22.65 |
|       | 50RB (0)         | 1775 (132622)   | 23.27 | 22.26 |
|       |                  | 1745 (132322)   | 23.62 | 22.67 |
|       |                  | 1715 (132022)   | 23.56 | 22.56 |

|       |                  |                 |       |       |
|-------|------------------|-----------------|-------|-------|
| 15MHz | 1RB-High (74)    | 1772.5 (132597) | 23.82 | 22.52 |
|       |                  | 1745 (132322)   | 24.55 | 23.14 |
|       |                  | 1717.5 (132047) | 23.77 | 23.07 |
|       | 1RB-Middle (37)  | 1772.5 (132597) | 24.38 | 22.86 |
|       |                  | 1745 (132322)   | 24.75 | 23.13 |
|       |                  | 1717.5 (132047) | 24.56 | 23.08 |
|       | 1RB-Low (0)      | 1772.5 (132597) | 24.34 | 23.16 |
|       |                  | 1745 (132322)   | 24.74 | 23.27 |
|       |                  | 1717.5 (132047) | 23.88 | 23.02 |
|       | 36RB-High (38)   | 1772.5 (132597) | 23.31 | 22.31 |
|       |                  | 1745 (132322)   | 23.63 | 22.68 |
|       |                  | 1717.5 (132047) | 23.61 | 22.61 |
|       | 36RB-Middle (19) | 1772.5 (132597) | 23.36 | 22.33 |
|       |                  | 1745 (132322)   | 23.71 | 22.84 |
|       |                  | 1717.5 (132047) | 23.55 | 22.47 |
|       | 36RB-Low (0)     | 1772.5 (132597) | 23.40 | 22.34 |
|       |                  | 1745 (132322)   | 23.69 | 22.83 |
|       |                  | 1717.5 (132047) | 23.60 | 22.50 |
|       | 75RB (0)         | 1772.5 (132597) | 23.30 | 22.34 |
|       |                  | 1745 (132322)   | 23.71 | 22.75 |
|       |                  | 1717.5 (132047) | 23.56 | 22.55 |
| 20MHz | 1RB-High (99)    | 1770 (132572)   | 24.14 | 22.79 |
|       |                  | 1745 (132322)   | 24.45 | 23.14 |
|       |                  | 1720 (132072)   | 24.17 | 22.95 |
|       | 1RB-Middle (50)  | 1770 (132572)   | 24.37 | 23.02 |
|       |                  | 1745 (132322)   | 24.58 | 23.35 |
|       |                  | 1720 (132072)   | 24.88 | 23.12 |
|       | 1RB-Low (0)      | 1770 (132572)   | 24.32 | 22.63 |
|       |                  | 1745 (132322)   | 24.63 | 23.31 |
|       |                  | 1720 (132072)   | 24.13 | 22.85 |
|       | 50RB-High (50)   | 1770 (132572)   | 23.22 | 22.32 |
|       |                  | 1745 (132322)   | 23.53 | 22.63 |
|       |                  | 1720 (132072)   | 23.49 | 22.66 |
|       | 50RB-Middle (25) | 1770 (132572)   | 23.20 | 22.24 |
|       |                  | 1745 (132322)   | 23.55 | 22.64 |
|       |                  | 1720 (132072)   | 23.48 | 22.66 |
|       | 50RB-Low (0)     | 1770 (132572)   | 23.18 | 22.40 |
|       |                  | 1745 (132322)   | 23.60 | 22.52 |
|       |                  | 1720 (132072)   | 23.62 | 22.60 |
|       | 100RB (0)        | 1770 (132572)   | 23.13 | 22.31 |
|       |                  | 1745 (132322)   | 23.55 | 22.64 |
|       |                  | 1720 (132072)   | 23.50 | 22.57 |



| LTE Band66-Low power |                |                 |       |       |
|----------------------|----------------|-----------------|-------|-------|
| BANDWIDTH            | Number of RBs  | Frequency       | QPSK  | 16QAM |
| 1.4MHz               | 1RB-High (5)   | 1779.3 (132665) | 20.26 | 20.40 |
|                      |                | 1745 (132322)   | 20.69 | 20.10 |
|                      |                | 1710.7 (131979) | 20.63 | 20.19 |
|                      | 1RB-Middle (3) | 1779.3 (132665) | 20.41 | 20.16 |
|                      |                | 1745 (132322)   | 20.84 | 20.36 |
|                      |                | 1710.7 (131979) | 20.79 | 20.16 |
|                      | 1RB-Low (0)    | 1779.3 (132665) | 20.23 | 20.10 |
|                      |                | 1745 (132322)   | 20.56 | 20.23 |
|                      |                | 1710.7 (131979) | 20.54 | 20.04 |
|                      | 3RB-High (3)   | 1779.3 (132665) | 20.49 | 20.10 |
|                      |                | 1745 (132322)   | 20.71 | 20.57 |
|                      |                | 1710.7 (131979) | 20.74 | 20.44 |
|                      | 3RB-Middle (1) | 1779.3 (132665) | 20.49 | 20.41 |
|                      |                | 1745 (132322)   | 20.84 | 20.62 |
|                      |                | 1710.7 (131979) | 20.69 | 20.53 |
|                      | 3RB-Low (0)    | 1779.3 (132665) | 20.58 | 20.15 |
|                      |                | 1745 (132322)   | 20.71 | 20.52 |
|                      |                | 1710.7 (131979) | 20.65 | 20.41 |
|                      | 6RB (0)        | 1779.3 (132665) | 20.25 | 20.10 |
|                      |                | 1745 (132322)   | 20.70 | 20.57 |
|                      |                | 1710.7 (131979) | 20.64 | 20.54 |
| 3MHz                 | 1RB-High (14)  | 1778.5 (132657) | 20.37 | 19.61 |
|                      |                | 1745 (132322)   | 20.71 | 20.11 |
|                      |                | 1711.5 (131987) | 20.64 | 19.91 |
|                      | 1RB-Middle (7) | 1778.5 (132657) | 20.52 | 19.90 |
|                      |                | 1745 (132322)   | 20.83 | 20.34 |
|                      |                | 1711.5 (131987) | 20.49 | 20.25 |
|                      | 1RB-Low (0)    | 1778.5 (132657) | 20.41 | 19.77 |
|                      |                | 1745 (132322)   | 20.68 | 20.16 |
|                      |                | 1711.5 (131987) | 20.54 | 19.93 |
|                      | 8RB-High (7)   | 1778.5 (132657) | 20.29 | 20.49 |
|                      |                | 1745 (132322)   | 20.71 | 20.75 |
|                      |                | 1711.5 (131987) | 20.58 | 20.63 |
|                      | 8RB-Middle (4) | 1778.5 (132657) | 20.34 | 20.45 |
|                      |                | 1745 (132322)   | 20.75 | 20.79 |
|                      |                | 1711.5 (131987) | 20.54 | 20.59 |
|                      | 8RB-Low (0)    | 1778.5 (132657) | 20.45 | 20.37 |
|                      |                | 1745 (132322)   | 20.73 | 20.77 |
|                      |                | 1711.5 (131987) | 20.64 | 20.68 |
|                      | 15RB (0)       | 1778.5 (132657) | 20.32 | 20.31 |
|                      |                | 1745 (132322)   | 20.60 | 20.72 |
|                      |                | 1711.5 (131987) | 20.51 | 20.62 |

|       |                  |                 |       |       |
|-------|------------------|-----------------|-------|-------|
| 5MHz  | 1RB-High (24)    | 1777.5 (132647) | 20.19 | 19.57 |
|       |                  | 1745 (132322)   | 20.52 | 20.53 |
|       |                  | 1712.5 (131997) | 20.47 | 20.18 |
|       | 1RB-Middle (12)  | 1777.5 (132647) | 20.17 | 19.93 |
|       |                  | 1745 (132322)   | 20.77 | 20.23 |
|       |                  | 1712.5 (131997) | 20.73 | 20.26 |
|       | 1RB-Low (0)      | 1777.5 (132647) | 20.23 | 19.61 |
|       |                  | 1745 (132322)   | 20.59 | 20.31 |
|       |                  | 1712.5 (131997) | 20.57 | 20.37 |
|       | 12RB-High (13)   | 1777.5 (132647) | 20.23 | 20.09 |
|       |                  | 1745 (132322)   | 20.55 | 20.73 |
|       |                  | 1712.5 (131997) | 20.51 | 20.61 |
|       | 12RB-Middle (6)  | 1777.5 (132647) | 20.25 | 20.21 |
|       |                  | 1745 (132322)   | 20.62 | 20.66 |
|       |                  | 1712.5 (131997) | 20.59 | 20.43 |
|       | 12RB-Low (0)     | 1777.5 (132647) | 20.33 | 20.34 |
|       |                  | 1745 (132322)   | 20.61 | 20.51 |
|       |                  | 1712.5 (131997) | 20.61 | 20.70 |
|       | 25RB (0)         | 1777.5 (132647) | 20.19 | 20.29 |
|       |                  | 1745 (132322)   | 20.70 | 20.60 |
|       |                  | 1712.5 (131997) | 20.56 | 20.64 |
| 10MHz | 1RB-High (49)    | 1775 (132622)   | 20.14 | 19.95 |
|       |                  | 1745 (132322)   | 20.81 | 20.22 |
|       |                  | 1715 (132022)   | 20.58 | 20.13 |
|       | 1RB-Middle (24)  | 1775 (132622)   | 20.42 | 20.39 |
|       |                  | 1745 (132322)   | 20.83 | 20.47 |
|       |                  | 1715 (132022)   | 20.51 | 20.30 |
|       | 1RB-Low (0)      | 1775 (132622)   | 20.26 | 19.85 |
|       |                  | 1745 (132322)   | 20.58 | 20.30 |
|       |                  | 1715 (132022)   | 20.57 | 20.09 |
|       | 25RB-High (25)   | 1775 (132622)   | 20.34 | 20.32 |
|       |                  | 1745 (132322)   | 20.66 | 20.85 |
|       |                  | 1715 (132022)   | 20.60 | 20.59 |
|       | 25RB-Middle (12) | 1775 (132622)   | 20.38 | 20.28 |
|       |                  | 1745 (132322)   | 20.77 | 20.75 |
|       |                  | 1715 (132022)   | 20.52 | 20.60 |
|       | 25RB-Low (0)     | 1775 (132622)   | 20.42 | 20.31 |
|       |                  | 1745 (132322)   | 20.70 | 20.59 |
|       |                  | 1715 (132022)   | 20.59 | 20.57 |
|       | 50RB (0)         | 1775 (132622)   | 20.30 | 20.29 |
|       |                  | 1745 (132322)   | 20.67 | 20.57 |
|       |                  | 1715 (132022)   | 20.59 | 20.76 |

|       |                  |                 |       |       |
|-------|------------------|-----------------|-------|-------|
| 15MHz | 1RB-High (74)    | 1772.5 (132597) | 20.26 | 19.89 |
|       |                  | 1745 (132322)   | 20.71 | 20.47 |
|       |                  | 1717.5 (132047) | 20.70 | 20.78 |
|       | 1RB-Middle (37)  | 1772.5 (132597) | 20.41 | 19.63 |
|       |                  | 1745 (132322)   | 20.83 | 20.48 |
|       |                  | 1717.5 (132047) | 20.55 | 20.52 |
|       | 1RB-Low (0)      | 1772.5 (132597) | 20.52 | 20.06 |
|       |                  | 1745 (132322)   | 20.53 | 20.29 |
|       |                  | 1717.5 (132047) | 20.56 | 20.48 |
|       | 36RB-High (38)   | 1772.5 (132597) | 20.46 | 20.33 |
|       |                  | 1745 (132322)   | 20.77 | 20.78 |
|       |                  | 1717.5 (132047) | 20.76 | 20.72 |
|       | 36RB-Middle (19) | 1772.5 (132597) | 20.47 | 20.46 |
|       |                  | 1745 (132322)   | 20.81 | 20.74 |
|       |                  | 1717.5 (132047) | 20.73 | 20.69 |
|       | 36RB-Low (0)     | 1772.5 (132597) | 20.49 | 20.40 |
|       |                  | 1745 (132322)   | 20.84 | 20.67 |
|       |                  | 1717.5 (132047) | 20.59 | 20.62 |
|       | 75RB (0)         | 1772.5 (132597) | 20.38 | 20.46 |
|       |                  | 1745 (132322)   | 20.75 | 20.67 |
|       |                  | 1717.5 (132047) | 20.64 | 20.66 |
| 20MHz | 1RB-High (99)    | 1770 (132572)   | 20.23 | 19.96 |
|       |                  | 1745 (132322)   | 20.62 | 20.27 |
|       |                  | 1720 (132072)   | 20.63 | 20.43 |
|       | 1RB-Middle (50)  | 1770 (132572)   | 20.35 | 20.70 |
|       |                  | 1745 (132322)   | 20.90 | 20.58 |
|       |                  | 1720 (132072)   | 20.77 | 20.58 |
|       | 1RB-Low (0)      | 1770 (132572)   | 20.32 | 20.10 |
|       |                  | 1745 (132322)   | 20.66 | 20.30 |
|       |                  | 1720 (132072)   | 20.66 | 20.44 |
|       | 50RB-High (50)   | 1770 (132572)   | 20.36 | 20.39 |
|       |                  | 1745 (132322)   | 20.69 | 20.74 |
|       |                  | 1720 (132072)   | 20.75 | 20.70 |
|       | 50RB-Middle (25) | 1770 (132572)   | 20.42 | 20.46 |
|       |                  | 1745 (132322)   | 20.81 | 20.84 |
|       |                  | 1720 (132072)   | 20.73 | 20.74 |
|       | 50RB-Low (0)     | 1770 (132572)   | 20.48 | 20.42 |
|       |                  | 1745 (132322)   | 20.76 | 20.81 |
|       |                  | 1720 (132072)   | 20.74 | 20.59 |
|       | 100RB (0)        | 1770 (132572)   | 20.44 | 20.45 |
|       |                  | 1745 (132322)   | 20.78 | 20.71 |
|       |                  | 1720 (132072)   | 20.74 | 20.77 |

| LTE Band71 |                  |                |       |       |
|------------|------------------|----------------|-------|-------|
| BANDWIDTH  | Number of RBs    | Frequency      | QPSK  | 16QAM |
| 5MHz       | 1RB-High (24)    | 695.5 (133447) | 23.45 | 21.95 |
|            |                  | 680.5 (133297) | 23.20 | 22.05 |
|            |                  | 665.5 (133147) | 23.67 | 22.11 |
|            | 1RB-Middle (12)  | 695.5 (133447) | 23.43 | 22.23 |
|            |                  | 680.5 (133297) | 23.72 | 22.34 |
|            |                  | 665.5 (133147) | 23.96 | 22.63 |
|            | 1RB-Low (0)      | 695.5 (133447) | 23.55 | 22.23 |
|            |                  | 680.5 (133297) | 23.40 | 22.11 |
|            |                  | 665.5 (133147) | 23.76 | 22.32 |
|            | 12RB-High (13)   | 695.5 (133447) | 22.57 | 21.36 |
|            |                  | 680.5 (133297) | 22.76 | 21.60 |
|            |                  | 665.5 (133147) | 22.86 | 21.95 |
|            | 12RB-Middle (6)  | 695.5 (133447) | 22.50 | 21.36 |
|            |                  | 680.5 (133297) | 22.70 | 21.56 |
|            |                  | 665.5 (133147) | 22.84 | 21.86 |
|            | 12RB-Low (0)     | 695.5 (133447) | 22.58 | 21.27 |
|            |                  | 680.5 (133297) | 22.75 | 21.50 |
|            |                  | 665.5 (133147) | 22.91 | 21.82 |
|            | 25RB (0)         | 695.5 (133447) | 22.48 | 21.47 |
|            |                  | 680.5 (133297) | 22.71 | 21.64 |
|            |                  | 665.5 (133147) | 22.93 | 21.92 |
| 10MHz      | 1RB-High (49)    | 693 (132422)   | 23.46 | 22.15 |
|            |                  | 680.5 (133297) | 23.35 | 22.21 |
|            |                  | 668 (133172)   | 23.63 | 22.29 |
|            | 1RB-Middle (24)  | 693 (132422)   | 23.59 | 22.07 |
|            |                  | 680.5 (133297) | 23.53 | 22.41 |
|            |                  | 668 (133172)   | 23.90 | 22.75 |
|            | 1RB-Low (0)      | 693 (132422)   | 23.65 | 22.13 |
|            |                  | 680.5 (133297) | 23.47 | 22.49 |
|            |                  | 668 (133172)   | 23.74 | 22.67 |
|            | 25RB-High (25)   | 693 (132422)   | 22.59 | 21.67 |
|            |                  | 680.5 (133297) | 22.72 | 21.69 |
|            |                  | 668 (133172)   | 22.95 | 21.96 |
|            | 25RB-Middle (12) | 693 (132422)   | 22.59 | 21.58 |
|            |                  | 680.5 (133297) | 22.71 | 21.74 |
|            |                  | 668 (133172)   | 22.83 | 21.87 |
|            | 25RB-Low (0)     | 693 (132422)   | 22.62 | 21.64 |
|            |                  | 680.5 (133297) | 22.73 | 21.85 |
|            |                  | 668 (133172)   | 22.89 | 21.92 |
|            | 50RB (0)         | 693 (132422)   | 22.56 | 21.48 |
|            |                  | 680.5 (133297) | 22.77 | 21.58 |
|            |                  | 668 (133172)   | 22.96 | 21.99 |

|       |                  |                |       |       |
|-------|------------------|----------------|-------|-------|
| 15MHz | 1RB-High (74)    | 690.5 (133397) | 23.35 | 21.74 |
|       |                  | 680.5 (133297) | 23.31 | 22.11 |
|       |                  | 670.5 (133197) | 23.63 | 22.47 |
|       | 1RB-Middle (37)  | 690.5 (133397) | 23.44 | 21.78 |
|       |                  | 680.5 (133297) | 23.52 | 22.01 |
|       |                  | 670.5 (133197) | 23.80 | 22.37 |
|       | 1RB-Low (0)      | 690.5 (133397) | 23.71 | 21.96 |
|       |                  | 680.5 (133297) | 23.74 | 22.29 |
|       |                  | 670.5 (133197) | 23.72 | 22.62 |
|       | 36RB-High (38)   | 690.5 (133397) | 22.60 | 21.49 |
|       |                  | 680.5 (133297) | 22.75 | 21.65 |
|       |                  | 670.5 (133197) | 22.83 | 21.62 |
|       | 36RB-Middle (19) | 690.5 (133397) | 22.64 | 21.62 |
|       |                  | 680.5 (133297) | 22.73 | 21.58 |
|       |                  | 670.5 (133197) | 22.84 | 21.72 |
|       | 36RB-Low (0)     | 690.5 (133397) | 22.75 | 21.66 |
|       |                  | 680.5 (133297) | 22.76 | 21.70 |
|       |                  | 670.5 (133197) | 22.92 | 21.84 |
|       | 75RB (0)         | 690.5 (133397) | 22.56 | 21.62 |
|       |                  | 680.5 (133297) | 22.76 | 21.77 |
|       |                  | 670.5 (133197) | 22.89 | 21.93 |
| 20MHz | 1RB-High (99)    | 688 (133372)   | 23.11 | 21.84 |
|       |                  | 683 (133322)   | 23.36 | 21.87 |
|       |                  | 673 (133222)   | 23.37 | 21.58 |
|       | 1RB-Middle (50)  | 688 (133372)   | 23.63 | 22.45 |
|       |                  | 683 (133322)   | 23.76 | 22.39 |
|       |                  | 673 (133222)   | 23.77 | 22.11 |
|       | 1RB-Low (0)      | 688 (133372)   | 23.37 | 22.12 |
|       |                  | 683 (133322)   | 23.52 | 22.27 |
|       |                  | 673 (133222)   | 23.54 | 22.18 |
|       | 50RB-High (50)   | 688 (133372)   | 22.46 | 21.46 |
|       |                  | 683 (133322)   | 22.60 | 21.71 |
|       |                  | 673 (133222)   | 22.65 | 21.59 |
|       | 50RB-Middle (25) | 688 (133372)   | 22.58 | 21.59 |
|       |                  | 683 (133322)   | 22.70 | 21.70 |
|       |                  | 673 (133222)   | 22.73 | 21.69 |
|       | 50RB-Low (0)     | 688 (133372)   | 22.69 | 21.61 |
|       |                  | 683 (133322)   | 22.64 | 21.75 |
|       |                  | 673 (133222)   | 22.69 | 21.55 |
|       | 100RB (0)        | 688 (133372)   | 22.58 | 21.50 |
|       |                  | 683 (133322)   | 22.67 | 21.54 |
|       |                  | 673 (133222)   | 22.70 | 21.63 |

## 11.4 Wi-Fi and BT Measurement result

The maximum output power of BT antenna is 8.96dBm.

The maximum tune up of BT antenna is 9.5dBm.

The average conducted power for Wi-Fi 2.4G is as following:

| 802.11b           |       |       |         |        |        |        |        |        |
|-------------------|-------|-------|---------|--------|--------|--------|--------|--------|
| Channel\data rate | 1Mbps | 2Mbps | 5.5Mbps | 11Mbps |        |        |        |        |
| 11(2462MHz)       | 15.73 | /     | 15.88   | /      |        |        |        |        |
| 6(2437(MHz)       | 16.32 | 16.38 | 16.48   | 16.46  |        |        |        |        |
| 1(2412MHz)        | 15.96 | /     | 16.03   | /      |        |        |        |        |
| Tune up           | 16.50 | 16.50 | 16.50   | 16.50  |        |        |        |        |
| 802.11g           |       |       |         |        |        |        |        |        |
| Channel\data rate | 6Mbps | 9Mbps | 12Mbps  | 18Mbps | 24Mbps | 36Mbps | 48Mbps | 54Mbps |
| 11(2462MHz)       | 15.10 | /     | /       | /      | /      | /      | /      | /      |
| 6(2437(MHz)       | 16.27 | 16.26 | 16.23   | 16.22  | 16.16  | 14.71  | 14.68  | 14.66  |
| 1(2412MHz)        | 15.81 | /     | /       | /      | /      | /      | /      | /      |
| Tune up           | 17.00 | 17.00 | 17.00   | 17.00  | 17.00  | 15.50  | 15.50  | 15.50  |
| 802.11n-20MHz     |       |       |         |        |        |        |        |        |
| Channel\data rate | MCS0  | MCS1  | MCS2    | MCS3   | MCS4   | MCS5   | MCS6   | MCS7   |
| 11(2462MHz)       | 14.10 | /     | /       | /      | /      | /      | /      | /      |
| 6(2437(MHz)       | 15.30 | 15.28 | 15.26   | 15.23  | 15.20  | 14.66  | 14.67  | 14.64  |
| 1(2412MHz)        | 14.74 | /     | /       | /      | /      | /      | /      | /      |
| Tune up           | 17.00 | 17.00 | 17.00   | 17.00  | 17.00  | 15.50  | 15.50  | 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 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**

Please refer to the picture of antenna locations in the document: “The Photos of SAR test - I21Z61291”

### 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  | Yes       | No         | Yes      | No          |

### 12.4 Standalone SAR Test Exclusion Considerations

Standalone 1-g head or body SAR evaluation by measurement or numerical simulation is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied. The 1-g SAR test exclusion threshold for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$$\left[ \frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$
 for 1-g SAR, where

- $f(\text{GHz})$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

**Table 12.1: Standalone SAR test exclusion considerations**

| Band/Mode   | F(GHz) | Position | SAR test exclusion threshold(mW) | RF output power |       | SAR test exclusion |
|-------------|--------|----------|----------------------------------|-----------------|-------|--------------------|
|             |        |          |                                  | dBm             | mW    |                    |
| Bluetooth   | 2.441  | Head     | 9.60                             | 9.5             | 8.91  | Yes                |
|             |        | Body     | 19.20                            | 9.5             | 8.91  | Yes                |
| 2.4GHz WLAN | 2.45   | Head     | 9.58                             | 16.5            | 44.67 | No                 |
|             |        | Body     | 19.17                            | 16.5            | 44.67 | 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 B41-PC2) | 0.75         | 0.47      | <b>1.22</b> |
| <b>Highest SAR value for Body</b> | Rear 10mm (LTE B7)             | 0.85         | 0.56      | <b>1.41</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 (LTE B7) | 1.06         | 0.37 <sup>[1]</sup> | <b>1.43</b> |
| <b>Highest SAR value for Body</b> | Rear 15mm (LTE B7)         | 1.17         | 0.12 <sup>[1]</sup> | <b>1.29</b> |

[1] - Estimated SAR for Bluetooth (see the table 13.3)

**Table 13.3: Estimated SAR for Bluetooth**

| Mode/Band | F (GHz) | Position | Distance (mm) | Upper limit of power * |      | Estimated <sub>1g</sub> (W/kg) |
|-----------|---------|----------|---------------|------------------------|------|--------------------------------|
|           |         |          |               | dBm                    | mW   |                                |
| Bluetooth | 2.441   | Head     | 5             | 9.5                    | 8.91 | 0.37                           |
| Bluetooth | 2.441   | Body     | 10            | 9.5                    | 8.91 | 0.19                           |
| Bluetooth | 2.441   | Body     | 15            | 9.5                    | 8.91 | 0.12                           |

\* - Maximum possible output power declared by manufacturer

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance,mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;  
where x = 7.5 for 1-g SAR.

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

#### 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.

## 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        | 1:8.3            |
| GPRS/EGPRS 850/1900 | 1:4 or 1:2.67    |
| 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                                                          | MHz   |       |               |            |                       |                          |                          |                          |                         |                         |                  |
| 190                                                          | 836.6 | Left  | Cheek         | /          | 31.63                 | 32.5                     | 0.315                    | <b>0.38</b>              | 0.431                   | <b>0.53</b>             | -0.13            |
| 190                                                          | 836.6 | Left  | Tilt          | /          | 31.63                 | 32.5                     | 0.183                    | <b>0.22</b>              | 0.237                   | <b>0.29</b>             | -0.11            |
| 251                                                          | 848.8 | Right | Cheek         | /          | 31.65                 | 32.5                     | 0.317                    | <b>0.39</b>              | 0.432                   | <b>0.53</b>             | -0.07            |
| 190                                                          | 836.6 | Right | Cheek         | Fig.1      | 31.63                 | 32.5                     | 0.336                    | <b>0.41</b>              | 0.46                    | <b>0.56</b>             | -0.13            |
| 128                                                          | 824.2 | Right | Cheek         | /          | 31.57                 | 32.5                     | 0.301                    | <b>0.37</b>              | 0.417                   | <b>0.52</b>             | 0.14             |
| 190                                                          | 836.6 | Right | Tilt          | /          | 31.63                 | 32.5                     | 0.179                    | <b>0.22</b>              | 0.227                   | <b>0.28</b>             | 0.06             |

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

| Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5°C |       |                                  |                  |               |                             |                             |                                |                                |                               |                               |                        |
|--------------------------------------------------------------|-------|----------------------------------|------------------|---------------|-----------------------------|-----------------------------|--------------------------------|--------------------------------|-------------------------------|-------------------------------|------------------------|
| Frequency                                                    |       | Mode<br>(number of<br>timeslots) | Test<br>Position | Figure<br>No. | Conducted<br>Power<br>(dBm) | Max. tune-up<br>Power (dBm) | Measured<br>SAR(10g)<br>(W/kg) | Reported<br>SAR(10g)<br>(W/kg) | Measured<br>SAR(1g)<br>(W/kg) | Reported<br>SAR(1g)<br>(W/kg) | Power<br>Drift<br>(dB) |
| Ch.                                                          | MHz   |                                  |                  |               |                             |                             |                                |                                |                               |                               |                        |
| 190                                                          | 836.6 | GPRS (2)                         | Front            | /             | 29.47                       | 30.5                        | 0.098                          | <b>0.12</b>                    | 0.132                         | <b>0.17</b>                   | -0.07                  |
| 251                                                          | 848.8 | GPRS (2)                         | Rear             | /             | 29.53                       | 30.5                        | 0.224                          | <b>0.28</b>                    | 0.309                         | <b>0.39</b>                   | 0.10                   |
| 190                                                          | 836.6 | GPRS (2)                         | Rear             | Fig.2         | 29.47                       | 30.5                        | 0.265                          | <b>0.34</b>                    | 0.367                         | <b>0.47</b>                   | -0.11                  |
| 128                                                          | 824.2 | GPRS (2)                         | Rear             | /             | 29.37                       | 30.5                        | 0.226                          | <b>0.29</b>                    | 0.31                          | <b>0.40</b>                   | -0.01                  |
| 190                                                          | 836.6 | GPRS (2)                         | Rear             | Unfold        | 29.47                       | 30.5                        | 0.116                          | <b>0.15</b>                    | 0.166                         | <b>0.21</b>                   | -0.18                  |
| 190                                                          | 836.6 | EGPRS (2)                        | Rear             | /             | 29.42                       | 30.5                        | 0.248                          | <b>0.32</b>                    | 0.346                         | <b>0.44</b>                   | 0.06                   |

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

**Table 14.1-3: SAR Values (GSM 850 MHz Band - Hotspot)**

| Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5°C |       |                                  |                  |               |                             |                             |                                |                                |                               |                               |                        |
|--------------------------------------------------------------|-------|----------------------------------|------------------|---------------|-----------------------------|-----------------------------|--------------------------------|--------------------------------|-------------------------------|-------------------------------|------------------------|
| Frequency                                                    |       | Mode<br>(number of<br>timeslots) | Test<br>Position | Figure<br>No. | Conducted<br>Power<br>(dBm) | Max. tune-up<br>Power (dBm) | Measured<br>SAR(10g)<br>(W/kg) | Reported<br>SAR(10g)<br>(W/kg) | Measured<br>SAR(1g)<br>(W/kg) | Reported<br>SAR(1g)<br>(W/kg) | Power<br>Drift<br>(dB) |
| Ch.                                                          | MHz   |                                  |                  |               |                             |                             |                                |                                |                               |                               |                        |
| 190                                                          | 836.6 | GPRS (2)                         | Front            | /             | 27.58                       | 28                          | 0.151                          | <b>0.17</b>                    | 0.204                         | <b>0.22</b>                   | 0.06                   |
| 251                                                          | 848.8 | GPRS (2)                         | Rear             | Fig.3         | 27.6                        | 28                          | 0.389                          | <b>0.43</b>                    | 0.539                         | <b>0.59</b>                   | -0.09                  |
| 190                                                          | 836.6 | GPRS (2)                         | Rear             | /             | 27.58                       | 28                          | 0.363                          | <b>0.40</b>                    | 0.511                         | <b>0.56</b>                   | -0.06                  |
| 128                                                          | 824.2 | GPRS (2)                         | Rear             | /             | 27.57                       | 28                          | 0.356                          | <b>0.39</b>                    | 0.504                         | <b>0.56</b>                   | -0.14                  |
| 190                                                          | 836.6 | GPRS (2)                         | Rear             | Unfold        | 27.58                       | 28                          | 0.27                           | <b>0.30</b>                    | 0.384                         | <b>0.42</b>                   | -0.08                  |
| 190                                                          | 836.6 | GPRS (2)                         | Left             | /             | 27.58                       | 28                          | 0.121                          | <b>0.13</b>                    | 0.171                         | <b>0.19</b>                   | 0.05                   |
| 190                                                          | 836.6 | GPRS (2)                         | Right            | /             | 27.58                       | 28                          | 0.245                          | <b>0.27</b>                    | 0.343                         | <b>0.38</b>                   | -0.04                  |
| 190                                                          | 836.6 | GPRS (2)                         | Bottom           | /             | 27.58                       | 28                          | 0.071                          | <b>0.08</b>                    | 0.121                         | <b>0.13</b>                   | -0.02                  |
| 190                                                          | 836.6 | EGPRS (2)                        | Rear             | /             | 27.49                       | 28                          | 0.375                          | <b>0.42</b>                    | 0.518                         | <b>0.58</b>                   | 0.05                   |

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

**Table 14.1-4: 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                                                           | MHz    |       |               |            |                       |                          |                          |                          |                         |                         |                  |
| 810                                                           | 1909.8 | Left  | Cheek         | /          | 29.77                 | 31.5                     | 0.107                    | <b>0.16</b>              | 0.198                   | <b>0.29</b>             | -0.06            |
| 661                                                           | 1880   | Left  | Cheek         | Fig.4      | 30.14                 | 31.5                     | 0.135                    | <b>0.18</b>              | 0.242                   | <b>0.33</b>             | 0.02             |
| 512                                                           | 1850.2 | Left  | Cheek         | /          | 30.04                 | 31.5                     | 0.112                    | <b>0.16</b>              | 0.214                   | <b>0.30</b>             | -0.11            |
| 661                                                           | 1880   | Left  | Tilt          | /          | 30.14                 | 31.5                     | 0.061                    | <b>0.08</b>              | 0.094                   | <b>0.13</b>             | -0.07            |
| 661                                                           | 1880   | Right | Cheek         | /          | 30.14                 | 31.5                     | 0.103                    | <b>0.14</b>              | 0.15                    | <b>0.21</b>             | 0.08             |
| 661                                                           | 1880   | Right | Tilt          | /          | 30.14                 | 31.5                     | 0.051                    | <b>0.07</b>              | 0.075                   | <b>0.10</b>             | 0.12             |

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

| Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C |        |                                  |                  |               |                              |                             |                                |                                |                               |                               |                        |
|---------------------------------------------------------|--------|----------------------------------|------------------|---------------|------------------------------|-----------------------------|--------------------------------|--------------------------------|-------------------------------|-------------------------------|------------------------|
| Frequency                                               |        | Mode<br>(number of<br>timeslots) | Test<br>Position | Figure<br>No. | Conducte<br>d Power<br>(dBm) | Max. tune-up<br>Power (dBm) | Measured<br>SAR(10g)<br>(W/kg) | Reported<br>SAR(10g)(<br>W/kg) | Measured<br>SAR(1g)<br>(W/kg) | Reported<br>SAR(1g)<br>(W/kg) | Power<br>Drift<br>(dB) |
| Ch.                                                     | MHz    |                                  |                  |               |                              |                             |                                |                                |                               |                               |                        |
| 661                                                     | 1880   | GPRS (2)                         | Front            | /             | 27.19                        | 28.3                        | 0.097                          | <b>0.13</b>                    | 0.157                         | <b>0.20</b>                   | -0.08                  |
| 810                                                     | 1909.8 | GPRS (2)                         | Rear             | /             | 27.15                        | 28.3                        | 0.157                          | <b>0.20</b>                    | 0.251                         | <b>0.33</b>                   | 0.10                   |
| 661                                                     | 1880   | GPRS (2)                         | Rear             | /             | 27.19                        | 28.3                        | 0.206                          | <b>0.27</b>                    | 0.338                         | <b>0.44</b>                   | 0.17                   |
| 512                                                     | 1850.2 | GPRS (2)                         | Rear             | Fig.5         | 27.36                        | 28.3                        | 0.227                          | <b>0.28</b>                    | 0.372                         | <b>0.46</b>                   | -0.01                  |
| 661                                                     | 1880   | GPRS (2)                         | Rear             | Unfold        | 27.19                        | 28.3                        | 0.186                          | <b>0.24</b>                    | 0.322                         | <b>0.42</b>                   | -0.08                  |
| 512                                                     | 1850.2 | EGPRS (2)                        | Rear             | /             | 27.39                        | 28.3                        | 0.21                           | <b>0.26</b>                    | 0.362                         | <b>0.45</b>                   | 0.06                   |

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

**Table 14.1-6: SAR Values (GSM 1900 MHz Band – Hotspot)**

| Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C |        |                                  |                  |               |                              |                             |                                |                                |                               |                               |                        |
|---------------------------------------------------------|--------|----------------------------------|------------------|---------------|------------------------------|-----------------------------|--------------------------------|--------------------------------|-------------------------------|-------------------------------|------------------------|
| Frequency                                               |        | Mode<br>(number of<br>timeslots) | Test<br>Position | Figure<br>No. | Conducte<br>d Power<br>(dBm) | Max. tune-up<br>Power (dBm) | Measured<br>SAR(10g)<br>(W/kg) | Reported<br>SAR(10g)(<br>W/kg) | Measured<br>SAR(1g)<br>(W/kg) | Reported<br>SAR(1g)<br>(W/kg) | Power<br>Drift<br>(dB) |
| Ch.                                                     | MHz    |                                  |                  |               |                              |                             |                                |                                |                               |                               |                        |
| 661                                                     | 1880   | GPRS (3)                         | Front            | /             | 24.22                        | 25                          | 0.202                          | <b>0.24</b>                    | 0.322                         | <b>0.39</b>                   | -0.08                  |
| 810                                                     | 1909.8 | GPRS (3)                         | Rear             | /             | 23.88                        | 25                          | 0.307                          | <b>0.40</b>                    | 0.511                         | <b>0.66</b>                   | -0.12                  |
| 661                                                     | 1880   | GPRS (3)                         | Rear             | /             | 24.22                        | 25                          | 0.343                          | <b>0.41</b>                    | 0.553                         | <b>0.66</b>                   | 0.08                   |
| 512                                                     | 1850.2 | GPRS (3)                         | Rear             | /             | 24.46                        | 25                          | 0.355                          | <b>0.40</b>                    | 0.599                         | <b>0.68</b>                   | -0.11                  |
| 810                                                     | 1909.8 | GPRS (3)                         | Rear             | Unfold        | 23.88                        | 25                          | 0.311                          | <b>0.40</b>                    | 0.554                         | <b>0.72</b>                   | 0.09                   |
| 661                                                     | 1880   | GPRS (3)                         | Rear             | Unfold        | 24.22                        | 25                          | 0.358                          | <b>0.43</b>                    | 0.622                         | <b>0.74</b>                   | -0.20                  |
| 512                                                     | 1850.2 | GPRS (3)                         | Rear             | Unfold        | 24.41                        | 25                          | 0.345                          | <b>0.40</b>                    | 0.609                         | <b>0.70</b>                   | 0.16                   |
| 661                                                     | 1880   | GPRS (3)                         | Left             | /             | 24.22                        | 25                          | 0.191                          | <b>0.23</b>                    | 0.326                         | <b>0.39</b>                   | 0.11                   |
| 661                                                     | 1880   | GPRS (3)                         | Right            | /             | 24.22                        | 25                          | 0.091                          | <b>0.11</b>                    | 0.148                         | <b>0.18</b>                   | -0.04                  |
| 810                                                     | 1909.8 | GPRS (3)                         | Bottom           | /             | 23.69                        | 25                          | 0.331                          | <b>0.45</b>                    | 0.594                         | <b>0.80</b>                   | -0.07                  |
| 661                                                     | 1880   | GPRS (3)                         | Bottom           | /             | 24.22                        | 25                          | 0.409                          | <b>0.49</b>                    | 0.76                          | <b>0.91</b>                   | -0.17                  |
| 512                                                     | 1850.2 | GPRS (3)                         | Bottom           | Fig.6         | 24.41                        | 25                          | 0.519                          | <b>0.59</b>                    | 0.954                         | <b>1.09</b>                   | 0.02                   |
| 512                                                     | 1850.2 | EGPRS (3)                        | Bottom           | /             | 24.38                        | 25                          | 0.518                          | <b>0.60</b>                    | 0.939                         | <b>1.08</b>                   | -0.01                  |

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

**Table 14.1-7: 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |       |               |            |                       |                            |                          |                          |                         |                         |                  |
| 9538                         | 1907.6 | Left  | Cheek         | Fig.7      | 24.04                 | 25                         | 0.299                    | <b>0.37</b>              | 0.497                   | <b>0.62</b>             | 0.01             |
| 9400                         | 1880   | Left  | Cheek         | /          | 24.32                 | 25                         | 0.246                    | <b>0.29</b>              | 0.422                   | <b>0.49</b>             | 0.02             |
| 9262                         | 1852.4 | Left  | Cheek         | /          | 24.2                  | 25                         | 0.258                    | <b>0.31</b>              | 0.418                   | <b>0.50</b>             | 0.08             |
| 9400                         | 1880   | Left  | Tilt          | /          | 24.32                 | 25                         | 0.12                     | <b>0.14</b>              | 0.164                   | <b>0.19</b>             | 0.02             |
| 9400                         | 1880   | Right | Cheek         | /          | 24.32                 | 25                         | 0.27                     | <b>0.32</b>              | 0.401                   | <b>0.47</b>             | -0.18            |
| 9400                         | 1880   | Right | Tilt          | /          | 24.32                 | 25                         | 0.106                    | <b>0.12</b>              | 0.143                   | <b>0.17</b>             | -0.03            |

**Table 14.1-8: SAR Values (WCDMA 1900 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(10g) (W/kg)   | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |               |            |                       |                          |                            |                          |                         |                         |                  |
| 9400                         | 1880   | Front         | /          | 24.32                 | 25                       | 0.177                      | <b>0.21</b>              | 0.283                   | <b>0.33</b>             | -0.08            |
| 9538                         | 1907.6 | Rear          | /          | 24.04                 | 25                       | 0.39                       | <b>0.49</b>              | 0.64                    | <b>0.80</b>             | -0.07            |
| 9400                         | 1880   | Rear          | /          | 24.32                 | 25                       | 0.446                      | <b>0.52</b>              | 0.769                   | <b>0.90</b>             | 0.13             |
| 9262                         | 1852.4 | Rear          | Fig.8      | 24.2                  | 25                       | 0.505                      | <b>0.61</b>              | 0.823                   | <b>0.99</b>             | -0.04            |
| 9400                         | 1880   | Rear          | Unfold     | 24.32                 | 25                       | 0.406                      | <b>0.47</b>              | 0.667                   | <b>0.78</b>             | -0.17            |

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

**Table 14.1-9: SAR Values (WCDMA 1900 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(10g) (W/kg)   | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |               |            |                       |                          |                            |                          |                         |                         |                  |
| 9400                         | 1880   | Front         | /          | 19.88                 | 21                       | 0.192                      | <b>0.25</b>              | 0.316                   | <b>0.41</b>             | 0.09             |
| 9538                         | 1907.6 | Rear          | /          | 19.81                 | 21                       | 0.28                       | <b>0.37</b>              | 0.514                   | <b>0.68</b>             | 0.06             |
| 9400                         | 1880   | Rear          | /          | 19.88                 | 21                       | 0.331                      | <b>0.43</b>              | 0.605                   | <b>0.78</b>             | -0.17            |
| 9262                         | 1852.4 | Rear          | /          | 19.77                 | 21                       | 0.337                      | <b>0.45</b>              | 0.618                   | <b>0.82</b>             | -0.11            |
| 9400                         | 1880   | Rear          | Unfold     | 19.88                 | 21                       | 0.358                      | <b>0.46</b>              | 0.608                   | <b>0.79</b>             | 0.15             |
| 9400                         | 1880   | Left          | /          | 19.88                 | 21                       | 0.16                       | <b>0.21</b>              | 0.276                   | <b>0.36</b>             | -0.02            |
| 9400                         | 1880   | Right         | /          | 19.88                 | 21                       | <0.01                      | <0.01                    | <0.01                   | <0.01                   | /                |
| 9538                         | 1907.6 | Bottom        | /          | 19.81                 | 21                       | 0.43                       | <b>0.57</b>              | 0.791                   | <b>1.04</b>             | -0.13            |
| 9400                         | 1880   | Bottom        | /          | 19.88                 | 21                       | 0.508                      | <b>0.66</b>              | 0.931                   | <b>1.20</b>             | 0.16             |
| 9262                         | 1852.4 | Bottom        | Fig.9      | 19.77                 | 21                       | 0.519                      | <b>0.69</b>              | 0.95                    | <b>1.26</b>             | 0.05             |
| 9262                         | 1852.4 | Bottom        | H          | 19.77                 | 21                       | 0.489                      | <b>0.65</b>              | 0.928                   | <b>1.23</b>             | 0.16             |

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

**Table 14.1-10: 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |       |               |            |                       |                            |                          |                          |                         |                         |                  |
| 1412                         | 1732.4 | Left  | Cheek         | /          | 22.98                 | 24                         | 0.153                    | <b>0.19</b>              | 0.341                   | <b>0.43</b>             | -0.09            |
| 1412                         | 1732.4 | Left  | Tilt          | /          | 22.98                 | 24                         | 0.044                    | <b>0.06</b>              | 0.079                   | <b>0.10</b>             | -0.05            |
| 1513                         | 1752.6 | Right | Cheek         | /          | 23.03                 | 24                         | 0.28                     | <b>0.35</b>              | 0.471                   | <b>0.59</b>             | 0.18             |
| 1412                         | 1732.4 | Right | Cheek         | /          | 22.98                 | 24                         | 0.259                    | <b>0.33</b>              | 0.401                   | <b>0.51</b>             | -0.08            |
| 1312                         | 1712.4 | Right | Cheek         | Fig.10     | 22.91                 | 24                         | 0.301                    | <b>0.39</b>              | 0.503                   | <b>0.65</b>             | -0.09            |
| 1412                         | 1732.4 | Right | Tilt          | /          | 22.98                 | 24                         | 0.068                    | <b>0.09</b>              | 0.119                   | <b>0.15</b>             | -0.01            |

**Table 14.1-11: 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(10g) (W/kg)   | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |               |            |                       |                          |                            |                          |                         |                         |                  |
| 1412                         | 1732.4 | Front         | /          | 22.98                 | 24                       | 0.227                      | <b>0.29</b>              | 0.361                   | <b>0.46</b>             | 0.08             |
| 1513                         | 1752.6 | Rear          | Fig.11     | 23.03                 | 24                       | 0.573                      | <b>0.72</b>              | 0.925                   | <b>1.16</b>             | 0.10             |
| 1412                         | 1732.4 | Rear          | /          | 22.98                 | 24                       | 0.494                      | <b>0.62</b>              | 0.795                   | <b>1.01</b>             | 0.05             |
| 1312                         | 1712.4 | Rear          | /          | 22.91                 | 24                       | 0.451                      | <b>0.58</b>              | 0.663                   | <b>0.85</b>             | 0.09             |
| 1412                         | 1732.4 | Rear          | Unfold     | 22.98                 | 24                       | 0.374                      | <b>0.47</b>              | 0.606                   | <b>0.77</b>             | -0.04            |

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

**Table 14.1-12: 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(10g) (W/kg)   | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |               |            |                       |                          |                            |                          |                         |                         |                  |
| 1412                         | 1732.4 | Front         | /          | 20.12                 | 20.5                     | 0.145                      | <b>0.16</b>              | 0.237                   | <b>0.26</b>             | 0.12             |
| 1412                         | 1732.4 | Rear          | /          | 20.12                 | 20.5                     | 0.409                      | <b>0.45</b>              | 0.676                   | <b>0.74</b>             | -0.06            |
| 1412                         | 1732.4 | Rear          | /          | 20.12                 | 20.5                     | 0.275                      | <b>0.30</b>              | 0.453                   | <b>0.49</b>             | 0.07             |
| 1412                         | 1732.4 | Left          | /          | 20.12                 | 20.5                     | 0.1                        | <b>0.11</b>              | 0.189                   | <b>0.21</b>             | -0.11            |
| 1412                         | 1732.4 | Right         | /          | 20.12                 | 20.5                     | 0.057                      | <b>0.06</b>              | 0.092                   | <b>0.10</b>             | 0.06             |
| 1513                         | 1752.6 | Bottom        | Fig.12     | 20.25                 | 20.5                     | 0.484                      | <b>0.51</b>              | 0.886                   | <b>0.94</b>             | 0.01             |
| 1412                         | 1732.4 | Bottom        | /          | 20.12                 | 20.5                     | 0.462                      | <b>0.50</b>              | 0.854                   | <b>0.93</b>             | -0.06            |
| 1312                         | 1712.4 | Bottom        | /          | 20.06                 | 20.5                     | 0.458                      | <b>0.51</b>              | 0.834                   | <b>0.92</b>             | 0.14             |

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

**Table 14.1-13: 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz   |       |               |            |                            |                          |                          |                          |                         |                         |                  |
| 4183                         | 836.6 | Left  | Cheek         | /          | 22.72                      | 24                       | 0.156                    | <b>0.21</b>              | 0.207                   | <b>0.28</b>             | 0.12             |
| 4183                         | 836.6 | Left  | Tilt          | /          | 22.72                      | 24                       | 0.096                    | <b>0.13</b>              | 0.121                   | <b>0.16</b>             | -0.11            |
| 4233                         | 846.6 | Right | Cheek         | /          | 22.74                      | 24                       | 0.099                    | <b>0.13</b>              | 0.153                   | <b>0.20</b>             | 0.06             |
| 4183                         | 836.6 | Right | Cheek         | Fig.13     | 22.72                      | 24                       | 0.155                    | <b>0.21</b>              | 0.21                    | <b>0.28</b>             | -0.07            |
| 4132                         | 826.4 | Right | Cheek         | /          | 22.47                      | 24                       | 0.145                    | <b>0.21</b>              | 0.196                   | <b>0.28</b>             | 0.03             |
| 4132                         | 826.4 | Right | Tilt          | /          | 22.72                      | 24                       | 0.102                    | <b>0.14</b>              | 0.129                   | <b>0.17</b>             | 0.15             |

**Table 14.1-14: SAR Values (WCDMA 850 MHz Band - Body)**

| Ambient Temperature: 22.9 °C |       |                  |               |                             |                             | Liquid Temperature: 22.5°C     |                                |                               |                               |                        |
|------------------------------|-------|------------------|---------------|-----------------------------|-----------------------------|--------------------------------|--------------------------------|-------------------------------|-------------------------------|------------------------|
| Frequency                    |       | Test<br>Position | Figure<br>No. | Conducted<br>Power<br>(dBm) | Max. tune-up<br>Power (dBm) | Measured<br>SAR(10g)<br>(W/kg) | Reported<br>SAR(10g)<br>(W/kg) | Measured<br>SAR(1g)<br>(W/kg) | Reported<br>SAR(1g)<br>(W/kg) | Power<br>Drift<br>(dB) |
| Ch.                          | MHz   |                  |               |                             |                             |                                |                                |                               |                               |                        |
| 4183                         | 836.6 | Front            | /             | 22.72                       | 24                          | 0.04                           | <b>0.05</b>                    | 0.089                         | <b>0.12</b>                   | -0.06                  |
| 4233                         | 846.6 | Rear             | /             | 22.74                       | 24                          | 0.097                          | <b>0.13</b>                    | 0.222                         | <b>0.30</b>                   | 0.09                   |
| 4183                         | 836.6 | Rear             | Fig.14        | 22.72                       | 24                          | 0.185                          | <b>0.25</b>                    | 0.418                         | <b>0.56</b>                   | -0.01                  |
| 4132                         | 826.4 | Rear             | /             | 22.47                       | 24                          | 0.164                          | <b>0.23</b>                    | 0.373                         | <b>0.53</b>                   | -0.14                  |
| 4183                         | 836.6 | Rear             | unfold        | 22.72                       | 24                          | 0.11                           | <b>0.15</b>                    | 0.258                         | <b>0.35</b>                   | 0.04                   |
| 4183                         | 836.6 | Left             | /             | 22.72                       | 24                          | 0.042                          | <b>0.06</b>                    | 0.101                         | <b>0.14</b>                   | -0.03                  |
| 4183                         | 836.6 | Right            | /             | 22.72                       | 24                          | 0.04                           | <b>0.05</b>                    | 0.095                         | <b>0.13</b>                   | 0.05                   |
| 4183                         | 836.6 | Bottom           | /             | 22.72                       | 24                          | 0.029                          | <b>0.04</b>                    | 0.08                          | <b>0.11</b>                   | 0.12                   |

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

**Table 14.1-15: SAR Values (LTE Band2 - 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |          |       |               |            |                            |                          |                          |                          |                         |                         |                  |
| 18900                        | 1880 | 1RB_Mid  | Left  | Cheek         | Fig.15     | 24.66                      | 25.5                     | 0.209                    | <b>0.25</b>              | 0.366                   | <b>0.44</b>             | 0.03             |
| 18900                        | 1880 | 1RB_Mid  | Left  | Tilt          | /          | 24.66                      | 25.5                     | 0.202                    | <b>0.25</b>              | 0.248                   | <b>0.30</b>             | 0.16             |
| 18900                        | 1880 | 1RB_Mid  | Right | Cheek         | /          | 24.66                      | 25.5                     | 0.234                    | <b>0.28</b>              | 0.3                     | <b>0.36</b>             | 0.08             |
| 18900                        | 1880 | 1RB_Mid  | Right | Tilt          | /          | 24.66                      | 25.5                     | 0.107                    | <b>0.13</b>              | 0.129                   | <b>0.16</b>             | -0.06            |
| 18900                        | 1880 | 50RB-Mid | Left  | Cheek         | /          | 23.43                      | 24.5                     | 0.215                    | <b>0.28</b>              | 0.332                   | <b>0.42</b>             | -0.18            |
| 18900                        | 1880 | 50RB-Mid | Left  | Tilt          | /          | 23.43                      | 24.5                     | 0.133                    | <b>0.17</b>              | 0.165                   | <b>0.21</b>             | 0.17             |
| 18900                        | 1880 | 50RB-Mid | Right | Cheek         | /          | 23.43                      | 24.5                     | 0.133                    | <b>0.17</b>              | 0.335                   | <b>0.43</b>             | 0.02             |
| 18900                        | 1880 | 50RB-Mid | Right | Tilt          | /          | 23.43                      | 24.5                     | 0.182                    | <b>0.23</b>              | 0.223                   | <b>0.29</b>             | -0.07            |

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-16: SAR Values (LTE Band2 – 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |                |            |                        |                            |                          |                          |                         |                         |                  |
| 18900                        | 1880 | 1RB-Mid Front  | /          | 24.66                  | 25.5                       | 0.234                    | <b>0.28</b>              | 0.367                   | <b>0.45</b>             | 0.02             |
| 19100                        | 1900 | 1RB-Mid Rear   | /          | 24.32                  | 25.5                       | 0.463                    | <b>0.61</b>              | 0.781                   | <b>1.02</b>             | -0.06            |
| 18900                        | 1880 | 1RB-Mid Rear   | Fig.16     | 24.66                  | 25.5                       | 0.573                    | <b>0.70</b>              | 0.943                   | <b>1.14</b>             | -0.08            |
| 18700                        | 1860 | 1RB-Mid Rear   | /          | 24.41                  | 25.5                       | 0.511                    | <b>0.66</b>              | 0.858                   | <b>1.10</b>             | -0.13            |
| 18900                        | 1880 | 100RB Rear     | /          | 23.3                   | 24.5                       | 0.481                    | <b>0.63</b>              | 0.801                   | <b>1.06</b>             | -0.08            |
| 19100                        | 1900 | 1RB-Mid Rear   | Unfold     | 24.32                  | 25.5                       | 0.395                    | <b>0.52</b>              | 0.665                   | <b>0.87</b>             | -0.07            |
| 18900                        | 1880 | 1RB-Mid Rear   | Unfold     | 24.66                  | 25.5                       | 0.489                    | <b>0.59</b>              | 0.803                   | <b>0.97</b>             | 0.12             |
| 18700                        | 1860 | 1RB-Mid Rear   | Unfold     | 24.41                  | 25.5                       | 0.436                    | <b>0.56</b>              | 0.731                   | <b>0.94</b>             | -0.01            |
| 18900                        | 1880 | 100RB Rear     | Unfold     | 23.3                   | 24.5                       | 0.41                     | <b>0.54</b>              | 0.682                   | <b>0.90</b>             | 0.05             |
| 18900                        | 1880 | 50RB-Mid Front | /          | 23.69                  | 24.5                       | 0.195                    | <b>0.23</b>              | 0.309                   | <b>0.37</b>             | 0.04             |
| 18900                        | 1880 | 50RB-Mid Rear  | /          | 23.69                  | 24.5                       | 0.407                    | <b>0.49</b>              | 0.655                   | <b>0.79</b>             | -0.08            |
| 18900                        | 1880 | 50RB-Mid Rear  | Unfold     | 23.69                  | 24.5                       | 0.382                    | <b>0.46</b>              | 0.628                   | <b>0.76</b>             | -0.01            |

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

Note2: The LTE mode is QPSK\_20MHz.



**Table 14.1-17: SAR Values (LTE Band2 – 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(10g) (W/kg)    | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |                 |            |                        |                          |                             |                          |                         |                         |                  |
| 18900                        | 1880 | 1RB-Mid Front   | /          | 21.28                  | 21.5                     | 0.139                       | <b>0.15</b>              | 0.227                   | <b>0.24</b>             | -0.09            |
| 18900                        | 1880 | 1RB-Mid Rear    | /          | 21.28                  | 21.5                     | 0.341                       | <b>0.36</b>              | 0.568                   | <b>0.60</b>             | -0.15            |
| 18900                        | 1880 | 1RB-Mid Rear    | unfold     | 21.28                  | 21.5                     | 0.34                        | <b>0.36</b>              | 0.589                   | <b>0.62</b>             | -0.15            |
| 18900                        | 1880 | 1RB-Mid Left    | /          | 21.28                  | 21.5                     | 0.126                       | <b>0.13</b>              | 0.222                   | <b>0.23</b>             | -0.08            |
| 18900                        | 1880 | 1RB-Mid Right   | /          | 21.28                  | 21.5                     | 0.123                       | <b>0.13</b>              | 0.224                   | <b>0.24</b>             | -0.02            |
| 19100                        | 1900 | 1RB-Mid Bottom  | /          | 21.25                  | 21.5                     | 0.397                       | <b>0.42</b>              | 0.761                   | <b>0.81</b>             | 0.16             |
| 18900                        | 1880 | 1RB-Mid Bottom  | Fig.17     | 21.28                  | 21.5                     | 0.424                       | <b>0.45</b>              | 0.807                   | <b>0.85</b>             | 0.08             |
| 18700                        | 1860 | 1RB-Mid Bottom  | /          | 21.26                  | 21.5                     | 0.414                       | <b>0.44</b>              | 0.781                   | <b>0.83</b>             | 0.18             |
| 18900                        | 1880 | 100RB Bottom    | /          | 21.22                  | 21.5                     | 0.403                       | <b>0.43</b>              | 0.775                   | <b>0.83</b>             | -0.15            |
| 18900                        | 1880 | 50RB-Mid Front  | /          | 21.25                  | 21.5                     | 0.135                       | <b>0.14</b>              | 0.219                   | <b>0.23</b>             | -0.16            |
| 18900                        | 1880 | 50RB-Mid Rear   | /          | 21.25                  | 21.5                     | 0.325                       | <b>0.34</b>              | 0.539                   | <b>0.57</b>             | -0.07            |
| 18900                        | 1880 | 50RB-Mid Rear   | unfold     | 21.25                  | 21.5                     | 0.335                       | <b>0.35</b>              | 0.581                   | <b>0.62</b>             | -0.06            |
| 18900                        | 1880 | 50RB-Mid Left   | /          | 21.25                  | 21.5                     | 0.112                       | <b>0.12</b>              | 0.197                   | <b>0.21</b>             | 0.11             |
| 18900                        | 1880 | 50RB-Mid Right  | /          | 21.25                  | 21.5                     | 0.114                       | <b>0.12</b>              | 0.206                   | <b>0.22</b>             | 0.03             |
| 18900                        | 1880 | 50RB-Mid Bottom | /          | 21.25                  | 21.5                     | 0.383                       | <b>0.41</b>              | 0.729                   | <b>0.77</b>             | -0.10            |

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

Note2: The LTE mode is QPSK\_10MHz.

**Table 14.1-18: SAR Values (LTE Band5 - 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz |          |       |               |            |                       |                            |                          |                          |                         |                         |                  |
| 20600                        | 844 | 1RB_Low  | Left  | Cheek         | Fig.18     | 25.11                 | 25.5                       | 0.36                     | <b>0.39</b>              | 0.476                   | <b>0.52</b>             | 0.15             |
| 20600                        | 844 | 1RB_Low  | Left  | Tilt          | /          | 25.11                 | 25.5                       | 0.203                    | <b>0.22</b>              | 0.235                   | <b>0.26</b>             | -0.13            |
| 20600                        | 844 | 1RB_Low  | Right | Cheek         | /          | 25.11                 | 25.5                       | 0.29                     | <b>0.32</b>              | 0.428                   | <b>0.47</b>             | 0.18             |
| 20600                        | 844 | 1RB_Low  | Right | Tilt          | /          | 25.11                 | 25.5                       | 0.207                    | <b>0.23</b>              | 0.242                   | <b>0.26</b>             | 0.02             |
| 20600                        | 844 | 25RB-Mid | Left  | Cheek         | /          | 23.86                 | 24.5                       | 0.282                    | <b>0.33</b>              | 0.37                    | <b>0.43</b>             | 0.07             |
| 20600                        | 844 | 25RB-Mid | Left  | Tilt          | /          | 23.86                 | 24.5                       | 0.161                    | <b>0.19</b>              | 0.188                   | <b>0.22</b>             | -0.07            |
| 20600                        | 844 | 25RB-Mid | Right | Cheek         | /          | 23.86                 | 24.5                       | 0.242                    | <b>0.28</b>              | 0.347                   | <b>0.40</b>             | 0.01             |
| 20600                        | 844 | 25RB-Mid | Right | Tilt          | /          | 23.86                 | 24.5                       | 0.165                    | <b>0.19</b>              | 0.196                   | <b>0.23</b>             | -0.16            |

Note1: The LTE mode is QPSK\_10MHz.

**Table 14.1-19: SAR Values (LTE Band5 – 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(10g) (W/kg)   | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz |                 |            |                        |                          |                            |                          |                         |                         |                  |
| 20600                        | 844 | 1RB-Low Front   | /          | 25.11                  | 25.5                     | 0.134                      | <b>0.15</b>              | 0.205                   | <b>0.22</b>             | -0.14            |
| 20600                        | 844 | 1RB-Low Rear    | Fig.19     | 25.11                  | 25.5                     | 0.436                      | <b>0.48</b>              | 0.612                   | <b>0.67</b>             | 0.02             |
| 20600                        | 844 | 1RB-Low Rear    | unfold     | 25.11                  | 25.5                     | 0.321                      | <b>0.35</b>              | 0.479                   | <b>0.52</b>             | -0.11            |
| 20600                        | 844 | 1RB-Low Left    | /          | 25.11                  | 25.5                     | 0.155                      | <b>0.17</b>              | 0.234                   | <b>0.26</b>             | 0.05             |
| 20600                        | 844 | 1RB-Low Right   | /          | 25.11                  | 25.5                     | 0.084                      | <b>0.09</b>              | 0.121                   | <b>0.13</b>             | -0.18            |
| 20600                        | 844 | 1RB-Low Bottom  | /          | 25.11                  | 25.5                     | 0.134                      | <b>0.15</b>              | 0.221                   | <b>0.24</b>             | -0.12            |
| 20600                        | 844 | 25RB-Mid Front  | /          | 23.86                  | 24.5                     | 0.109                      | <b>0.13</b>              | 0.167                   | <b>0.19</b>             | -0.17            |
| 20600                        | 844 | 25RB-Mid Rear   | /          | 23.86                  | 24.5                     | 0.368                      | <b>0.43</b>              | 0.516                   | <b>0.60</b>             | 0.12             |
| 20600                        | 844 | 25RB-Mid Rear   | unfold     | 23.86                  | 24.5                     | 0.251                      | <b>0.29</b>              | 0.375                   | <b>0.43</b>             | 0.16             |
| 20600                        | 844 | 25RB-Mid Left   | /          | 23.86                  | 24.5                     | 0.096                      | <b>0.11</b>              | 0.142                   | <b>0.16</b>             | -0.12            |
| 20600                        | 844 | 25RB-Mid Right  | /          | 23.86                  | 24.5                     | 0.048                      | <b>0.06</b>              | 0.07                    | <b>0.08</b>             | 0.17             |
| 20600                        | 844 | 25RB-Mid Bottom | /          | 23.86                  | 24.5                     | 0.115                      | <b>0.13</b>              | 0.198                   | <b>0.23</b>             | 0.18             |

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

Note2: The LTE mode is QPSK\_10MHz.

**Table 14.1-20: SAR Values (LTE Band7 - Head)**

| Ambient Temperature: 22.9 °C |      |          |       |               |            | Liquid Temperature: 22.5°C |                          |                            |                          |                          |                          |                  |
|------------------------------|------|----------|-------|---------------|------------|----------------------------|--------------------------|----------------------------|--------------------------|--------------------------|--------------------------|------------------|
| Frequency                    |      | Mode     | Side  | Test Position | Figure No. | Condu cted Power (dBm)     | Max. tune-up Power (dBm) | Measure d SAR(10g ) (W/kg) | Reported SAR(10g) (W/kg) | Measure d SAR(1g) (W/kg) | Reporte d SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |          |       |               |            |                            |                          |                            |                          |                          |                          |                  |
| 20850                        | 2510 | 1RB_Mid  | Left  | Cheek         | /          | 23.89                      | 24.5                     | 0.202                      | <b>0.23</b>              | 0.143                    | <b>0.16</b>              | -0.01            |
| 21100                        | 2535 | 1RB_Mid  | Left  | Cheek         | /          | 23.89                      | 24.5                     | 0.249                      | <b>0.29</b>              | 0.499                    | <b>0.57</b>              | 0.12             |
| 21350                        | 2560 | 1RB_Mid  | Left  | Cheek         | /          | 23.89                      | 24.5                     | 0.28                       | <b>0.32</b>              | 0.636                    | <b>0.73</b>              | 0.06             |
| 21350                        | 2560 | 100RB    | Left  | Cheek         | /          | 23.85                      | 23.5                     | 0.205                      | <b>0.19</b>              | 0.729                    | <b>0.67</b>              | -0.03            |
| 21350                        | 2560 | 1RB_Mid  | Left  | Tilt          | /          | 23.89                      | 24.5                     | 0.085                      | <b>0.10</b>              | 0.181                    | <b>0.21</b>              | 0.07             |
| 20850                        | 2510 | 1RB_Mid  | Right | Cheek         | /          | 23.65                      | 24.5                     | 0.276                      | <b>0.34</b>              | 0.633                    | <b>0.77</b>              | -0.10            |
| 21100                        | 2535 | 1RB_Mid  | Right | Cheek         | /          | 23.55                      | 24.5                     | 0.34                       | <b>0.42</b>              | 0.807                    | <b>1.00</b>              | -0.02            |
| 21350                        | 2560 | 1RB_Mid  | Right | Cheek         | Fig.20     | 23.89                      | 24.5                     | 0.383                      | <b>0.44</b>              | 0.925                    | <b>1.06</b>              | -0.05            |
| 21350                        | 2560 | 100RB    | Right | Cheek         | /          | 22.5                       | 23.5                     | 0.28                       | <b>0.35</b>              | 0.678                    | <b>0.85</b>              | -0.11            |
| 21350                        | 2560 | 1RB_Mid  | Right | Tilt          | /          | 23.74                      | 24.5                     | 0.072                      | <b>0.09</b>              | 0.138                    | <b>0.16</b>              | -0.06            |
| 21350                        | 2560 | 50RB-Mid | Left  | Cheek         | /          | 22.65                      | 23.5                     | 0.217                      | <b>0.26</b>              | 0.552                    | <b>0.67</b>              | -0.01            |
| 21350                        | 2560 | 50RB-Mid | Left  | Tilt          | /          | 22.65                      | 23.5                     | 0.055                      | <b>0.07</b>              | 0.148                    | <b>0.18</b>              | -0.04            |
| 21350                        | 2560 | 50RB-Mid | Right | Cheek         | /          | 22.65                      | 23.5                     | 0.244                      | <b>0.30</b>              | 0.574                    | <b>0.70</b>              | -0.09            |
| 21350                        | 2560 | 50RB-Mid | Right | Tilt          | /          | 22.65                      | 23.5                     | 0.055                      | <b>0.07</b>              | 0.103                    | <b>0.13</b>              | -0.06            |

Note1: The LTE mode is QPSK\_20MHz.

©Copyright. All rights reserved by CTTL.

Page 88 of 225

**Table 14.1-21: SAR Values (LTE Band7 – Body worn)**

| 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| 21350     | 2560 | 1RB-Mid Front                | /          | 23.89                      | 24.5                      | 0.149                    | <b>0.17</b>              | 0.256                   | <b>0.29</b>             | -0.14            |
| 21350     | 2560 | 1RB-Mid Rear                 | Fig.21     | 23.89                      | 24.5                      | 0.562                    | <b>0.65</b>              | 1.02                    | <b>1.17</b>             | -0.12            |
| 21100     | 2535 | 1RB-Mid Rear                 | /          | 23.55                      | 24.5                      | 0.515                    | <b>0.64</b>              | 0.93                    | <b>1.16</b>             | 0.16             |
| 20850     | 2510 | 1RB-Mid Rear                 | /          | 23.74                      | 24.5                      | 0.426                    | <b>0.51</b>              | 0.763                   | <b>0.91</b>             | -0.01            |
| 21350     | 2560 | 100RB Rear                   | /          | 22.5                       | 23.5                      | 0.454                    | <b>0.57</b>              | 0.824                   | <b>1.04</b>             | 0.02             |
| 21350     | 2560 | 1RB-Mid Rear                 | unfold     | 23.89                      | 24.5                      | 0.494                    | <b>0.57</b>              | 0.837                   | <b>0.96</b>             | -0.14            |
| 21100     | 2535 | 1RB-Mid Rear                 | unfold     | 23.55                      | 24.5                      | 0.487                    | <b>0.61</b>              | 0.835                   | <b>1.04</b>             | 0.01             |
| 20850     | 2510 | 1RB-Mid Rear                 | unfold     | 23.74                      | 24.5                      | 0.437                    | <b>0.52</b>              | 0.75                    | <b>0.89</b>             | -0.13            |
| 21350     | 2560 | 100RB Rear                   | unfold     | 22.5                       | 23.5                      | 0.374                    | <b>0.47</b>              | 0.634                   | <b>0.80</b>             | 0.02             |
| 21350     | 2560 | 50RB-Mid Front               | /          | 22.65                      | 23.5                      | 0.109                    | <b>0.13</b>              | 0.188                   | <b>0.23</b>             | -0.09            |
| 21350     | 2560 | 50RB-Mid Rear                | /          | 22.65                      | 23.5                      | 0.47                     | <b>0.57</b>              | 0.855                   | <b>1.04</b>             | 0.11             |
| 21100     | 2535 | 50RB-Mid Rear                | /          | 22.45                      | 23.5                      | 0.461                    | <b>0.59</b>              | 0.835                   | <b>1.06</b>             | -0.08            |
| 20850     | 2510 | 50RB-Mid Rear                | /          | 22.58                      | 23.5                      | 0.449                    | <b>0.55</b>              | 0.628                   | <b>0.78</b>             | 0.13             |
| 21350     | 2560 | 50RB-Mid Rear                | unfold     | 22.65                      | 23.5                      | 0.377                    | <b>0.46</b>              | 0.64                    | <b>0.78</b>             | -0.04            |

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-22: SAR Values (LTE Band7 – 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |                 |            |                            |                           |                          |                          |                         |                         |                  |
| 21350                        | 2560 | 1RB-High Front  | /          | 20.57                      | 21                        | 0.106                    | <b>0.12</b>              | 0.187                   | <b>0.21</b>             | -0.04            |
| 21350                        | 2560 | 1RB-High Rear   | /          | 20.57                      | 21                        | 0.415                    | <b>0.46</b>              | 0.768                   | <b>0.85</b>             | -0.20            |
| 21100                        | 2535 | 1RB-High Rear   | /          | 20.46                      | 21                        | 0.362                    | <b>0.41</b>              | 0.666                   | <b>0.75</b>             | 0.03             |
| 20850                        | 2510 | 1RB-High Rear   | /          | 20.47                      | 21                        | 0.318                    | <b>0.36</b>              | 0.576                   | <b>0.65</b>             | 0.07             |
| 21350                        | 2560 | 100RB Rear      | /          | 20.5                       | 21                        | 0.389                    | <b>0.44</b>              | 0.735                   | <b>0.82</b>             | -0.11            |
| 21350                        | 2560 | 1RB-High Rear   | unfold     | 20.57                      | 21                        | 0.39                     | <b>0.43</b>              | 0.731                   | <b>0.81</b>             | 0.03             |
| 21100                        | 2535 | 1RB-High Rear   | unfold     | 20.46                      | 21                        | 0.353                    | <b>0.40</b>              | 0.627                   | <b>0.71</b>             | 0.04             |
| 20850                        | 2510 | 1RB-High Rear   | unfold     | 20.47                      | 21                        | 0.349                    | <b>0.39</b>              | 0.635                   | <b>0.72</b>             | 0.17             |
| 21350                        | 2560 | 100RB Rear      | unfold     | 20.5                       | 21                        | 0.375                    | <b>0.42</b>              | 0.715                   | <b>0.80</b>             | 0.07             |
| 21350                        | 2560 | 1RB-High Left   | /          | 20.57                      | 21                        | 0.237                    | <b>0.26</b>              | 0.464                   | <b>0.51</b>             | -0.02            |
| 21350                        | 2560 | 1RB-High Right  | /          | 20.57                      | 21                        | 0.069                    | <b>0.08</b>              | 0.137                   | <b>0.15</b>             | 0.02             |
| 20850                        | 2510 | 1RB-High Bottom | /          | 20.27                      | 21                        | 0.276                    | <b>0.33</b>              | 0.71                    | <b>0.84</b>             | 0.05             |
| 21100                        | 2535 | 1RB-High Bottom | /          | 20.26                      | 21                        | 0.288                    | <b>0.34</b>              | 0.745                   | <b>0.88</b>             | 0.16             |
| 21350                        | 2560 | 1RB-High Bottom | Fig.22     | 20.57                      | 21                        | 0.397                    | <b>0.44</b>              | 0.884                   | <b>0.98</b>             | 0.07             |
| 21350                        | 2560 | 100RB Bottom    | /          | 20.5                       | 21                        | 0.375                    | <b>0.42</b>              | 0.857                   | <b>0.96</b>             | 0.05             |
| 21350                        | 2560 | 1RB-High Top    | /          | 20.57                      | 21                        | 0.075                    | <b>0.08</b>              | 0.149                   | <b>0.16</b>             | 0.01             |
| 21350                        | 2560 | 50RB-Mid Front  | /          | 20.46                      | 21                        | 0.1                      | <b>0.11</b>              | 0.176                   | <b>0.20</b>             | 0.05             |
| 21350                        | 2560 | 50RB-Mid Rear   | /          | 20.46                      | 21                        | 0.406                    | <b>0.46</b>              | 0.751                   | <b>0.85</b>             | 0.15             |
| 21100                        | 2535 | 50RB-Mid Rear   | /          | 20.38                      | 21                        | 0.381                    | <b>0.44</b>              | 0.703                   | <b>0.81</b>             | -0.16            |
| 20850                        | 2510 | 50RB-Mid Rear   | /          | 20.35                      | 21                        | 0.314                    | <b>0.36</b>              | 0.573                   | <b>0.67</b>             | -0.03            |
| 21350                        | 2560 | 50RB-Mid Rear   | unfold     | 20.46                      | 21                        | 0.379                    | <b>0.43</b>              | 0.722                   | <b>0.82</b>             | 0.15             |
| 21100                        | 2535 | 50RB-Mid Rear   | unfold     | 20.38                      | 21                        | 0.389                    | <b>0.45</b>              | 0.659                   | <b>0.76</b>             | -0.17            |
| 20850                        | 2510 | 50RB-Mid Rear   | unfold     | 20.35                      | 21                        | 0.35                     | <b>0.41</b>              | 0.653                   | <b>0.76</b>             | 0.06             |
| 21350                        | 2560 | 50RB-Mid Left   | /          | 20.46                      | 21                        | 0.313                    | <b>0.35</b>              | 0.619                   | <b>0.70</b>             | -0.16            |
| 21350                        | 2560 | 50RB-Mid Right  | /          | 20.46                      | 21                        | 0.046                    | <b>0.05</b>              | 0.092                   | <b>0.10</b>             | -0.07            |
| 21350                        | 2560 | 50RB-Mid Bottom | /          | 20.46                      | 21                        | 0.323                    | <b>0.37</b>              | 0.775                   | <b>0.88</b>             | 0.14             |
| 21100                        | 2535 | 50RB-Mid Bottom | /          | 20.38                      | 21                        | 0.364                    | <b>0.42</b>              | 0.791                   | <b>0.91</b>             | -0.16            |
| 20850                        | 2510 | 50RB-Mid Bottom | /          | 20.35                      | 21                        | 0.342                    | <b>0.40</b>              | 0.742                   | <b>0.86</b>             | 0.15             |
| 21350                        | 2560 | 50RB-Mid Top    | /          | 20.46                      | 21                        | 0.077                    | <b>0.09</b>              | 0.148                   | <b>0.17</b>             | 0.07             |
| 21350                        | 2560 | 1RB-High Bottom | H          | 20.57                      | 21                        | 0.384                    | <b>0.42</b>              | 0.873                   | <b>0.96</b>             | -0.05            |

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 Band12 - 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measure d SAR(1g) (W/kg) | Reporte d SAR(1g) (W/kg) | Pow er Drift (dB) |
| Ch.                          | MHz   |          |       |               |            |                            |                          |                          |                          |                          |                          |                   |
| 23095                        | 707.5 | 1RB-Mid  | Left  | Cheek         | Fig.23     | 24.1                       | 25                       | 0.249                    | <b>0.31</b>              | 0.361                    | <b>0.44</b>              | -0.12             |
| 23095                        | 707.5 | 1RB-Mid  | Left  | Tilt          | /          | 24.1                       | 25                       | 0.114                    | <b>0.14</b>              | 0.133                    | <b>0.16</b>              | 0.07              |
| 23095                        | 707.5 | 1RB-Mid  | Right | Cheek         | /          | 24.1                       | 25                       | 0.221                    | <b>0.27</b>              | 0.351                    | <b>0.43</b>              | -0.11             |
| 23095                        | 707.5 | 1RB-Mid  | Right | Tilt          | /          | 24.1                       | 25                       | 0.108                    | <b>0.13</b>              | 0.126                    | <b>0.16</b>              | 0.13              |
| 23095                        | 707.5 | 25RB-Low | Left  | Cheek         | /          | 23.06                      | 24                       | 0.206                    | <b>0.26</b>              | 0.294                    | <b>0.37</b>              | 0.10              |
| 23095                        | 707.5 | 25RB-Low | Left  | Tilt          | /          | 23.06                      | 24                       | 0.081                    | <b>0.10</b>              | 0.095                    | <b>0.12</b>              | -0.06             |
| 23095                        | 707.5 | 25RB-Low | Right | Cheek         | /          | 23.06                      | 24                       | 0.179                    | <b>0.22</b>              | 0.276                    | <b>0.34</b>              | -0.18             |
| 23095                        | 707.5 | 25RB-Low | Right | Tilt          | /          | 23.06                      | 24                       | 0.082                    | <b>0.10</b>              | 0.096                    | <b>0.12</b>              | 0.09              |

Note1: The LTE mode is QPSK\_10MHz.

**Table 14.1-24: SAR Values (LTE Band12 – 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz   |                 |                   |                        |                            |                          |                          |                         |                         |                  |
| 23095                        | 707.5 | 1RB-Mid Front   | /                 | 24.1                   | 25                         | 0.2                      | <b>0.25</b>              | 0.263                   | <b>0.32</b>             | 0.02             |
| 23095                        | 707.5 | 1RB-Mid Rear    | Fig.22            | 24.1                   | 25                         | 0.399                    | <b>0.49</b>              | 0.575                   | <b>0.71</b>             | 0.01             |
| 23095                        | 707.5 | 1RB-Mid Rear    | unfold/<br>Fig.24 | 24.1                   | 25                         | 0.448                    | <b>0.55</b>              | 0.612                   | <b>0.75</b>             | 0.07             |
| 23095                        | 707.5 | 1RB-Mid Left    | /                 | 24.1                   | 25                         | 0.066                    | <b>0.08</b>              | 0.095                   | <b>0.12</b>             | -0.18            |
| 23095                        | 707.5 | 1RB-Mid Right   | /                 | 24.1                   | 25                         | 0.088                    | <b>0.11</b>              | 0.124                   | <b>0.15</b>             | 0.04             |
| 23095                        | 707.5 | 1RB-Mid Bottom  | /                 | 24.1                   | 25                         | 0.107                    | <b>0.13</b>              | 0.179                   | <b>0.22</b>             | -0.13            |
| 23095                        | 707.5 | 25RB-Low Front  | /                 | 23.06                  | 24                         | 0.167                    | <b>0.21</b>              | 0.219                   | <b>0.27</b>             | -0.06            |
| 23095                        | 707.5 | 25RB-Low Rear   | /                 | 23.06                  | 24                         | 0.352                    | <b>0.44</b>              | 0.505                   | <b>0.63</b>             | 0.12             |
| 23095                        | 707.5 | 25RB-Low Rear   | unfold            | 23.06                  | 24                         | 0.341                    | <b>0.42</b>              | 0.463                   | <b>0.57</b>             | 0.17             |
| 23095                        | 707.5 | 25RB-Low Left   | /                 | 23.06                  | 24                         | 0.03                     | <b>0.04</b>              | 0.044                   | <b>0.05</b>             | 0.06             |
| 23095                        | 707.5 | 25RB-Low Right  | /                 | 23.06                  | 24                         | 0.088                    | <b>0.11</b>              | 0.125                   | <b>0.16</b>             | 0.06             |
| 23095                        | 707.5 | 25RB-Low Bottom | /                 | 23.06                  | 24                         | 0.084                    | <b>0.10</b>              | 0.144                   | <b>0.18</b>             | 0.08             |

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

Note2: The LTE mode is QPSK\_10MHz.

**Table 14.1-25: SAR Values (LTE Band13 - 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Pow er Drift (dB) |
| Ch.                          | MHz |          |       |               |            |                            |                          |                          |                          |                         |                         |                   |
| 23230                        | 782 | 1RB-Mid  | Left  | Cheek         | Fig.25     | 22.94                      | 24                       | 0.238                    | <b>0.30</b>              | 0.315                   | <b>0.40</b>             | 0.06              |
| 23230                        | 782 | 1RB-Mid  | Left  | Tilt          | /          | 22.94                      | 24                       | 0.137                    | <b>0.17</b>              | 0.157                   | <b>0.20</b>             | 0.05              |
| 23230                        | 782 | 1RB-Mid  | Right | Cheek         | /          | 22.94                      | 24                       | 0.179                    | <b>0.23</b>              | 0.249                   | <b>0.32</b>             | 0.08              |
| 23230                        | 782 | 1RB-Mid  | Right | Tilt          | /          | 22.94                      | 24                       | 0.14                     | <b>0.18</b>              | 0.162                   | <b>0.21</b>             | -0.01             |
| 23230                        | 782 | 25RB-Low | Left  | Cheek         | /          | 21.82                      | 23                       | 0.179                    | <b>0.23</b>              | 0.242                   | <b>0.32</b>             | -0.03             |
| 23230                        | 782 | 25RB-Low | Left  | Tilt          | /          | 21.82                      | 23                       | 0.1                      | <b>0.13</b>              | 0.114                   | <b>0.15</b>             | 0.17              |
| 23230                        | 782 | 25RB-Low | Right | Cheek         | /          | 21.82                      | 23                       | 0.157                    | <b>0.21</b>              | 0.201                   | <b>0.26</b>             | -0.01             |
| 23230                        | 782 | 25RB-Low | Right | Tilt          | /          | 21.82                      | 23                       | 0.105                    | <b>0.14</b>              | 0.12                    | <b>0.16</b>             | -0.16             |

Note1: The LTE mode is QPSK\_10MHz.

**Table 14.1-26: SAR Values (LTE Band13 – 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz |                 |            |                            |                          |                          |                          |                         |                         |                  |
| 23230                        | 782 | 1RB-Low Front   | /          | 22.94                      | 24                       | 0.106                    | <b>0.14</b>              | 0.142                   | <b>0.18</b>             | 0.18             |
| 23230                        | 782 | 1RB-Low Rear    | Fig.26     | 22.94                      | 24                       | 0.411                    | <b>0.52</b>              | 0.594                   | <b>0.76</b>             | -0.02            |
| 23230                        | 782 | 1RB-Low Rear    | unfold     | 22.94                      | 24                       | 0.194                    | <b>0.25</b>              | 0.265                   | <b>0.34</b>             | -0.11            |
| 23230                        | 782 | 1RB-Low Left    | /          | 22.94                      | 24                       | 0.069                    | <b>0.09</b>              | 0.102                   | <b>0.13</b>             | 0.11             |
| 23230                        | 782 | 1RB-Low Right   | /          | 22.94                      | 24                       | 0.077                    | <b>0.10</b>              | 0.109                   | <b>0.14</b>             | -0.03            |
| 23230                        | 782 | 1RB-Low Bottom  | /          | 22.94                      | 24                       | 0.067                    | <b>0.09</b>              | 0.111                   | <b>0.14</b>             | 0.12             |
| 23230                        | 782 | 25RB-Low Front  | /          | 21.82                      | 23                       | 0.143                    | <b>0.19</b>              | 0.19                    | <b>0.25</b>             | 0.06             |
| 23230                        | 782 | 25RB-Low Rear   | /          | 21.82                      | 23                       | 0.334                    | <b>0.44</b>              | 0.484                   | <b>0.64</b>             | 0.01             |
| 23230                        | 782 | 25RB-Low Rear   | unfold     | 21.82                      | 23                       | 0.162                    | <b>0.21</b>              | 0.225                   | <b>0.30</b>             | -0.10            |
| 23230                        | 782 | 25RB-Low Right  | /          | 21.82                      | 23                       | 0.064                    | <b>0.08</b>              | 0.094                   | <b>0.12</b>             | 0.16             |
| 23230                        | 782 | 25RB-Low Bottom | /          | 21.82                      | 23                       | 0.068                    | <b>0.09</b>              | 0.095                   | <b>0.12</b>             | 0.07             |

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

Note2: The LTE mode is QPSK\_10MHz.

**Table 14.1-27: 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measure d SAR(1g) (W/kg) | Reporte d SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |          |       |               |            |                            |                          |                          |                          |                          |                          |                  |
| 40620                        | 2593 | 1RB-Mid  | Left  | Cheek         | /          | 23.64                      | 24.5                     | 0.201                    | <b>0.25</b>              | 0.501                    | <b>0.61</b>              | 0.10             |
| 40620                        | 2593 | 1RB-Mid  | Left  | Tilt          | /          | 23.64                      | 24.5                     | 0.052                    | <b>0.06</b>              | 0.117                    | <b>0.14</b>              | -0.11            |
| 40620                        | 2593 | 1RB-Mid  | Right | Cheek         | Fig.27     | 23.64                      | 24.5                     | 0.208                    | <b>0.25</b>              | 0.51                     | <b>0.62</b>              | -0.03            |
| 40620                        | 2593 | 1RB-Mid  | Right | Tilt          | /          | 23.64                      | 24.5                     | 0.048                    | <b>0.06</b>              | 0.09                     | <b>0.11</b>              | 0.07             |
| 40620                        | 2593 | 50RB-Mid | Left  | Cheek         | /          | 22.42                      | 23.5                     | 0.172                    | <b>0.22</b>              | 0.437                    | <b>0.56</b>              | 0.13             |
| 40620                        | 2593 | 50RB-Mid | Left  | Tilt          | /          | 22.42                      | 23.5                     | 0.046                    | <b>0.06</b>              | 0.093                    | <b>0.12</b>              | 0.14             |
| 40620                        | 2593 | 50RB-Mid | Right | Cheek         | /          | 22.42                      | 23.5                     | 0.063                    | <b>0.08</b>              | 0.237                    | <b>0.30</b>              | 0.10             |
| 40620                        | 2593 | 50RB-Mid | Right | Tilt          | /          | 22.42                      | 23.5                     | 0.039                    | <b>0.05</b>              | 0.074                    | <b>0.09</b>              | 0.06             |

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-28: SAR Values (LTE Band41 PC3– 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |                |            |                        |                            |                          |                          |                         |                         |                  |
| 40620                        | 2593 | 1RB-Mid Front  | /          | 23.64                  | 24.5                       | 0.075                    | <b>0.09</b>              | 0.129                   | <b>0.16</b>             | 0.16             |
| 40620                        | 2593 | 1RB-Mid Rear   | Fig.28     | 23.64                  | 24.5                       | 0.284                    | <b>0.35</b>              | 0.524                   | <b>0.64</b>             | 0.05             |
| 40620                        | 2593 | 1RB-Mid Rear   | unfold     | 23.64                  | 24.5                       | 0.233                    | <b>0.28</b>              | 0.456                   | <b>0.56</b>             | -0.17            |
| 40620                        | 2593 | 50RB-Mid Front | /          | 22.42                  | 23.5                       | 0.056                    | <b>0.07</b>              | 0.099                   | <b>0.13</b>             | -0.14            |
| 40620                        | 2593 | 50RB-Mid Rear  | /          | 22.42                  | 23.5                       | 0.233                    | <b>0.30</b>              | 0.43                    | <b>0.55</b>             | -0.07            |
| 40620                        | 2593 | 50RB-Mid Rear  | unfold     | 22.42                  | 23.5                       | 0.189                    | <b>0.24</b>              | 0.371                   | <b>0.48</b>             | 0.14             |

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-29: SAR Values (LTE Band41 PC3 – 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz    |                 |            |                            |                           |                          |                          |                         |                         |                  |
| 40620                        | 2593   | 1RB-Mid Front   | /          | 22.05                      | 22.5                      | 0.084                    | <b>0.09</b>              | 0.156                   | <b>0.17</b>             | 0.03             |
| 40620                        | 2593   | 1RB-Mid Rear    | /          | 22.05                      | 22.5                      | 0.369                    | <b>0.41</b>              | 0.685                   | <b>0.76</b>             | 0.08             |
| 40620                        | 2593   | 1RB-Mid Rear    | unfold     | 22.05                      | 22.5                      | 0.324                    | <b>0.36</b>              | 0.643                   | <b>0.71</b>             | 0.06             |
| 40620                        | 2593   | 1RB-Mid Left    | /          | 22.05                      | 22.5                      | 0.251                    | <b>0.28</b>              | 0.491                   | <b>0.54</b>             | 0.13             |
| 40620                        | 2593   | 1RB-Mid Right   | /          | 22.05                      | 22.5                      | 0.077                    | <b>0.09</b>              | 0.146                   | <b>0.16</b>             | 0.15             |
| 41490                        | 2680   | 1RB-Mid Bottom  | /          | 21.49                      | 22.5                      | 0.412                    | <b>0.52</b>              | 0.938                   | <b>1.18</b>             | 0.05             |
| 41055                        | 2636.5 | 1RB-Mid Bottom  | Fig.29     | 21.24                      | 22.5                      | 0.425                    | <b>0.57</b>              | 0.964                   | <b>1.29</b>             | -0.15            |
| 40620                        | 2593   | 1RB-Mid Bottom  | /          | 22.05                      | 22.5                      | 0.383                    | <b>0.42</b>              | 0.865                   | <b>0.96</b>             | 0.09             |
| 40185                        | 2549.5 | 1RB-Mid Bottom  | /          | 21.66                      | 22.5                      | 0.364                    | <b>0.44</b>              | 0.812                   | <b>0.99</b>             | -0.12            |
| 39750                        | 2506   | 1RB-Mid Bottom  | /          | 21.43                      | 22.5                      | 0.385                    | <b>0.49</b>              | 0.842                   | <b>1.08</b>             | 0.08             |
| 41055                        | 2636.5 | 100RB Bottom    | /          | 21.48                      | 22.5                      | 0.41                     | <b>0.52</b>              | 0.933                   | <b>1.18</b>             | 0.17             |
| 40620                        | 2593   | 50RB-Mid Front  | /          | 21.84                      | 22.5                      | 0.081                    | <b>0.09</b>              | 0.153                   | <b>0.18</b>             | -0.06            |
| 40620                        | 2593   | 50RB-Mid Rear   | /          | 21.84                      | 22.5                      | 0.347                    | <b>0.40</b>              | 0.632                   | <b>0.74</b>             | 0.09             |
| 40620                        | 2593   | 50RB-Mid Rear   | unfold     | 21.84                      | 22.5                      | 0.297                    | <b>0.35</b>              | 0.611                   | <b>0.71</b>             | 0.02             |
| 40620                        | 2593   | 50RB-Mid Left   | /          | 21.84                      | 22.5                      | 0.239                    | <b>0.28</b>              | 0.474                   | <b>0.55</b>             | -0.12            |
| 40620                        | 2593   | 50RB-Mid Right  | /          | 21.84                      | 22.5                      | 0.101                    | <b>0.12</b>              | 0.194                   | <b>0.23</b>             | -0.08            |
| 41490                        | 2680   | 50RB-Mid Bottom | /          | 21.54                      | 22.5                      | 0.354                    | <b>0.44</b>              | 0.807                   | <b>1.01</b>             | -0.14            |
| 41055                        | 2636.5 | 50RB-Mid Bottom | /          | 21.3                       | 22.5                      | 0.366                    | <b>0.48</b>              | 0.829                   | <b>1.09</b>             | -0.09            |
| 40620                        | 2593   | 50RB-Mid Bottom | /          | 21.84                      | 22.5                      | 0.329                    | <b>0.38</b>              | 0.744                   | <b>0.87</b>             | -0.10            |
| 40185                        | 2549.5 | 50RB-Mid Bottom | /          | 21.42                      | 22.5                      | 0.313                    | <b>0.40</b>              | 0.698                   | <b>0.90</b>             | -0.04            |
| 39750                        | 2506   | 50RB-Mid Bottom | /          | 21.44                      | 22.5                      | 0.331                    | <b>0.42</b>              | 0.724                   | <b>0.92</b>             | -0.12            |
| 41055                        | 2636.5 | 1RB-Mid Bottom  | H          | 21.24                      | 22.5                      | 0.412                    | <b>0.55</b>              | 0.946                   | <b>1.26</b>             | -0.06            |

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

Note2: The LTE mode is QPSK\_20MHz.



**Table 14.1-30: 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measure d SAR(1g) (W/kg) | Reporte d SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |          |       |               |            |                            |                          |                          |                          |                          |                          |                  |
| 40620                        | 2593 | 1RB-Mid  | Left  | Cheek         | Fig.30     | 25.31                      | 26.5                     | 0.283                    | <b>0.37</b>              | 0.572                    | <b>0.75</b>              | -0.10            |
| 40620                        | 2593 | 1RB-Mid  | Left  | Tilt          | /          | 25.31                      | 26.5                     | 0.086                    | <b>0.11</b>              | 0.142                    | <b>0.19</b>              | 0.03             |
| 40620                        | 2593 | 1RB-Mid  | Right | Cheek         | /          | 25.31                      | 26.5                     | 0.257                    | <b>0.34</b>              | 0.426                    | <b>0.56</b>              | 0.14             |
| 40620                        | 2593 | 1RB-Mid  | Right | Tilt          | /          | 25.31                      | 26.5                     | 0.061                    | <b>0.08</b>              | 0.099                    | <b>0.13</b>              | -0.14            |
| 40620                        | 2593 | 50RB-Mid | Left  | Cheek         | /          | 24.28                      | 25.5                     | 0.248                    | <b>0.33</b>              | 0.501                    | <b>0.66</b>              | 0.02             |
| 40620                        | 2593 | 50RB-Mid | Left  | Tilt          | /          | 24.28                      | 25.5                     | 0.066                    | <b>0.09</b>              | 0.108                    | <b>0.14</b>              | 0.18             |
| 40620                        | 2593 | 50RB-Mid | Right | Cheek         | /          | 24.28                      | 25.5                     | 0.248                    | <b>0.33</b>              | 0.447                    | <b>0.59</b>              | -0.16            |
| 40620                        | 2593 | 50RB-Mid | Right | Tilt          | /          | 24.28                      | 25.5                     | 0.053                    | <b>0.07</b>              | 0.074                    | <b>0.10</b>              | 0.04             |

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-31: SAR Values (LTE Band41 PC2– 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |                |            |                        |                            |                          |                          |                         |                         |                  |
| 40620                        | 2593 | 1RB-Mid Front  | /          | 25.31                  | 26.5                       | 0.092                    | <b>0.12</b>              | 0.161                   | <b>0.21</b>             | 0.11             |
| 40620                        | 2593 | 1RB-Mid Rear   | Fig.31     | 25.31                  | 26.5                       | 0.303                    | <b>0.40</b>              | 0.55                    | <b>0.72</b>             | 0.02             |
| 40620                        | 2593 | 1RB-Mid Rear   | unfold     | 25.31                  | 26.5                       | 0.27                     | <b>0.36</b>              | 0.514                   | <b>0.68</b>             | -0.11            |
| 40620                        | 2593 | 50RB-Mid Front | /          | 24.28                  | 25.5                       | 0.073                    | <b>0.10</b>              | 0.126                   | <b>0.17</b>             | -0.18            |
| 40620                        | 2593 | 50RB-Mid Rear  | /          | 24.28                  | 25.5                       | 0.227                    | <b>0.30</b>              | 0.407                   | <b>0.54</b>             | 0.15             |
| 40620                        | 2593 | 50RB-Mid Rear  | unfold     | 24.28                  | 25.5                       | 0.221                    | <b>0.29</b>              | 0.419                   | <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 14.1-32: SAR Values (LTE Band41 PC2 – 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |                 |            |                        |                            |                          |                          |                         |                         |                  |
| 40620                        | 2593 | 1RB-Mid Front   | /          | 21.95                  | 22                         | 0.046                    | <b>0.05</b>              | 0.083                   | <b>0.08</b>             | 0.13             |
| 40620                        | 2593 | 1RB-Mid Rear    | /          | 21.95                  | 22                         | 0.175                    | <b>0.18</b>              | 0.313                   | <b>0.32</b>             | 0.05             |
| 40620                        | 2593 | 1RB-Mid Rear    | unfold     | 21.95                  | 22                         | 0.162                    | <b>0.16</b>              | 0.322                   | <b>0.33</b>             | 0.04             |
| 40620                        | 2593 | 1RB-Mid Left    | /          | 21.95                  | 22                         | 0.116                    | <b>0.12</b>              | 0.219                   | <b>0.22</b>             | 0.04             |
| 40620                        | 2593 | 1RB-Mid Right   | /          | 21.95                  | 22                         | 0.038                    | <b>0.04</b>              | 0.071                   | <b>0.07</b>             | -0.18            |
| 40620                        | 2593 | 1RB-Mid Bottom  | Fig.32     | 21.95                  | 22                         | 0.239                    | <b>0.24</b>              | 0.532                   | <b>0.54</b>             | 0.06             |
| 40620                        | 2593 | 50RB-Mid Front  | /          | 21.76                  | 22                         | 0.05                     | <b>0.05</b>              | 0.09                    | <b>0.10</b>             | -0.08            |
| 40620                        | 2593 | 50RB-Mid Rear   | /          | 21.76                  | 22                         | 0.199                    | <b>0.21</b>              | 0.36                    | <b>0.38</b>             | 0.06             |
| 40620                        | 2593 | 50RB-Mid Rear   | unfold     | 21.76                  | 22                         | 0.166                    | <b>0.18</b>              | 0.33                    | <b>0.35</b>             | -0.05            |
| 40620                        | 2593 | 50RB-Mid Left   | /          | 21.76                  | 22                         | 0.122                    | <b>0.13</b>              | 0.232                   | <b>0.25</b>             | -0.09            |
| 40620                        | 2593 | 50RB-Mid Right  | /          | 21.76                  | 22                         | 0.041                    | <b>0.04</b>              | 0.077                   | <b>0.08</b>             | -0.04            |
| 40620                        | 2593 | 50RB-Mid Bottom | /          | 21.76                  | 22                         | 0.209                    | <b>0.22</b>              | 0.46                    | <b>0.49</b>             | -0.15            |

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-33: SAR Values (LTE Band66 - 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(10g) (W/kg) | Reported SAR(10g )(W/kg) | Measure d SAR(1g) (W/kg) | Reporte d SAR(1g) (W/kg) | Pow er Drift (dB) |
| Ch.                          | MHz  |          |       |               |            |                            |                          |                          |                          |                          |                          |                   |
| 132072                       | 1720 | 1RB-Mid  | Left  | Cheek         | /          | 24.88                      | 25                       | 0.145                    | <b>0.15</b>              | 0.332                    | <b>0.34</b>              | 0.13              |
| 132072                       | 1720 | 1RB-Mid  | Left  | Tilt          | /          | 24.88                      | 25                       | 0.064                    | <b>0.07</b>              | 0.105                    | <b>0.11</b>              | -0.12             |
| 132072                       | 1720 | 1RB-Mid  | Right | Cheek         | /          | 24.88                      | 25                       | 0.209                    | <b>0.21</b>              | 0.354                    | <b>0.36</b>              | -0.05             |
| 132072                       | 1720 | 1RB-Mid  | Right | Tilt          | /          | 24.88                      | 25                       | 0.054                    | <b>0.06</b>              | 0.086                    | <b>0.09</b>              | -0.06             |
| 132072                       | 1720 | 50RB-Low | Left  | Cheek         | /          | 23.62                      | 24                       | 0.168                    | <b>0.18</b>              | 0.371                    | <b>0.40</b>              | 0.10              |
| 132072                       | 1720 | 50RB-Low | Left  | Tilt          | /          | 23.62                      | 24                       | 0.064                    | <b>0.07</b>              | 0.105                    | <b>0.11</b>              | -0.14             |
| 132072                       | 1720 | 50RB-Low | Right | Cheek         | Fig.33     | 23.62                      | 24                       | 0.232                    | <b>0.25</b>              | 0.386                    | <b>0.42</b>              | 0.06              |
| 132072                       | 1720 | 50RB-Low | Right | Tilt          | /          | 23.62                      | 24                       | 0.053                    | <b>0.06</b>              | 0.084                    | <b>0.09</b>              | 0.05              |

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-34: 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |                |            |                        |                            |                          |                          |                         |                         |                  |
| 132072                       | 1720 | 1RB-Mid Front  | /          | 24.88                  | 25                         | 0.133                    | <b>0.14</b>              | 0.208                   | <b>0.21</b>             | -0.16            |
| 132572                       | 1770 | 1RB-Mid Rear   | /          | 24.37                  | 25                         | 0.568                    | <b>0.66</b>              | 0.911                   | <b>1.05</b>             | -0.04            |
| 132322                       | 1745 | 1RB-Mid Rear   | Fig.34     | 24.58                  | 25                         | 0.609                    | <b>0.67</b>              | 0.985                   | <b>1.09</b>             | 0.02             |
| 132072                       | 1720 | 1RB-Mid Rear   | /          | 24.88                  | 25                         | 0.457                    | <b>0.47</b>              | 0.738                   | <b>0.76</b>             | -0.20            |
| 132322                       | 1745 | 100RB Rear     | /          | 23.55                  | 24                         | 0.498                    | <b>0.55</b>              | 0.81                    | <b>0.90</b>             | -0.12            |
| 132072                       | 1720 | 1RB-Mid Rear   | unfold     | 24.88                  | 25                         | 0.243                    | <b>0.25</b>              | 0.389                   | <b>0.40</b>             | -0.03            |
| 132072                       | 1720 | 50RB-Mid Front | /          | 23.62                  | 24                         | 0.151                    | <b>0.16</b>              | 0.233                   | <b>0.25</b>             | 0.13             |
| 132572                       | 1770 | 50RB-Mid Rear  | /          | 23.62                  | 24                         | 0.512                    | <b>0.56</b>              | 0.806                   | <b>0.88</b>             | -0.05            |
| 132322                       | 1745 | 50RB-Mid Rear  | /          | 23.62                  | 24                         | 0.553                    | <b>0.60</b>              | 0.881                   | <b>0.96</b>             | -0.15            |
| 132072                       | 1720 | 50RB-Mid Rear  | /          | 23.62                  | 24                         | 0.487                    | <b>0.53</b>              | 0.783                   | <b>0.85</b>             | 0.08             |
| 132072                       | 1720 | 50RB-Mid Rear  | unfold     | 23.62                  | 24                         | 0.278                    | <b>0.30</b>              | 0.438                   | <b>0.48</b>             | -0.06            |

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-35: SAR Values (LTE Band66 – 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz  |                 |            |                        |                            |                          |                          |                         |                         |                  |
| 132322                       | 1745 | 1RB-Mid Front   | /          | 20.9                   | 21                         | 0.156                    | <b>0.16</b>              | 0.253                   | <b>0.26</b>             | 0.16             |
| 132322                       | 1745 | 1RB-Mid Rear    | /          | 20.9                   | 21                         | 0.33                     | <b>0.34</b>              | 0.569                   | <b>0.58</b>             | 0.02             |
| 132322                       | 1745 | 1RB-Mid Rear    | unfold     | 20.9                   | 21                         | 0.261                    | <b>0.27</b>              | 0.466                   | <b>0.48</b>             | 0.14             |
| 132322                       | 1745 | 1RB-Mid Left    | /          | 20.9                   | 21                         | 0.086                    | <b>0.09</b>              | 0.143                   | <b>0.15</b>             | -0.14            |
| 132322                       | 1745 | 1RB-Mid Right   | /          | 20.9                   | 21                         | 0.065                    | <b>0.07</b>              | 0.11                    | <b>0.11</b>             | 0.00             |
| 132572                       | 1770 | 1RB-Mid Bottom  | /          | 20.35                  | 21                         | 0.413                    | <b>0.48</b>              | 0.764                   | <b>0.89</b>             | 0.14             |
| 132322                       | 1745 | 1RB-Mid Bottom  | Fig.35     | 20.9                   | 21                         | 0.477                    | <b>0.49</b>              | 0.882                   | <b>0.90</b>             | 0.02             |
| 132072                       | 1720 | 1RB-Mid Bottom  | /          | 20.77                  | 21                         | 0.452                    | <b>0.48</b>              | 0.848                   | <b>0.89</b>             | 0.05             |
| 132322                       | 1745 | 1RB-Mid Bottom  | /          | 20.78                  | 21                         | 0.445                    | <b>0.47</b>              | 0.834                   | <b>0.88</b>             | -0.07            |
| 132322                       | 1745 | 50RB-Mid Front  | /          | 20.81                  | 21                         | 0.169                    | <b>0.18</b>              | 0.28                    | <b>0.29</b>             | -0.04            |
| 132322                       | 1745 | 50RB-Mid Rear   | /          | 20.81                  | 21                         | 0.343                    | <b>0.36</b>              | 0.601                   | <b>0.63</b>             | -0.11            |
| 132322                       | 1745 | 50RB-Mid Rear   | unfold     | 20.81                  | 21                         | 0.276                    | <b>0.29</b>              | 0.499                   | <b>0.52</b>             | 0.01             |
| 132322                       | 1745 | 50RB-Mid Left   | /          | 20.81                  | 21                         | 0.091                    | <b>0.10</b>              | 0.154                   | <b>0.16</b>             | -0.13            |
| 132322                       | 1745 | 50RB-Mid Right  | /          | 20.81                  | 21                         | 0.066                    | <b>0.07</b>              | 0.116                   | <b>0.12</b>             | -0.16            |
| 132572                       | 1770 | 50RB-Low Bottom | /          | 20.48                  | 21                         | 0.4                      | <b>0.45</b>              | 0.741                   | <b>0.84</b>             | 0.13             |
| 132322                       | 1745 | 50RB-Mid Bottom | /          | 20.81                  | 21                         | 0.463                    | <b>0.48</b>              | 0.851                   | <b>0.89</b>             | -0.10            |
| 132072                       | 1720 | 50RB-Low Bottom | /          | 20.74                  | 21                         | 0.464                    | <b>0.49</b>              | 0.842                   | <b>0.89</b>             | 0.16             |
| 132072                       | 1720 | 100RB Bottom    | /          | 20.74                  | 21                         | 0.453                    | <b>0.48</b>              | 0.834                   | <b>0.89</b>             | 0.10             |

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-36: 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(10g) (W/kg) | Reported SAR(10g )(W/kg) | Measure d SAR(1g) (W/kg) | Reporte d SAR(1g) (W/kg) | Pow er Drift (dB) |
| Ch.                          | MHz |          |       |               |            |                            |                          |                          |                          |                          |                          |                   |
| 133222                       | 673 | 1RB-Mid  | Left  | Cheek         | Fig.36     | 23.77                      | 24.5                     | 0.246                    | <b>0.29</b>              | 0.387                    | <b>0.46</b>              | 0.20              |
| 133222                       | 673 | 1RB-Mid  | Left  | Tilt          | /          | 23.77                      | 24.5                     | 0.077                    | <b>0.09</b>              | 0.103                    | <b>0.12</b>              | 0.07              |
| 133222                       | 673 | 1RB-Mid  | Right | Cheek         | /          | 23.77                      | 24.5                     | 0.187                    | <b>0.22</b>              | 0.334                    | <b>0.40</b>              | -0.10             |
| 133222                       | 673 | 1RB-Mid  | Right | Tilt          | /          | 23.77                      | 24.5                     | 0.091                    | <b>0.11</b>              | 0.121                    | <b>0.14</b>              | 0.01              |
| 133222                       | 673 | 50RB-Mid | Left  | Cheek         | /          | 22.73                      | 23.5                     | 0.194                    | <b>0.23</b>              | 0.306                    | <b>0.37</b>              | 0.12              |
| 133222                       | 673 | 50RB-Mid | Left  | Tilt          | /          | 22.73                      | 23.5                     | 0.062                    | <b>0.07</b>              | 0.081                    | <b>0.10</b>              | -0.15             |
| 133222                       | 673 | 50RB-Mid | Right | Cheek         | /          | 22.73                      | 23.5                     | 0.139                    | <b>0.17</b>              | 0.251                    | <b>0.30</b>              | -0.14             |
| 133222                       | 673 | 50RB-Mid | Right | Tilt          | /          | 22.73                      | 23.5                     | 0.07                     | <b>0.08</b>              | 0.094                    | <b>0.11</b>              | 0.06              |

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-37 SAR Values (LTE Band71 – 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(10g) (W/kg) | Reported SAR(10g) (W/kg) | Measured SAR(1g) (W/kg) | Reported SAR(1g) (W/kg) | Power Drift (dB) |
| Ch.                          | MHz |                 |                   |                            |                           |                          |                          |                         |                         |                  |
| 133222                       | 673 | 1RB-Mid Front   | /                 | 23.77                      | 24.5                      | 0.132                    | <b>0.16</b>              | 0.182                   | <b>0.22</b>             | -0.19            |
| 133222                       | 673 | 1RB-Mid Rear    | /                 | 23.77                      | 24.5                      | 0.291                    | <b>0.34</b>              | 0.427                   | <b>0.51</b>             | 0.06             |
| 133222                       | 673 | 1RB-Mid Rear    | unfold/<br>Fig.37 | 23.77                      | 24.5                      | 0.344                    | <b>0.41</b>              | 0.476                   | <b>0.56</b>             | -0.03            |
| 133222                       | 673 | 1RB-Mid Left    | /                 | 23.77                      | 24.5                      | 0.074                    | <b>0.09</b>              | 0.111                   | <b>0.13</b>             | -0.11            |
| 133222                       | 673 | 1RB-Mid Right   | /                 | 23.77                      | 24.5                      | 0.057                    | <b>0.07</b>              | 0.082                   | <b>0.10</b>             | -0.02            |
| 133222                       | 673 | 1RB-Mid Bottom  | /                 | 23.77                      | 24.5                      | 0.077                    | <b>0.09</b>              | 0.127                   | <b>0.15</b>             | -0.02            |
| 133222                       | 673 | 50RB-Mid Front  | /                 | 22.73                      | 23.5                      | 0.104                    | <b>0.12</b>              | 0.144                   | <b>0.17</b>             | -0.12            |
| 133222                       | 673 | 50RB-Mid Rear   | /                 | 22.73                      | 23.5                      | 0.227                    | <b>0.27</b>              | 0.333                   | <b>0.40</b>             | -0.02            |
| 133222                       | 673 | 50RB-Mid Rear   | unfold            | 22.73                      | 23.5                      | 0.257                    | <b>0.31</b>              | 0.357                   | <b>0.43</b>             | 0.19             |
| 133222                       | 673 | 50RB-Mid Left   | /                 | 22.73                      | 23.5                      | 0.04                     | <b>0.05</b>              | 0.059                   | <b>0.07</b>             | 0.13             |
| 133222                       | 673 | 50RB-Mid Right  | /                 | 22.73                      | 23.5                      | 0.036                    | <b>0.04</b>              | 0.053                   | <b>0.06</b>             | 0.03             |
| 133222                       | 673 | 50RB-Mid Bottom | /                 | 22.73                      | 23.5                      | 0.074                    | <b>0.09</b>              | 0.134                   | <b>0.16</b>             | 0.16             |

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

According to the KDB248227 D01, SAR is measured for 2.4GHz 802.11b DSSS using the initial test position procedure.

### Head Evaluation

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

| 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  |       |               |      |                            |                          |                         |                        |                          |                         |                  |
| 6                            | 2437 | Left  | Cheek         | /    | 16.48                      | 16.5                     | 0.202                   | <b>0.20</b>            | 0.468                    | <b>0.47</b>             | 0.05             |
| 6                            | 2437 | Left  | Tilt          | /    | 16.48                      | 16.5                     | 0.02                    | <b>0.02</b>            | 0.035                    | <b>0.04</b>             | -0.12            |
| 6                            | 2437 | Right | Cheek         | /    | 16.48                      | 16.5                     | 0.033                   | <b>0.03</b>            | 0.074                    | <b>0.07</b>             | 0.06             |
| 6                            | 2437 | Right | Tilt          | /    | 16.48                      | 16.5                     | 0.021                   | <b>0.02</b>            | 0.032                    | <b>0.03</b>             | -0.11            |

As shown above table, the initial test position for head is “Left Cheek”. So the head SAR of WLAN is presented as below:

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

| Ambient Temperature: 22.9 °C |      |       |               |                  | Liquid Temperature: 22.5°C |                          |                         |                        |                          |                         |                  |
|------------------------------|------|-------|---------------|------------------|----------------------------|--------------------------|-------------------------|------------------------|--------------------------|-------------------------|------------------|
| Frequency                    |      | Side  | Test Position | Figure No./ 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  |       |               |                  |                            |                          |                         |                        |                          |                         |                  |
| 6                            | 2437 | Left  | Cheek         | Fig.38           | 16.48                      | 16.5                     | 0.208                   | <b>0.21</b>            | 0.481                    | <b>0.48</b>             | 0.05             |
| 6                            | 2437 | Right | Cheek         | /                | 16.48                      | 16.5                     | 0.039                   | <b>0.04</b>            | 0.088                    | <b>0.09</b>             | 0.06             |

Note1: When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest estimated 1-g SAR conditions determined by area scans, on the highest maximum output power channel, until the reported SAR is  $\leq$  0.8 W/kg.

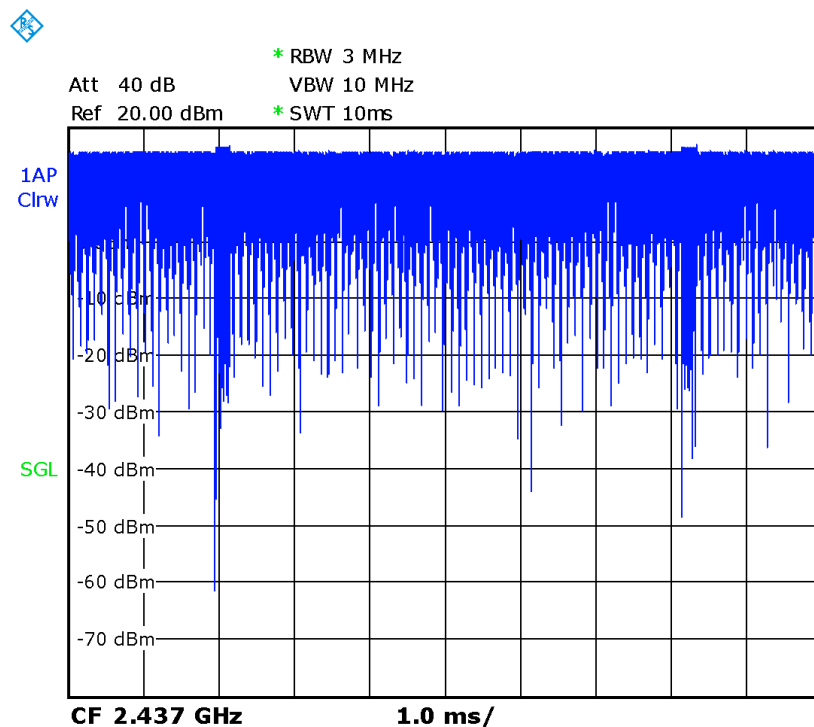
Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is  $\leq$  1.2 W/kg or all required channels are tested.

According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. The scaled reported SAR is presented as below.

**Table 14.2-3: 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) |
| Ch.                          | MHz  |      |               |                             |                     |                         |                                |
| 6                            | 2437 | Left | Cheek         | 100%                        | 100%                | <b>0.48</b>             | <b>0.48</b>                    |

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



**Picture 14.2-1 Duty factor plot**

## Body Evaluation

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

| Ambient Temperature: 22.9 °C |      |               |             |                       | Liquid Temperature: 22.5°C |                         |                        |                          |                         |                  |
|------------------------------|------|---------------|-------------|-----------------------|----------------------------|-------------------------|------------------------|--------------------------|-------------------------|------------------|
| Frequency                    |      | 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  |               |             |                       |                            |                         |                        |                          |                         |                  |
| 6                            | 2437 | Front         | 10mm        | 16.48                 | 16.5                       | 0.0281                  | <b>0.03</b>            | 0.0538                   | <b>0.05</b>             | 0.06             |
| 6                            | 2437 | Rear          | 10mm        | 16.48                 | 16.5                       | 0.244                   | <b>0.25</b>            | 0.558                    | <b>0.56</b>             | -0.14            |
| 6                            | 2437 | Rear          | 10mm/Unfold | 16.48                 | 16.5                       | 0.175                   | <b>0.18</b>            | 0.391                    | <b>0.39</b>             | -0.08            |
| 6                            | 2437 | Left          | 10mm        | 16.48                 | 16.5                       | 0.099                   | <b>0.10</b>            | 0.205                    | <b>0.21</b>             | -0.18            |
| 6                            | 2437 | Top           | 10mm        | 16.48                 | 16.5                       | 0.039                   | <b>0.04</b>            | 0.069                    | <b>0.07</b>             | -0.06            |
| 6                            | 2437 | Rear          | 15mm        | 16.48                 | 16.5                       | 0.0887                  | <b>0.09</b>            | 0.18                     | <b>0.18</b>             | -0.02            |

As shown above table, the initial test position for body is “Rear 10mm”. So the body SAR of WLAN is presented as below:

**Table 14.2-5: SAR Values (WLAN - Body)– 802.11b (Full SAR)**

| Ambient Temperature: 22.9 °C |      |                  |                  |                       | Liquid Temperature: 22.5°C |                         |                        |                          |                         |                  |
|------------------------------|------|------------------|------------------|-----------------------|----------------------------|-------------------------|------------------------|--------------------------|-------------------------|------------------|
| Frequency                    |      | Test Position    | Figure No./ 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  |                  |                  |                       |                            |                         |                        |                          |                         |                  |
| 6                            | 2437 | Rear 10mm        | Fig.39           | 16.48                 | 16.5                       | 0.25                    | <b>0.25</b>            | 0.562                    | <b>0.56</b>             | -0.14            |
| 6                            | 2437 | Rear 10mm/Unfold | /                | 16.48                 | 16.5                       | 0.18                    | <b>0.18</b>            | 0.397                    | <b>0.40</b>             | -0.08            |

Note1: When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest estimated 1-g SAR conditions determined by area scans, on the highest maximum output power channel, until the reported SAR is  $\leq$  0.8 W/kg.

Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is  $\leq$  1.2 W/kg or all required channels are tested.

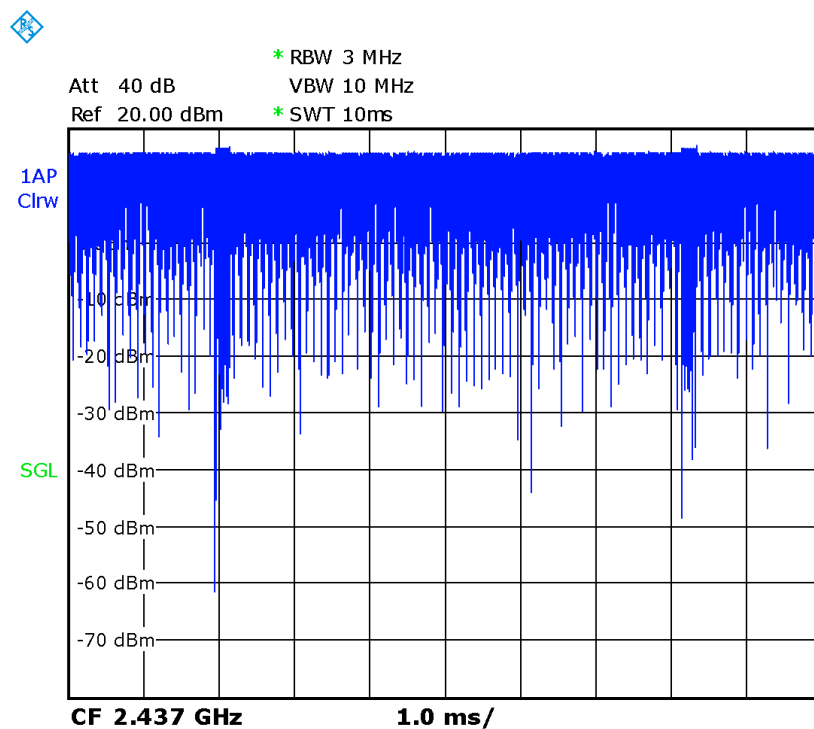


According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. The scaled reported SAR is presented as below.

**Table 14.2-6: SAR Values (WLAN - Body) – 802.11b (Scaled Reported SAR)**

| 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>0.56</b>             | <b>0.56</b>                    |

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



**Picture 14.2-2 Duty factor plot**

## 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 Body GSM1900 (1g)**

| Frequency |        | Test Position | Spacing (mm) | Original SAR (W/kg) | First Repeated SAR (W/kg) | The Ratio | Second Repeated SAR (W/kg) |
|-----------|--------|---------------|--------------|---------------------|---------------------------|-----------|----------------------------|
| Ch.       | MHz    |               |              |                     |                           |           |                            |
| 512       | 1850.2 | Bottom        | 10           | 0.954               | 0.938                     | 1.02      | /                          |

**Table 15.2: SAR Measurement Variability for Body WCDMA1900 (1g)**

| Frequency |        | Test Position | Spacing (mm) | Original SAR (W/kg) | First Repeated SAR (W/kg) | The Ratio | Second Repeated SAR (W/kg) |
|-----------|--------|---------------|--------------|---------------------|---------------------------|-----------|----------------------------|
| Ch.       | MHz    |               |              |                     |                           |           |                            |
| 9262      | 1852.4 | Rear          | 15           | 0.823               | 0.803                     | 1.02      | /                          |
| 9262      | 1852.4 | Bottom        | 10           | 0.95                | 0.932                     | 1.02      | /                          |

**Table 15.3: SAR Measurement Variability for Body WCDMA1700 (1g)**

| Frequency |        | Test Position | Spacing (mm) | Original SAR (W/kg) | First Repeated SAR (W/kg) | The Ratio | Second Repeated SAR (W/kg) |
|-----------|--------|---------------|--------------|---------------------|---------------------------|-----------|----------------------------|
| Ch.       | MHz    |               |              |                     |                           |           |                            |
| 1513      | 1752.6 | Rear          | 15           | 0.925               | 0.902                     | 1.03      | /                          |
| 1513      | 1752.6 | Bottom        | 10           | 0.886               | 0.857                     | 1.03      | /                          |

**Table 15.4: SAR Measurement Variability for Body LTE B2 (1g)**

| Frequency |      | Mode    | Test Position | Spacing (mm) | Original SAR (W/kg) | First Repeated SAR (W/kg) | The Ratio | Second Repeated SAR (W/kg) |
|-----------|------|---------|---------------|--------------|---------------------|---------------------------|-----------|----------------------------|
| Ch.       | MHz  |         |               |              |                     |                           |           |                            |
| 18900     | 1880 | 1RB-Mid | Rear          | 15           | 0.943               | 0.911                     | 1.04      | /                          |
| 18900     | 1880 | 1RB-Mid | Rear unfold   | 15           | 0.803               | 0.788                     | 1.02      | /                          |
| 18900     | 1880 | 1RB-Mid | Bottom        | 10           | 0.807               | 0.785                     | 1.03      | /                          |

**Table 15.5: SAR Measurement Variability for Head LTE B7 (1g)**

| Frequency |      | Mode    | Test Position | Original SAR (W/kg) | First Repeated SAR (W/kg) | The Ratio | Second Repeated SAR (W/kg) |
|-----------|------|---------|---------------|---------------------|---------------------------|-----------|----------------------------|
| Ch.       | MHz  |         |               |                     |                           |           |                            |
| 21350     | 2560 | 1RB-Mid | Right Cheek   | 0.925               | 0.905                     | 1.02      | /                          |

**Table 15.6: SAR Measurement Variability for Body LTE B7 (1g)**

| Frequency |      | Mode    | Test Position | Spacing (mm) | Original SAR (W/kg) | First Repeated SAR (W/kg) | The Ratio | Second Repeated SAR (W/kg) |
|-----------|------|---------|---------------|--------------|---------------------|---------------------------|-----------|----------------------------|
| Ch.       | MHz  |         |               |              |                     |                           |           |                            |
| 21350     | 2560 | 1RB-Mid | Rear          | 15           | 1.02                | 0.989                     | 1.03      | /                          |
| 21350     | 2560 | 1RB-Mid | Rear unfold   | 15           | 0.837               | 0.823                     | 1.02      | /                          |
| 21350     | 2560 | 1RB-Mid | Bottom        | 10           | 0.884               | 0.861                     | 1.03      | /                          |

**Table 15.7: SAR Measurement Variability for Body LTE B66 (1g)**

| Frequency |      | Mode    | Test Position | Spacing (mm) | Original SAR (W/kg) | First Repeated SAR (W/kg) | The Ratio | Second Repeated SAR (W/kg) |
|-----------|------|---------|---------------|--------------|---------------------|---------------------------|-----------|----------------------------|
| Ch.       | MHz  |         |               |              |                     |                           |           |                            |
| 132322    | 1745 | 1RB-Mid | Rear          | 15           | 0.985               | 0.954                     | 1.03      | /                          |
| 132322    | 1745 | 1RB-Mid | Bottom        | 10           | 0.882               | 0.856                     | 1.03      | /                          |

**Table 15.8: SAR Measurement Variability for Body LTE B41-PC3 (1g)**

| Frequency |        | Mode    | Test Position | Spacing (mm) | Original SAR (W/kg) | First Repeated SAR (W/kg) | The Ratio | Second Repeated SAR (W/kg) |
|-----------|--------|---------|---------------|--------------|---------------------|---------------------------|-----------|----------------------------|
| Ch.       | MHz    |         |               |              |                     |                           |           |                            |
| 41055     | 2636.5 | 1RB-Mid | Bottom        | 10           | 0.964               | 0.938                     | 1.03      | /                          |

## 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 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                         | RFambient 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 |          |

## 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, 2021         | One year     |
| 02  | Power meter           | NRP2          | 106276        | May 11, 2021             | One year     |
| 03  | Power sensor          | NRP6A         | 101369        |                          |              |
| 04  | Signal Generator      | E4438C        | MY49071430    | February 1, 2021         | One Year     |
| 05  | Amplifier             | 60S1G4        | 0331848       | No Calibration Requested |              |
| 06  | BTS                   | CMW500        | 159889        | January 13, 2021         | One year     |
| 07  | E-field Probe         | SPEAG EX3DV4  | 7548          | June 25, 2021            | One year     |
| 08  | DAE                   | SPEAG DAE4    | 1331          | September 1, 2021        | One year     |
| 09  | Dipole Validation Kit | SPEAG D750V3  | 1017          | July 12,,2021            | One year     |
| 10  | Dipole Validation Kit | SPEAG D835V2  | 4d069         | July 21,,2021            | One year     |
| 11  | Dipole Validation Kit | SPEAG D1750V2 | 1003          | July 12,,2021            | One year     |
| 12  | Dipole Validation Kit | SPEAG D1900V2 | 5d101         | July 15,2021             | One year     |
| 13  | Dipole Validation Kit | SPEAG D2450V2 | 853           | July 26,2021             | One year     |
| 14  | Dipole Validation Kit | SPEAG D2600V2 | 1012          | July 26,2021             | One year     |

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

## ANNEX A Graph Results

### GSM850\_CH190 Right Cheek

Date: 9/16/2021

Electronics: DAE4 Sn1331

Medium: head 835 MHz

Medium parameters used:  $f = 836.6$  MHz;  $\sigma = 0.903$  S/m;  $\epsilon_r = 45.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: GSM850 836.6 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

**Area Scan (81x151x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.565 W/kg

**Zoom Scan (7x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.711 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.677 W/kg

**SAR(1 g) = 0.460 W/kg; SAR(10 g) = 0.336 W/kg**

Maximum value of SAR (measured) = 0.601 W/kg

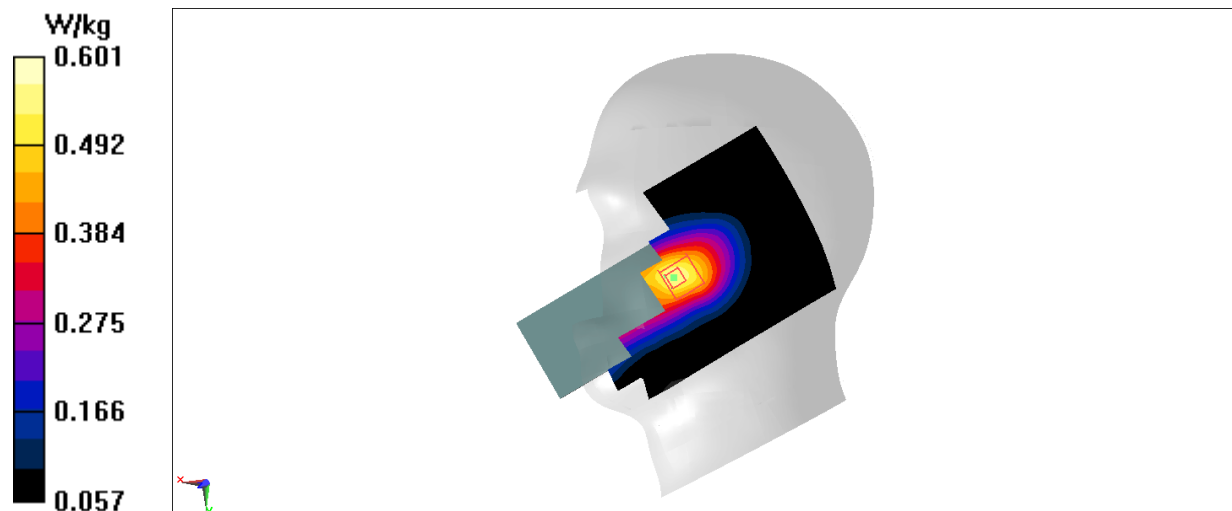


Fig A.1



### GSM850\_CH190 Rear 15mm

Date: 9/16/2021

Electronics: DAE4 Sn1331

Medium: head 835 MHz

Medium parameters used:  $f = 836.6$  MHz;  $\sigma = 0.876$  S/m;  $\epsilon_r = 43.881$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: GSM850 836.6 MHz Duty Cycle: 1:4

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

**Area Scan (81x131x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

Maximum value of SAR (interpolated) = 0.471 W/kg

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

Reference Value = 18.08 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.532 W/kg

**SAR(1 g) = 0.367 W/kg; SAR(10 g) = 0.265 W/kg**

Maximum value of SAR (measured) = 0.471 W/kg

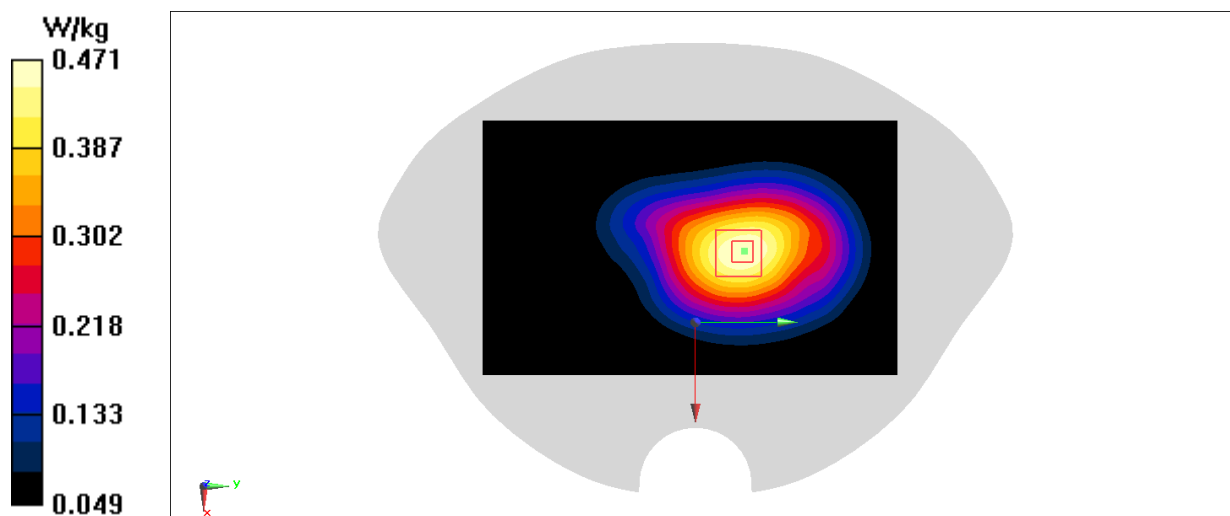


Fig A.2

### GSM850\_CH190 Rear 10mm

Date: 9/16/2021

Electronics: DAE4 Sn1331

Medium: head 835 MHz

Medium parameters used:  $f = 836.6$  MHz;  $\sigma = 0.876$  S/m;  $\epsilon_r = 43.881$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: GSM850 836.6 MHz Duty Cycle: 1:4

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

**Area Scan (81x131x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

Maximum value of SAR (interpolated) = 0.471 W/kg

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

Reference Value = 18.08 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.532 W/kg

**SAR(1 g) = 0.367 W/kg; SAR(10 g) = 0.265 W/kg**

Maximum value of SAR (measured) = 0.471 W/kg

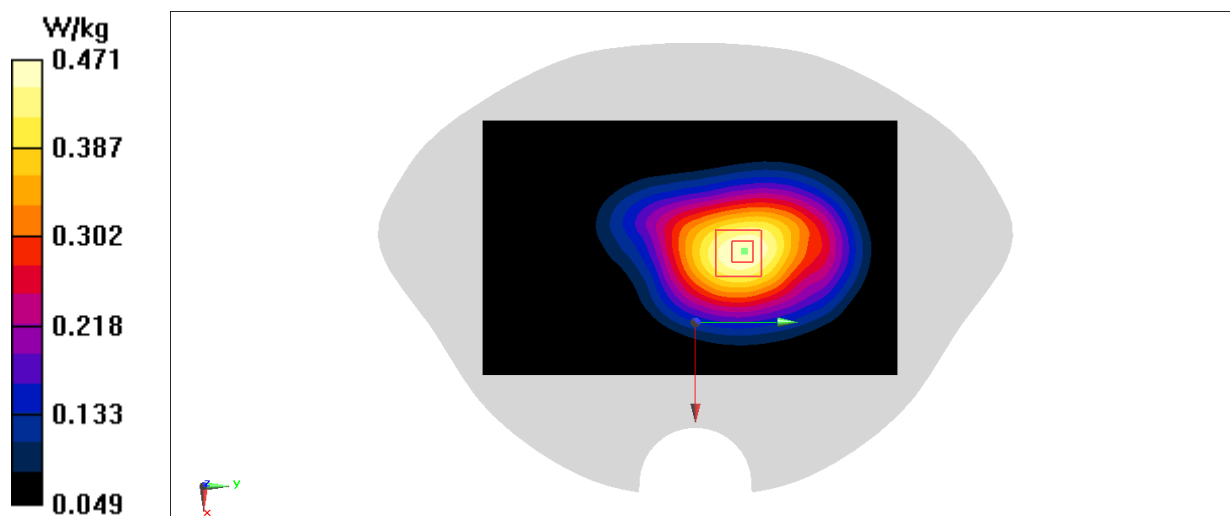


Fig A.3

### PCS1900\_CH661 Left Cheek

Date: 9/18/2021

Electronics: DAE4 Sn1331

Medium: head 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.486$  S/m;  $\epsilon_r = 42.803$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: PCS1900 1880 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

**Area Scan (81x151x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

Maximum value of SAR (interpolated) = 0.325 W/kg

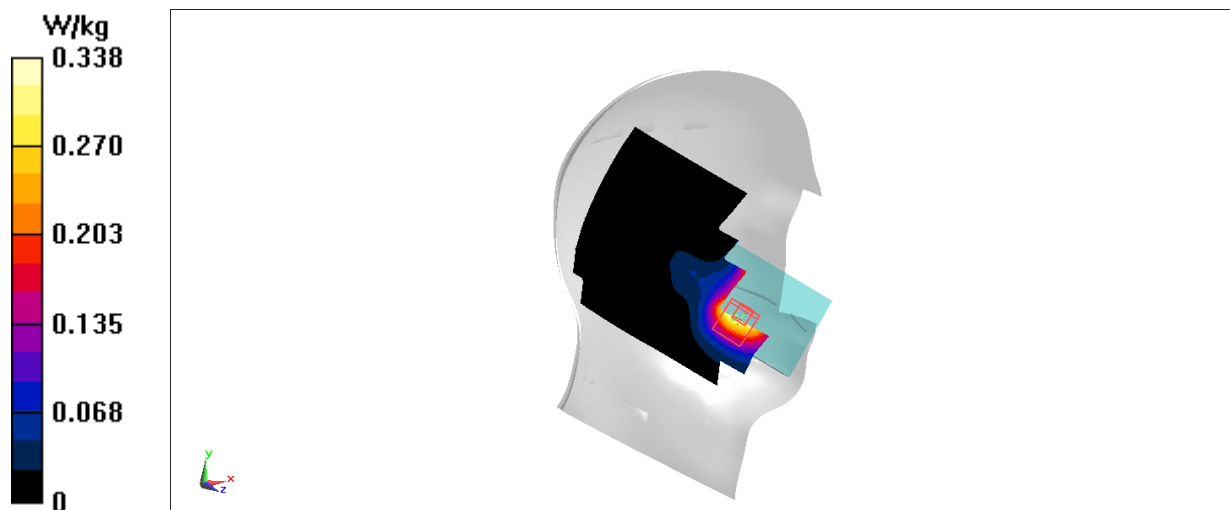
**Zoom Scan (7x8x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 0.7570 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.389 W/kg

**SAR(1 g) = 0.242 W/kg; SAR(10 g) = 0.135 W/kg**

Maximum value of SAR (measured) = 0.338 W/kg



**Fig A.4**

### PCS1900\_CH661 Rear 15mm

Date: 9/18/2021

Electronics: DAE4 Sn1331

Medium: head 1900 MHz

Medium parameters used:  $f = 1850.2$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 41.492$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: PCS1900 1850.2 MHz Duty Cycle: 1:4

Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

**Area Scan (81x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.527 W/kg

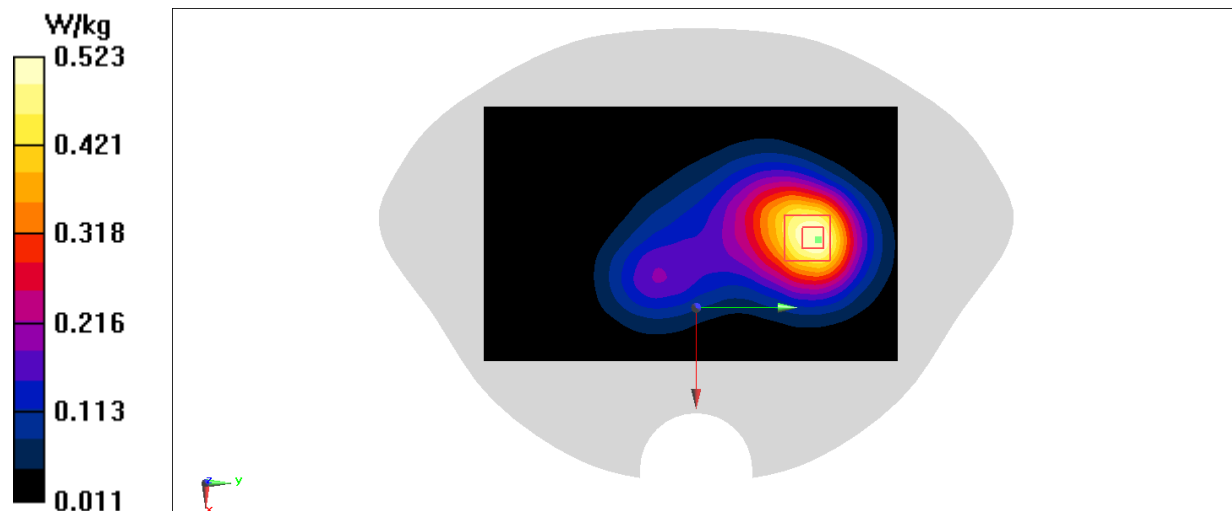
**Zoom Scan (7x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.516 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.616 W/kg

**SAR(1 g) = 0.372 W/kg; SAR(10 g) = 0.227 W/kg**

Maximum value of SAR (measured) = 0.523 W/kg



**Fig A.5**

### PCS1900\_CH512 Bottom 10mm

Date: 9/18/2021

Electronics: DAE4 Sn1331

Medium: head 1900 MHz

Medium parameters used:  $f = 1850.2$  MHz;  $\sigma = 1.388$  S/m;  $\epsilon_r = 41.334$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: PCS1900 1850.2 MHz Duty Cycle: 1:2.67

Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

**Area Scan (71x111x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

Maximum value of SAR (interpolated) = 1.45 W/kg

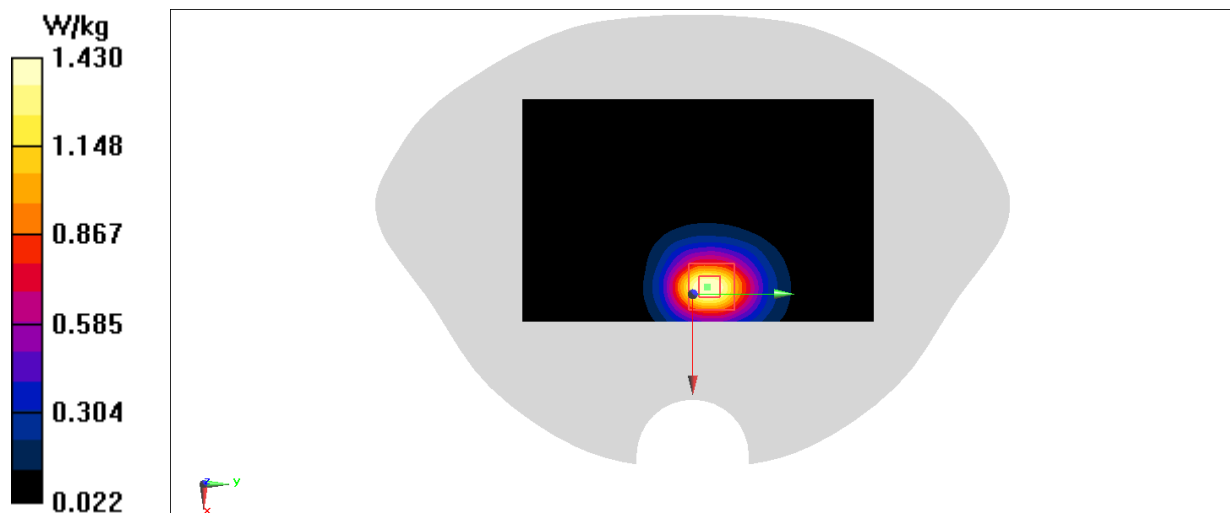
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 21.54 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.71 W/kg

**SAR(1 g) = 0.954 W/kg; SAR(10 g) = 0.519 W/kg**

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



**Fig A.6**

# WCDMA1900-BII\_CH9538 Left Cheek

Date: 9/18/2021

Electronics: DAE4 Sn1331

Medium: head 1900 MHz

Medium parameters used:  $f = 1907.6$  MHz;  $\sigma = 1.451$  S/m;  $\epsilon_r = 43.101$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA1900-BII 1907.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

**Area Scan (71x121x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

Maximum value of SAR (interpolated) = 0.276 W/kg

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

Reference Value = 2.593 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.295 W/kg

**SAR(1 g) = 0.193 W/kg; SAR(10 g) = 0.123 W/kg**

Maximum value of SAR (measured) = 0.260 W/kg

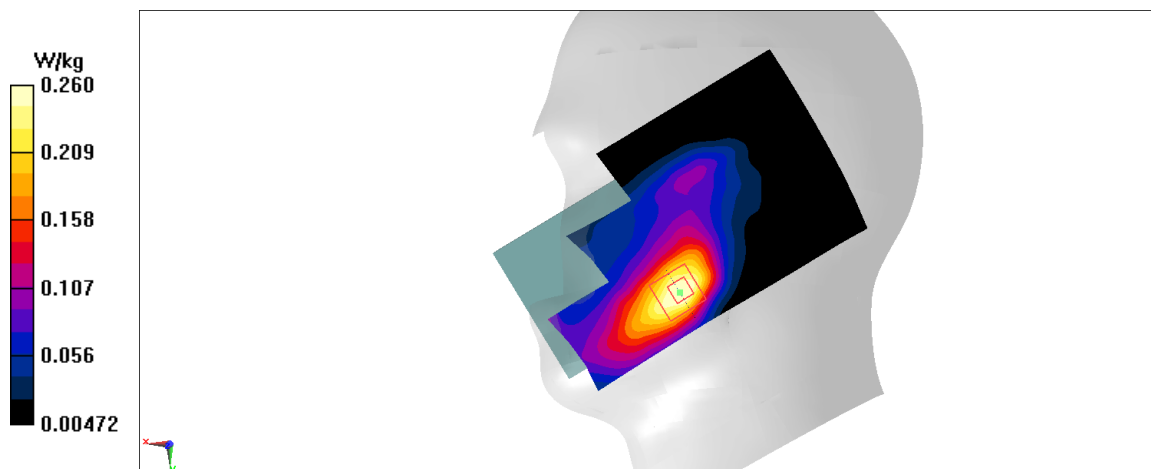


Fig A.7

# WCDMA1900-BII\_CH9262 Rear 15mm

Date: 9/18/2021

Electronics: DAE4 Sn1331

Medium: head 1900 MHz

Medium parameters used:  $f = 1852.4$  MHz;  $\sigma = 1.427$  mho/m;  $\epsilon_r = 42.674$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA1900-BII 1852.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

**Area Scan (81x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

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

Reference Value = 16.93 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.35 W/kg

**SAR(1 g) = 0.823 W/kg; SAR(10 g) = 0.505 W/kg**

Maximum value of SAR (measured) = 1.16 W/kg

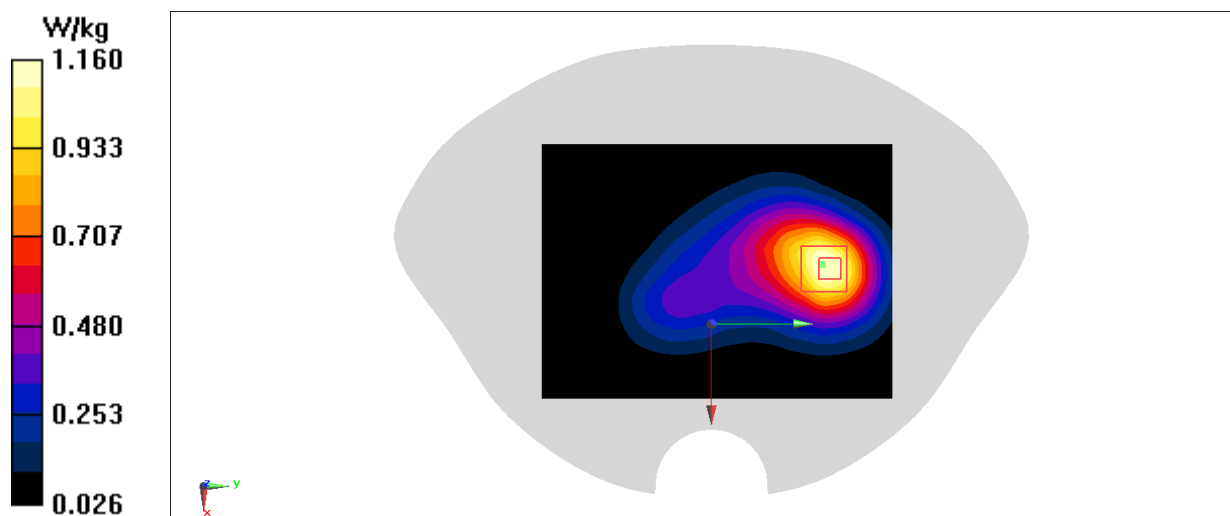


Fig A.8

# WCDMA1900-BII\_CH9262 Bottom 10mm

Date: 9/18/2021

Electronics: DAE4 Sn1331

Medium: head 1900 MHz

Medium parameters used:  $f = 1852.4$  MHz;  $\sigma = 1.436$  S/m;  $\epsilon_r = 42.001$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA1900-BII 1852.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

**Area Scan (71x131x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

Maximum value of SAR (interpolated) = 1.49 W/kg

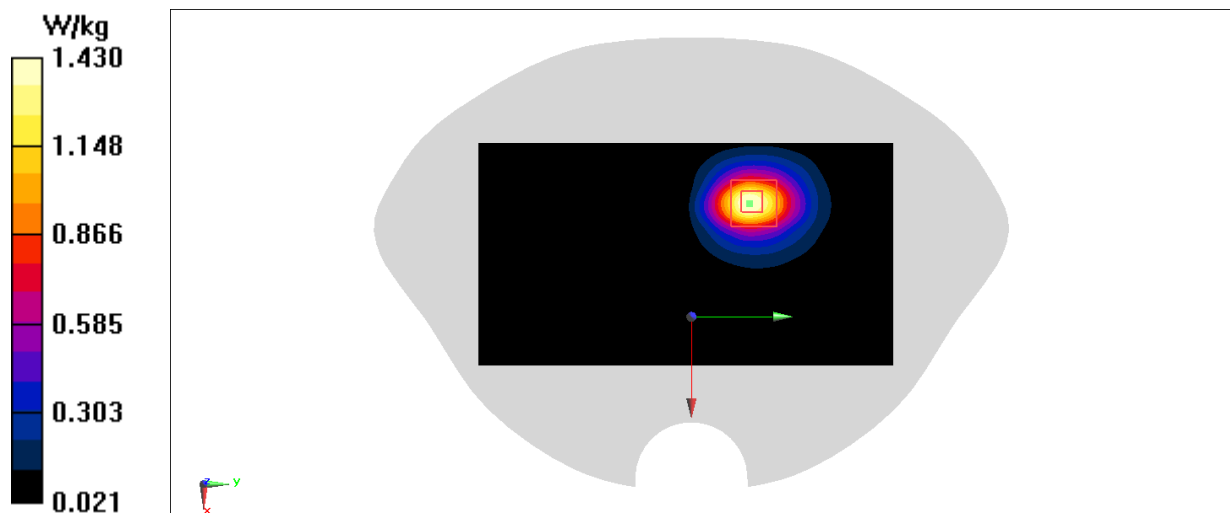
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 4.904 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.70 W/kg

**SAR(1 g) = 0.950 W/kg; SAR(10 g) = 0.519 W/kg**

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



**Fig A.9**



### WCDMA1700-BIV\_CH4183 Right Cheek

Date: 9/17/2021

Electronics: DAE4 Sn1331

Medium: head 1750 MHz

Medium parameters used:  $f = 1712.4$  MHz;  $\sigma = 1.311$  S/m;  $\epsilon_r = 41.526$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA1700-BIV 1712.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

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

Maximum value of SAR (interpolated) = 0.715 W/kg

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

Reference Value = 2.263 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.824 W/kg

**SAR(1 g) = 0.503 W/kg; SAR(10 g) = 0.301 W/kg**

Maximum value of SAR (measured) = 0.704 W/kg

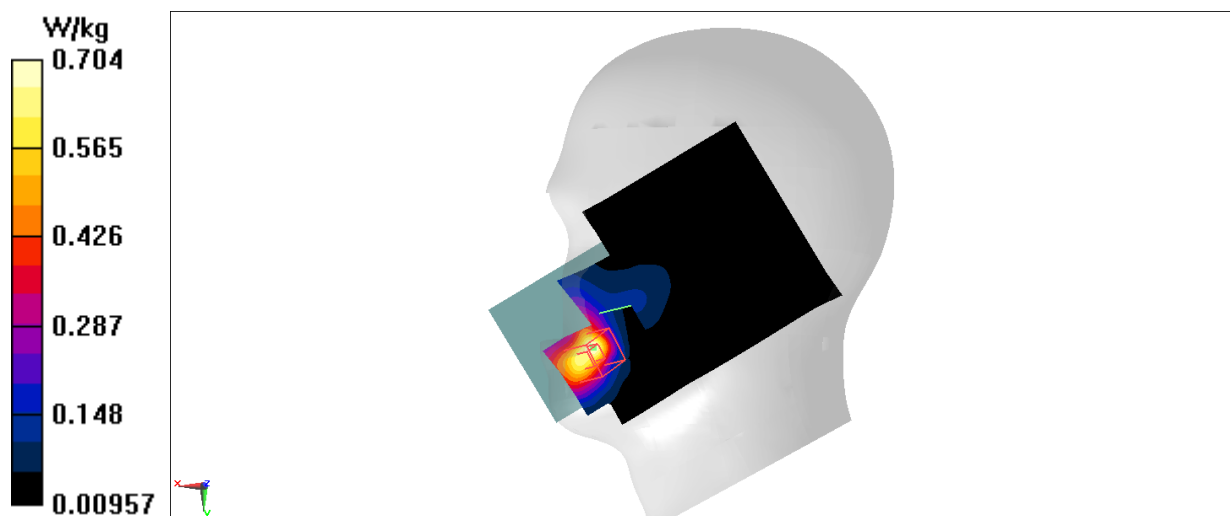


Fig A.10

# WCDMA1700-BIV\_CH1513 Rear 15mm

Date: 9/17/2021

Electronics: DAE4 Sn1331

Medium: head 1750 MHz

Medium parameters used:  $f = 1852.4$  MHz;  $\sigma = 1.469$  S/m;  $\epsilon_r = 42.857$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA1700-BIV 1852.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

**Area Scan (81x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

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

Reference Value = 16.93 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.35 W/kg

**SAR(1 g) = 0.823 W/kg; SAR(10 g) = 0.505 W/kg**

Maximum value of SAR (measured) = 1.16 W/kg

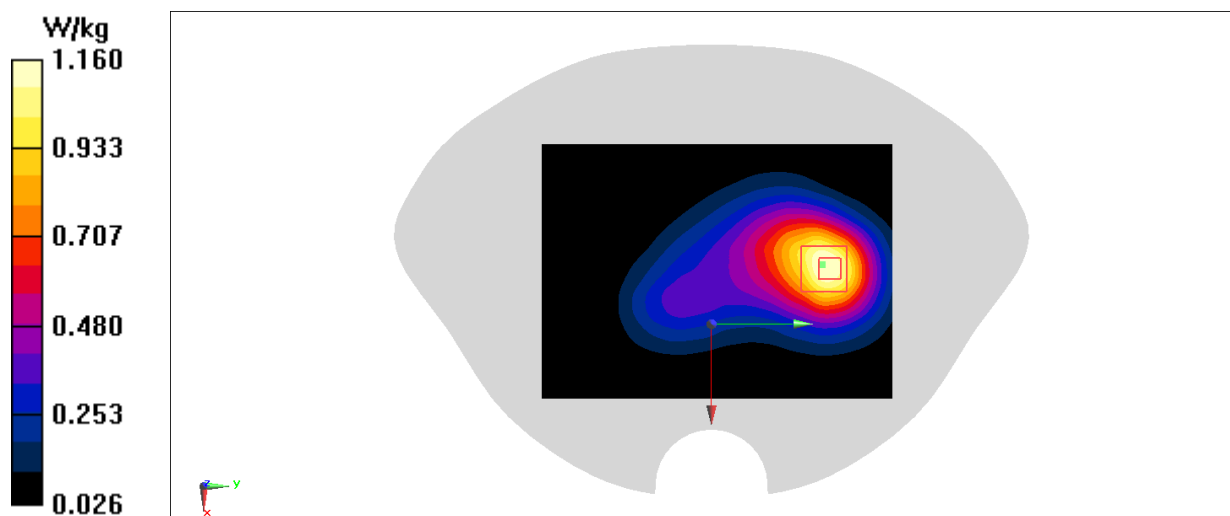


Fig A.11

# WCDMA1700-BIV\_CH1513 Bototm 10mm

Date: 9/17/2021

Electronics: DAE4 Sn1331

Medium: head 1750 MHz

Medium parameters used:  $f = 1752.6$  MHz;  $\sigma = 1.368$  S/m;  $\epsilon_r = 42.166$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA1700-BIV 1752.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

**Area Scan (71x131x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

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

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

Reference Value = 5.040 V/m; Power Drift = 0.31 dB

Peak SAR (extrapolated) = 1.58 W/kg

**SAR(1 g) = 0.886 W/kg; SAR(10 g) = 0.484 W/kg**

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

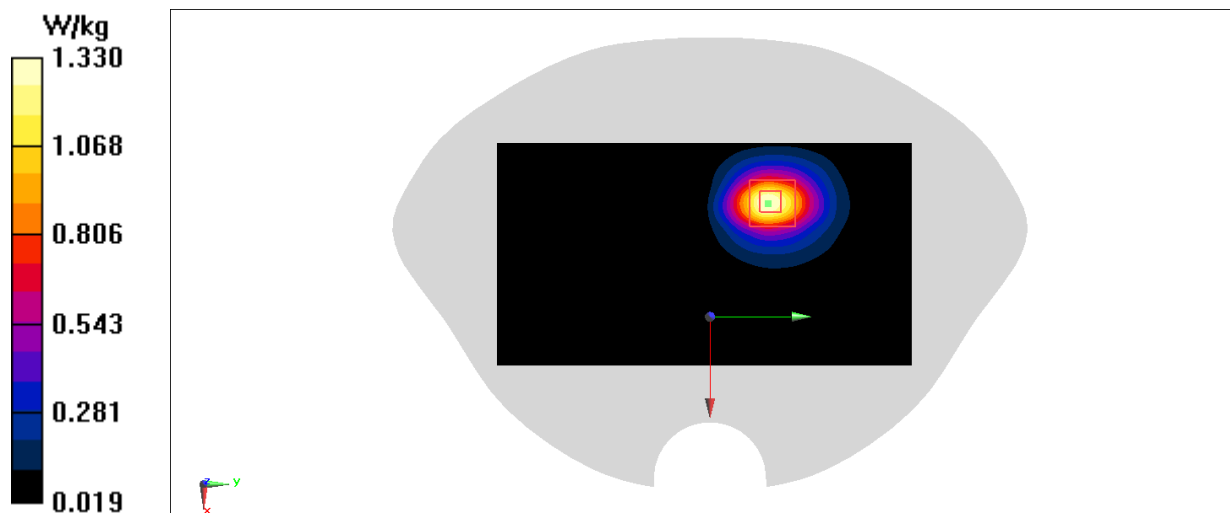


Fig A.12

### WCDMA850-BV\_CH4183 Right Cheek

Date: 9/16/2021

Electronics: DAE4 Sn1331

Medium: head 835 MHz

Medium parameters used:  $f = 836.6$  MHz;  $\sigma = 0.909$  S/m;  $\epsilon_r = 41.935$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA850-BV 836.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

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

Maximum value of SAR (interpolated) = 0.422 W/kg

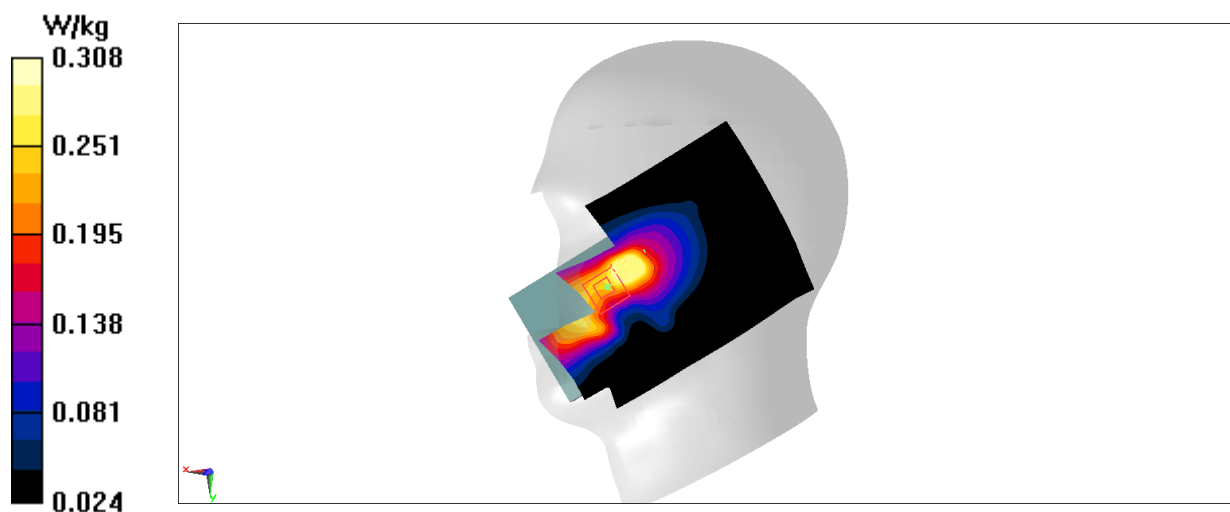
**Zoom Scan (8x11x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 3.835 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.348 W/kg

**SAR(1 g) = 0.210 W/kg; SAR(10 g) = 0.155 W/kg**

Maximum value of SAR (measured) = 0.308 W/kg



**Fig A.13**

# WCDMA850-BV\_CH4183 Rear 10mm

Date: 9/16/2021

Electronics: DAE4 Sn1331

Medium: head 835 MHz

Medium parameters used:  $f = 836.6$  MHz;  $\sigma = 0.909$  S/m;  $\epsilon_r = 41.935$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WCDMA850-BV 836.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

**Area Scan (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.450 W/kg

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

Reference Value = 21.18 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.807 W/kg

**SAR(1 g) = 0.418 W/kg; SAR(10 g) = 0.185 W/kg**

Maximum value of SAR (measured) = 0.431 W/kg

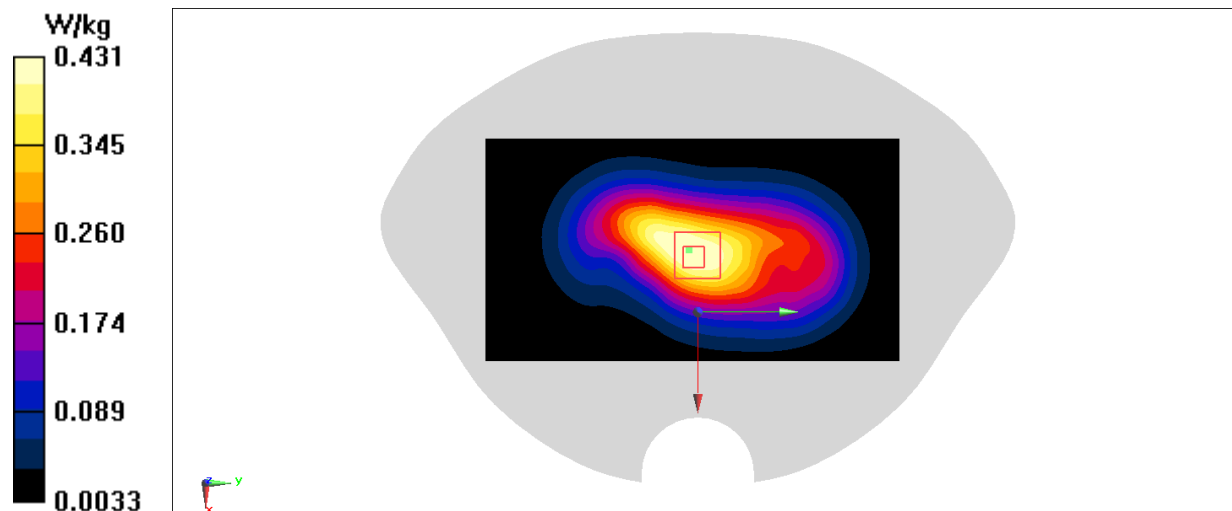


Fig A.14

### LTE1900-FDD2\_CH18900 Left Cheek

Date: 9/18/2021

Electronics: DAE4 Sn1331

Medium: head 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.455$  S/m;  $\epsilon_r = 41.951$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE1900-FDD2 1880 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.88, 7.88, 7.88)

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

Maximum value of SAR (interpolated) = 0.481 W/kg

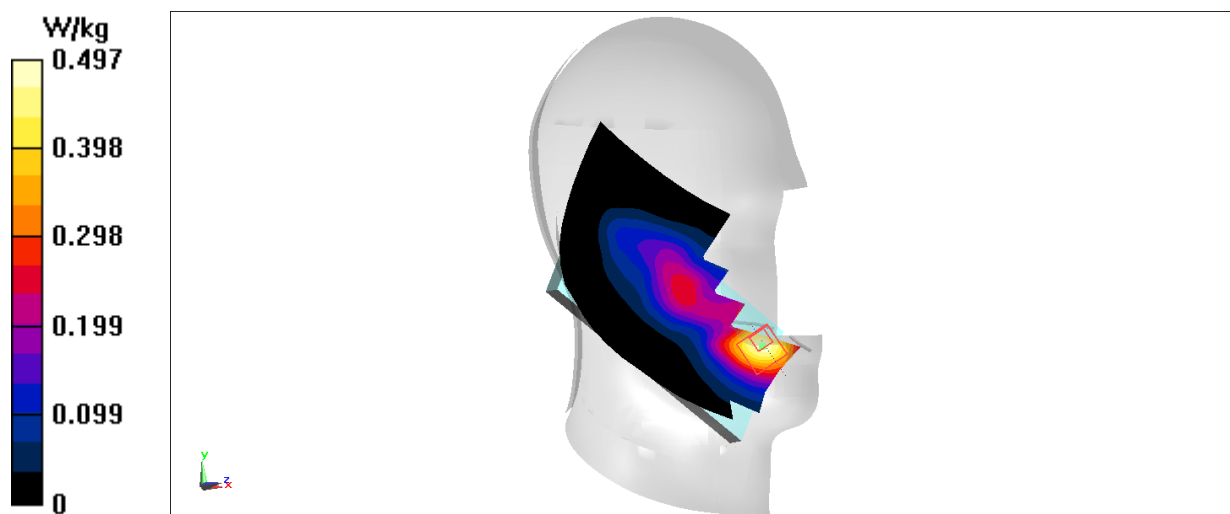
**Zoom Scan (6x6x7)/Cube 0:** Measurement grid:  $dx=8$ mm,  $dy=8$ mm,  $dz=5$ mm

Reference Value = 3.658 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.547 W/kg

**SAR(1 g) = 0.366 W/kg; SAR(10 g) = 0.209 W/kg**

Maximum value of SAR (measured) = 0.497 W/kg



**Fig A.15**

### LTE1900-FDD2\_CH18900 Rear 15mm

Date: 9/18/2021

Electronics: DAE4 Sn1331

Medium: head 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.455$  S/m;  $\epsilon_r = 41.951$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE1900-FDD2 1880 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.88, 7.88, 7.88)

**Area Scan (71x131x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

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

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

Reference Value = 19.18 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.58 W/kg

**SAR(1 g) = 0.943 W/kg; SAR(10 g) = 0.573 W/kg**

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

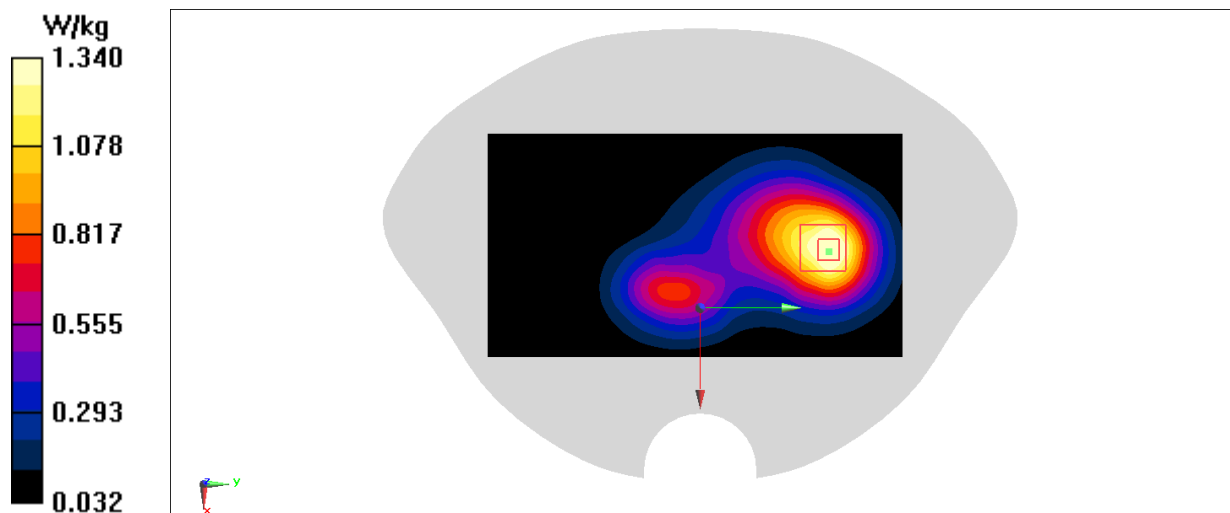


Fig A.16

### LTE1900-FDD2\_CH18900 Bottom 10mm

Date: 9/18/2021

Electronics: DAE4 Sn1331

Medium: head 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.455$  S/m;  $\epsilon_r = 41.951$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE1900-FDD2 1880 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.88, 7.88, 7.88)

**Area Scan (41x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 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 = 9.753 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.55 W/kg

**SAR(1 g) = 0.807 W/kg; SAR(10 g) = 0.424 W/kg**

Maximum value of SAR (measured) = 1.28 W/kg

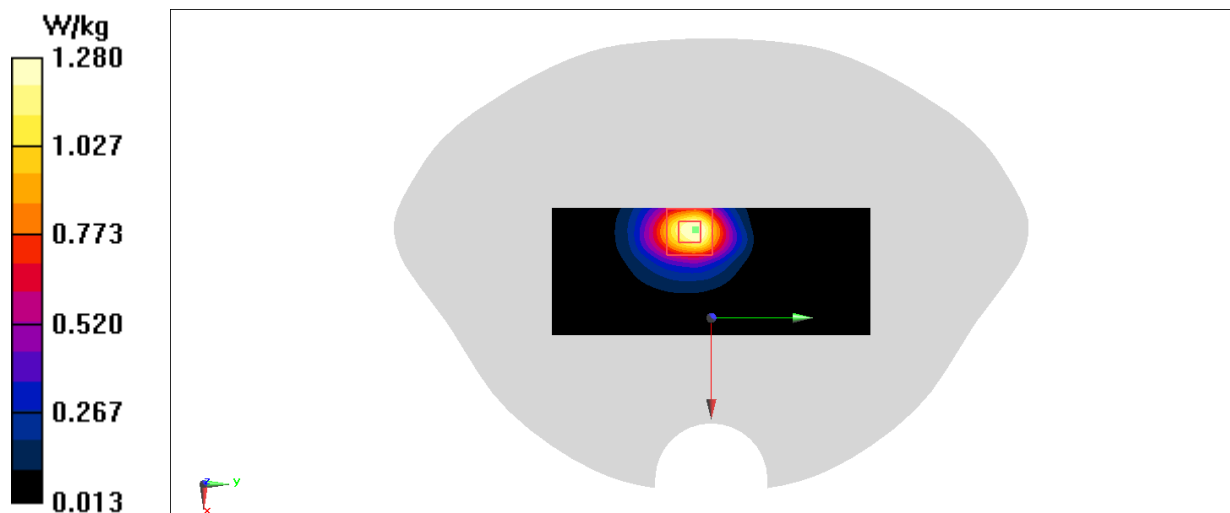


Fig A.17



### LTE850-FDD5\_CH20600 Left Cheek

Date: 9/16/2021

Electronics: DAE4 Sn1331

Medium: head 835 MHz

Medium parameters used:  $f = 844$  MHz;  $\sigma = 0.912$  S/m;  $\epsilon_r = 44.472$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE850-FDD5 844 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

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

Maximum value of SAR (interpolated) = 0.596 W/kg

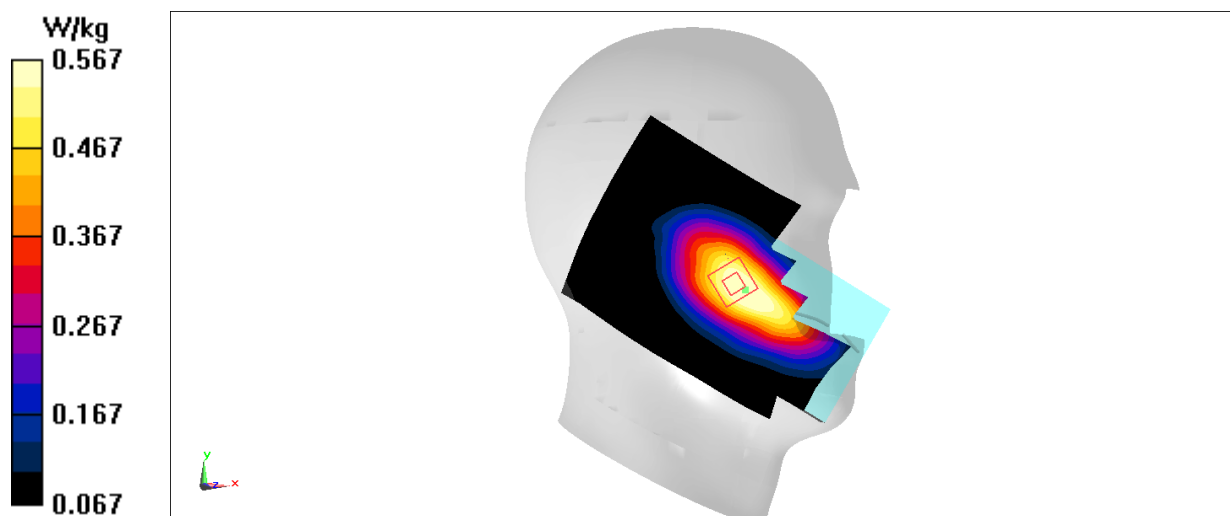
**Zoom Scan (6x6x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.229 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.629 W/kg

**SAR(1 g) = 0.476 W/kg; SAR(10 g) = 0.360 W/kg**

Maximum value of SAR (measured) = 0.567 W/kg



**Fig A.18**

### LTE850-FDD5\_CH20600 Rear 10mm

Date: 9/16/2021

Electronics: DAE4 Sn1331

Medium: head 835 MHz

Medium parameters used:  $f = 844$  MHz;  $\sigma = 0.912$  S/m;  $\epsilon_r = 44.472$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE850-FDD5 844 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

**Area Scan (81x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.835 W/kg

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

Reference Value = 25.42 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.889 W/kg

**SAR(1 g) = 0.612 W/kg; SAR(10 g) = 0.436 W/kg**

Maximum value of SAR (measured) = 0.782 W/kg

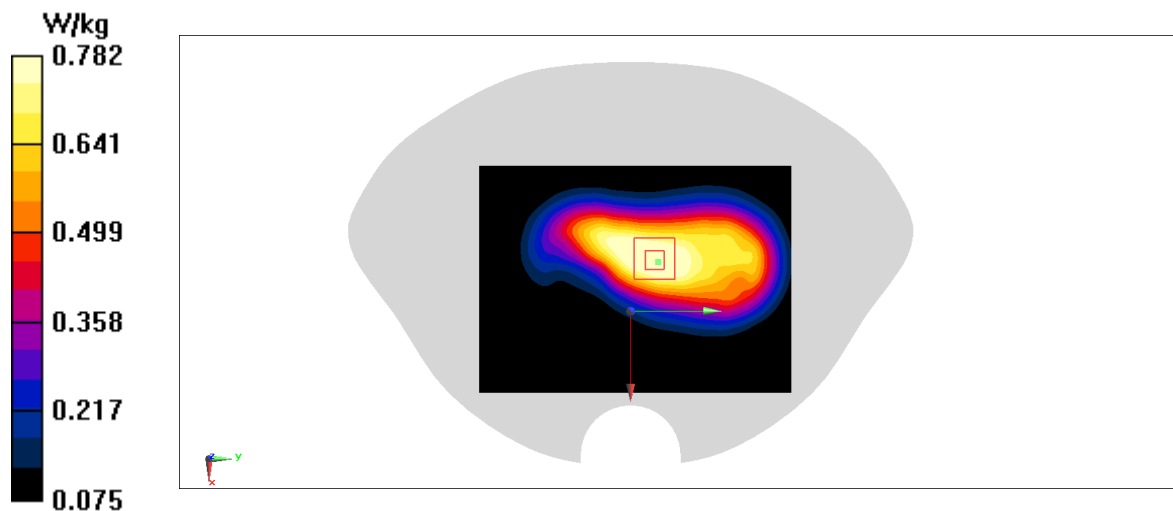


Fig A.19

### LTE2500-FDD7\_CH21350 Right Cheek

Date: 9/20/2021

Electronics: DAE4 Sn1331

Medium: head 2600 MHz

Medium parameters used:  $f = 2560$  MHz;  $\sigma = 1.928$  S/m;  $\epsilon_r = 40.254$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE2500-FDD7 2560 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.11, 7.11, 7.11)

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

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

**Zoom Scan (8x7x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 5.392 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 2.06 W/kg

**SAR(1 g) = 0.925 W/kg; SAR(10 g) = 0.383 W/kg**

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

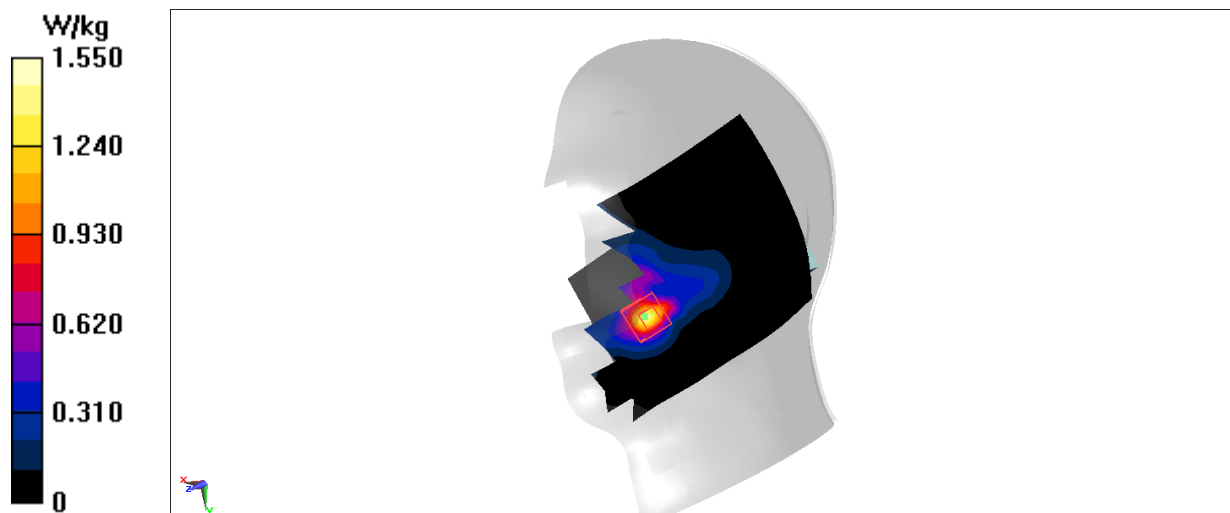


Fig A.20

# LTE2500-FDD7\_CH21350 Rear 15mm

Date: 9/20/2021

Electronics: DAE4 Sn1331

Medium: head 2600 MHz

Medium parameters used:  $f = 2560$  MHz;  $\sigma = 1.928$  S/m;  $\epsilon_r = 40.254$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE2500-FDD7 2560 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.11, 7.11, 7.11)

**Area Scan (101x141x1):** Interpolated grid:  $dx=1.200$  mm,  $dy=1.200$  mm

Maximum value of SAR (interpolated) = 1.74 W/kg

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

Reference Value = 10.67 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.90 W/kg

**SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.562 W/kg**

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

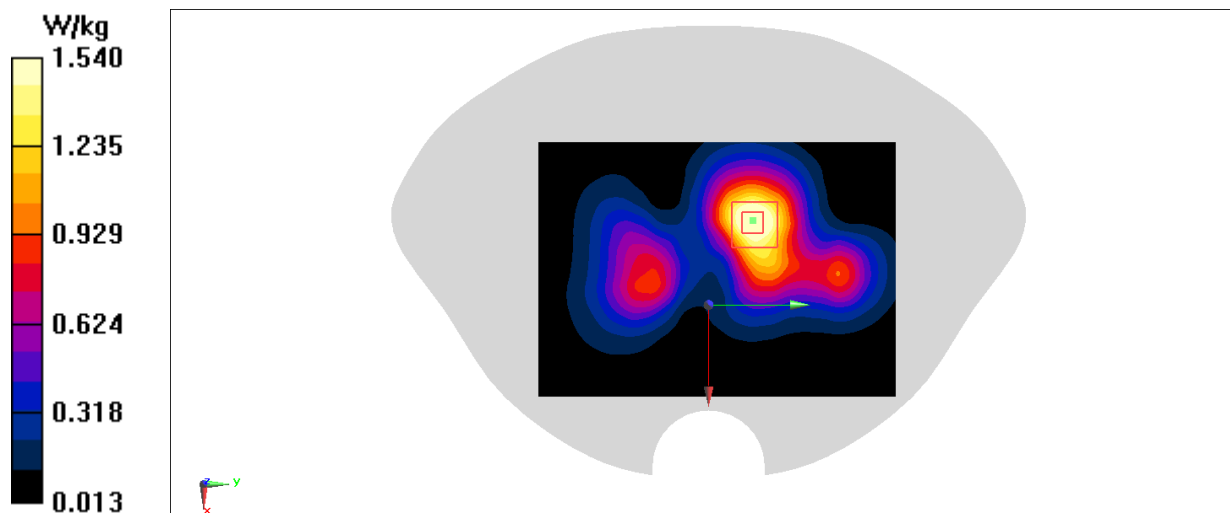


Fig A.21

### LTE2500-FDD7\_CH21350 Bottom 10mm

Date: 9/20/2021

Electronics: DAE4 Sn1331

Medium: head 2600 MHz

Medium parameters used:  $f = 2560$  MHz;  $\sigma = 1.928$  S/m;  $\epsilon_r = 40.254$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE2500-FDD7 2560 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.11, 7.11, 7.11)

**Area Scan (51x121x1):** Interpolated grid:  $dx=1.200$  mm,  $dy=1.200$  mm

Maximum value of SAR (interpolated) = 1.57 W/kg

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

Reference Value = 10.35 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 1.84 W/kg

**SAR(1 g) = 0.884 W/kg; SAR(10 g) = 0.397 W/kg**

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

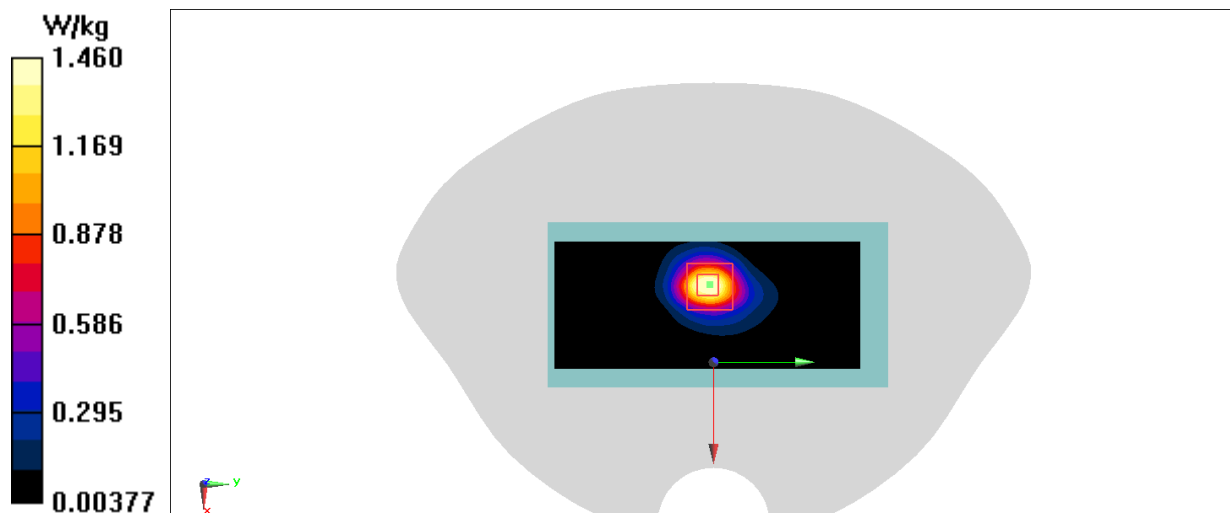


Fig A.22

### LTE700-FDD12\_CH23095 Left Cheek

Date: 9/15/2021

Electronics: DAE4 Sn1331

Medium: head 750 MHz

Medium parameters used:  $f = 707.5$  MHz;  $\sigma = 0.857$  S/m;  $\epsilon_r = 44.965$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE700-FDD12 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

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

Maximum value of SAR (interpolated) = 0.457 W/kg

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

Reference Value = 5.322 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.596 W/kg

**SAR(1 g) = 0.361 W/kg; SAR(10 g) = 0.249 W/kg**

Maximum value of SAR (measured) = 0.500 W/kg

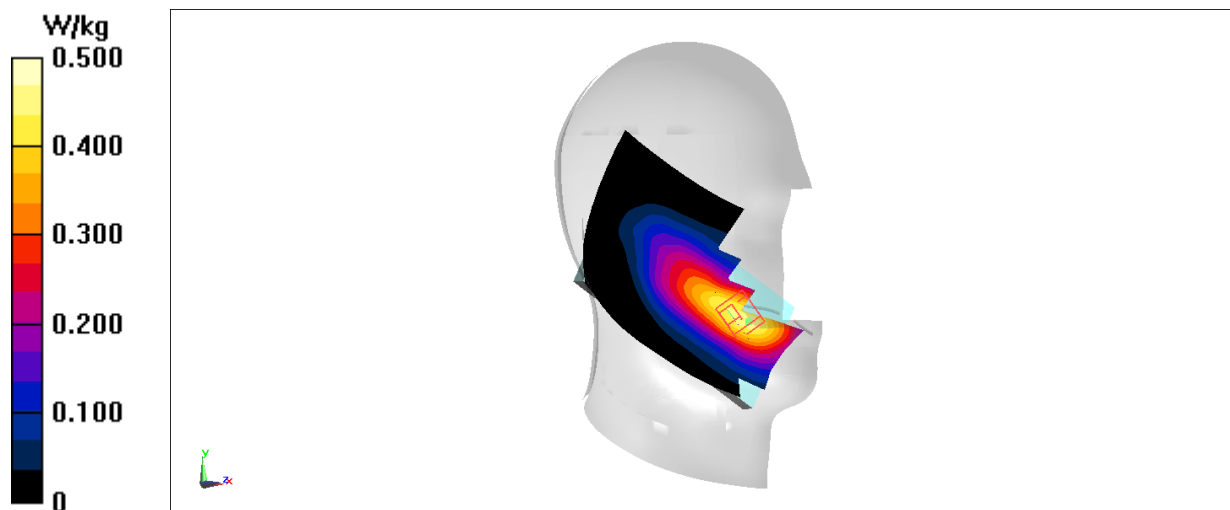


Fig A.23

# **LTE700-FDD12\_CH23095 Rear 10mm**

Date: 9/15/2021

Electronics: DAE4 Sn1331

Medium: head 750 MHz

Medium parameters used:  $f = 707.5$  MHz;  $\sigma = 0.857$  S/m;  $\epsilon_r = 44.965$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE700-FDD12 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

**Area Scan (71x141x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.780 W/kg

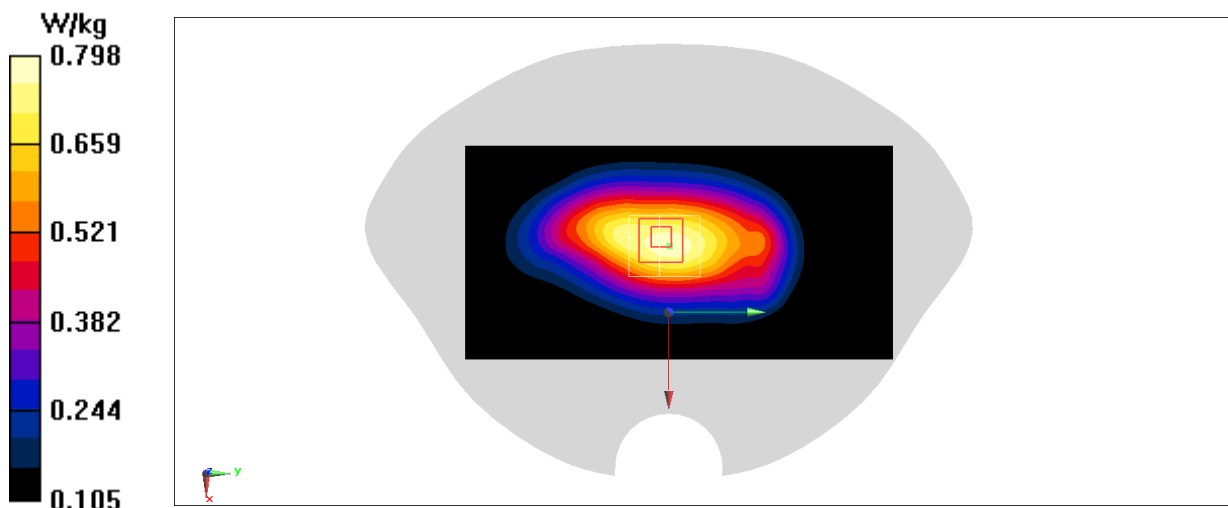
**Zoom Scan (7x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 25.22 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.904 W/kg

**SAR(1 g) = 0.612 W/kg; SAR(10 g) = 0.448 W/kg**

Maximum value of SAR (measured) = 0.798 W/kg



**Fig A.24**

### LTE750-FDD13\_CH23230 Left Cheek

Date: 9/15/2021

Electronics: DAE4 Sn1331

Medium: head 750 MHz

Medium parameters used:  $f = 782 \text{ MHz}$ ;  $\sigma = 0.886 \text{ S/m}$ ;  $\epsilon_r = 44.666$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.9^\circ\text{C}$ , Liquid Temperature:  $22.5^\circ\text{C}$

Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

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

Maximum value of SAR (interpolated) =  $0.390 \text{ W/kg}$

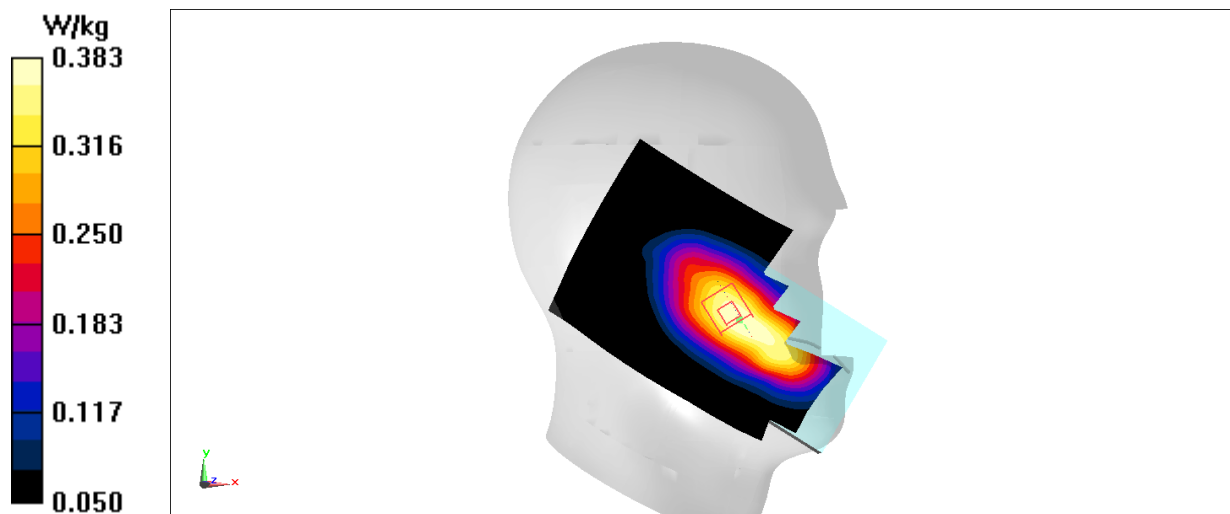
**Zoom Scan (6x6x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $5.690 \text{ V/m}$ ; Power Drift =  $0.06 \text{ dB}$

Peak SAR (extrapolated) =  $0.431 \text{ W/kg}$

**SAR(1 g) =  $0.315 \text{ W/kg}$ ; SAR(10 g) =  $0.238 \text{ W/kg}$**

Maximum value of SAR (measured) =  $0.383 \text{ W/kg}$



**Fig A.25**



### LTE750-FDD13\_CH23230 Rear 10mm

Date: 9/15/2021

Electronics: DAE4 Sn1331

Medium: head 750 MHz

Medium parameters used:  $f = 782 \text{ MHz}$ ;  $\sigma = 0.886 \text{ S/m}$ ;  $\epsilon_r = 44.666$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.9^\circ\text{C}$ , Liquid Temperature:  $22.5^\circ\text{C}$

Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

**Area Scan (81x111x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) =  $0.794 \text{ W/kg}$

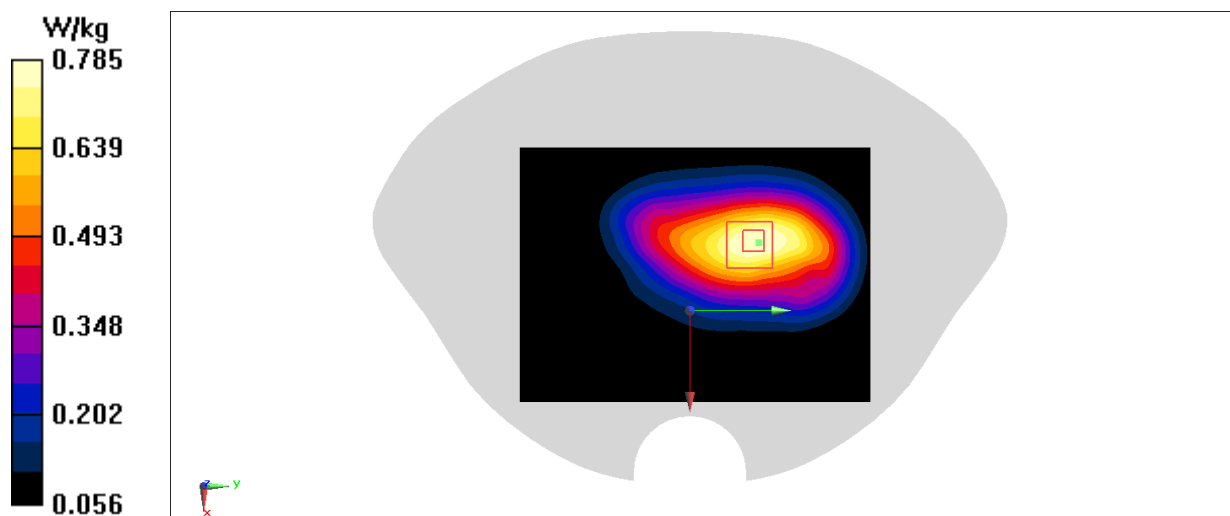
**Zoom Scan (7x8x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $22.49 \text{ V/m}$ ; Power Drift =  $-0.02 \text{ dB}$

Peak SAR (extrapolated) =  $0.913 \text{ W/kg}$

**SAR(1 g) =  $0.594 \text{ W/kg}$ ; SAR(10 g) =  $0.411 \text{ W/kg}$**

Maximum value of SAR (measured) =  $0.785 \text{ W/kg}$



**Fig A.26**

### LTE2500-TDD41 PC3\_CH40620 Left Cheek

Date: 9/20/2021

Electronics: DAE4 Sn1331

Medium: head 2600 MHz

Medium parameters used:  $f = 2593$  MHz;  $\sigma = 1.954$  S/m;  $\epsilon_r = 40.178$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE2500-TDD41 2593 MHz Duty Cycle: 1:1.58

Probe: EX3DV4 – SN7548 ConvF(7.11,7.11, 7.11)

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

Maximum value of SAR (interpolated) = 0.775 W/kg

**Zoom Scan (8x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.049 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.21 W/kg

**SAR(1 g) = 0.510 W/kg; SAR(10 g) = 0.208 W/kg**

Maximum value of SAR (measured) = 0.915 W/kg

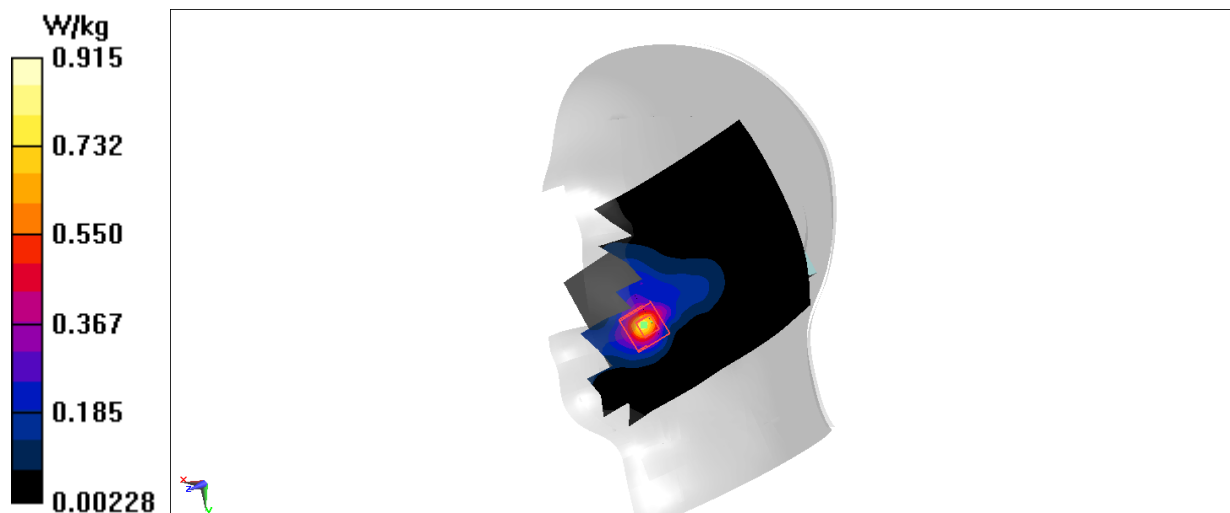


Fig A.27

# LTE2500-TDD41 PC3\_CH40620 Rear 15mm

Date: 9/20/2021

Electronics: DAE4 Sn1331

Medium: head 2600 MHz

Medium parameters used:  $f = 2593$  MHz;  $\sigma = 1.954$  S/m;  $\epsilon_r = 40.178$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE2500-TDD41 2593 MHz Duty Cycle: 1:1.58

Probe: EX3DV4 – SN7548 ConvF(7.11,7.11, 7.11)

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

Maximum value of SAR (interpolated) = 0.793 W/kg

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

Reference Value = 10.36 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.992 W/kg

**SAR(1 g) = 0.524 W/kg; SAR(10 g) = 0.284 W/kg**

Maximum value of SAR (measured) = 0.814 W/kg

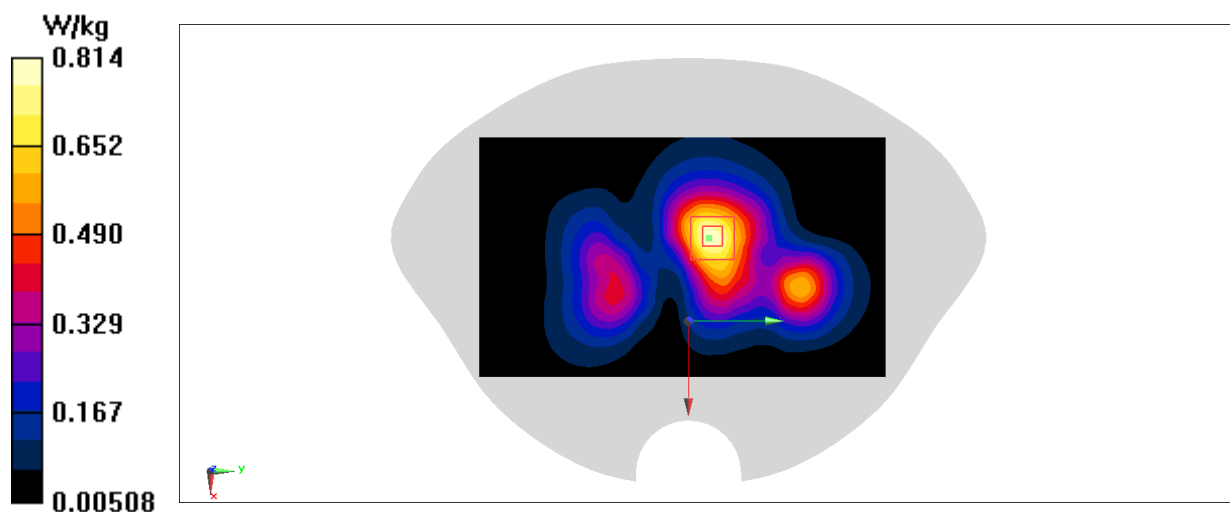


Fig A.28

# LTE2500-TDD41 PC3\_CH41055 Bottom 10mm

Date: 9/20/2021

Electronics: DAE4 Sn1331

Medium: head 2600 MHz

Medium parameters used:  $f = 2636.5$  MHz;  $\sigma = 2.01$  S/m;  $\epsilon_r = 39.994$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE2500-TDD41 2636.5 MHz Duty Cycle: 1:1.58

Probe: EX3DV4 – SN7548 ConvF(7.11,7.11, 7.11)

**Area Scan (91x91x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.60 W/kg

**Zoom Scan (7x7x5)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.85 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 2.12 W/kg

**SAR(1 g) = 0.964 W/kg; SAR(10 g) = 0.425 W/kg**

Maximum value of SAR (measured) = 1.67 W/kg

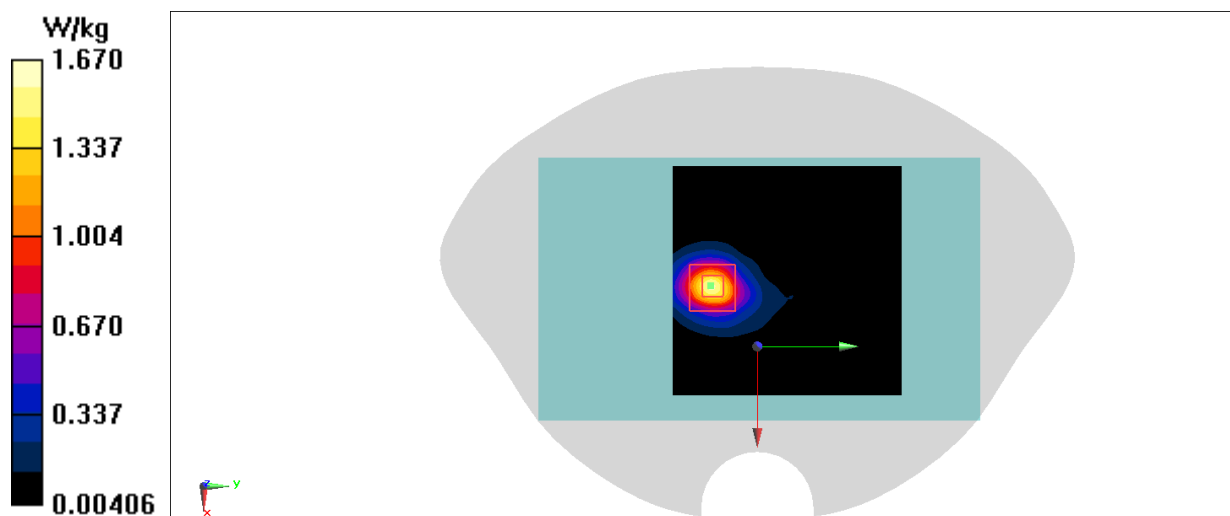


Fig A.29

### LTE2500-TDD41 PC2\_CH40620 Left Cheek

Date: 9/20/2021

Electronics: DAE4 Sn1331

Medium: head 2600 MHz

Medium parameters used:  $f = 2593$  MHz;  $\sigma = 1.957$  S/m;  $\epsilon_r = 41.721$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE2500-TDD41 2593 MHz Duty Cycle: 1: 2.37

Probe: EX3DV4 – SN7548 ConvF(7.11,7.11,7.11)

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

Maximum value of SAR (interpolated) = 0.921 W/kg

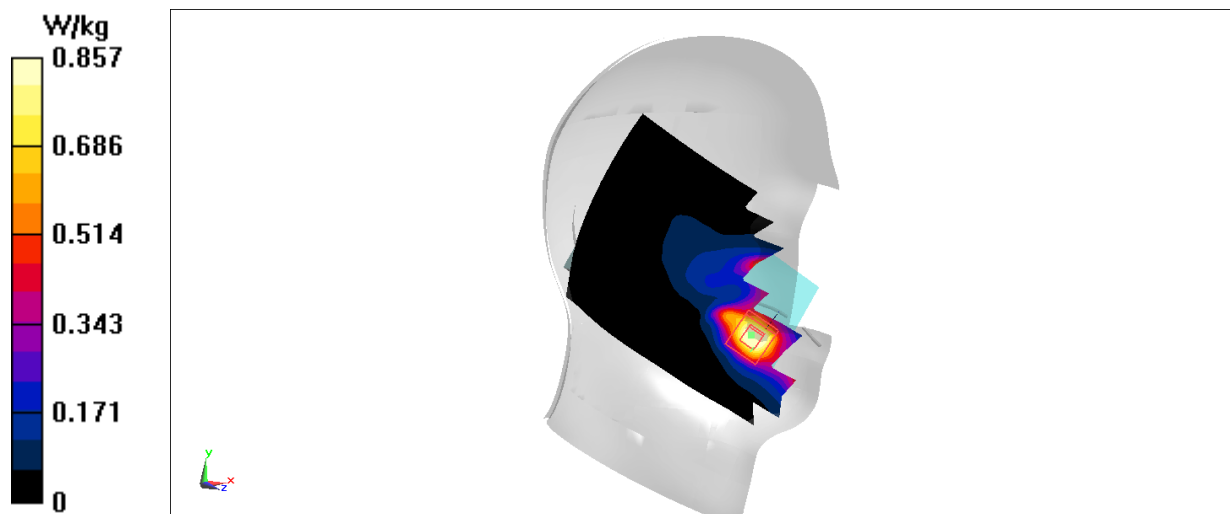
**Zoom Scan (8x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.507 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 1.09 W/kg

**SAR(1 g) = 0.572 W/kg; SAR(10 g) = 0.283 W/kg**

Maximum value of SAR (measured) = 0.857 W/kg



**Fig A.30**

# LTE2500-TDD41 PC2\_CH40620 Rear 15mm

Date: 9/20/2021

Electronics: DAE4 Sn1331

Medium: head 2600 MHz

Medium parameters used:  $f = 2593$  MHz;  $\sigma = 1.957$  S/m;  $\epsilon_r = 41.721$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE2500-TDD41 2593 MHz Duty Cycle: 1: 2.37

Probe: EX3DV4 – SN7548 ConvF(7.11,7.11,7.11)

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

Maximum value of SAR (interpolated) = 0.697 W/kg

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

Reference Value = 11.03 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.872 W/kg

**SAR(1 g) = 0.466 W/kg; SAR(10 g) = 0.261 W/kg**

Maximum value of SAR (measured) = 0.715 W/kg

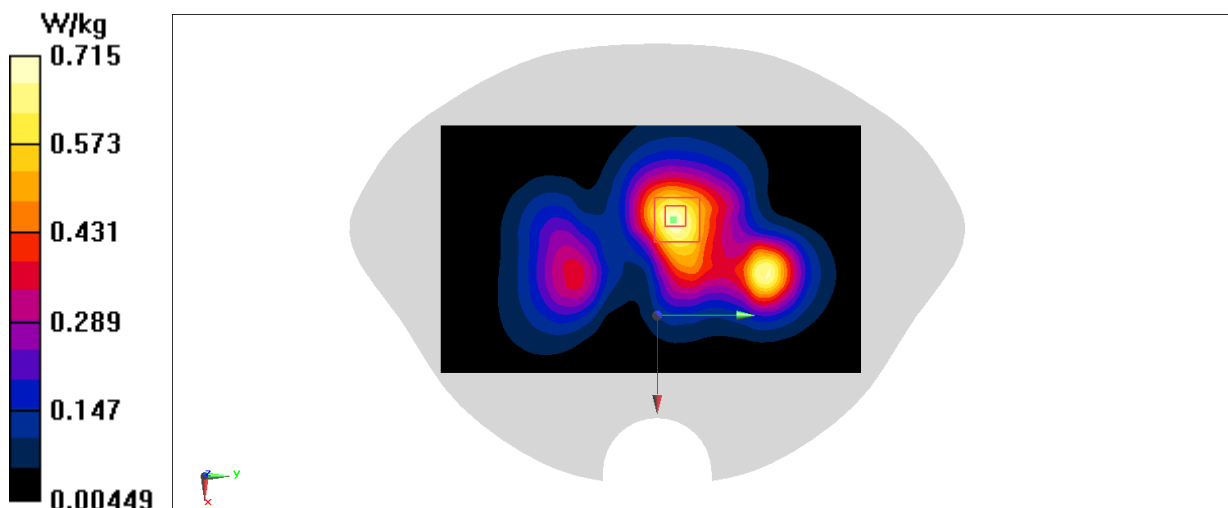


Fig A.31

# LTE2500-TDD41 PC2\_CH40620 Bottom 10mm

Date: 9/20/2021

Electronics: DAE4 Sn1331

Medium: head 2600 MHz

Medium parameters used:  $f = 2593$  MHz;  $\sigma = 1.957$  S/m;  $\epsilon_r = 41.721$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE2500-TDD41 2593 MHz Duty Cycle: 1:2.37

Probe: EX3DV4 – SN7548 ConvF(7.11,7.11,7.11)

**Area Scan (51x121x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.974 W/kg

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

Reference Value = 14.09 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.13 W/kg

**SAR(1 g) = 0.532 W/kg; SAR(10 g) = 0.239 W/kg**

Maximum value of SAR (measured) = 0.901 W/kg

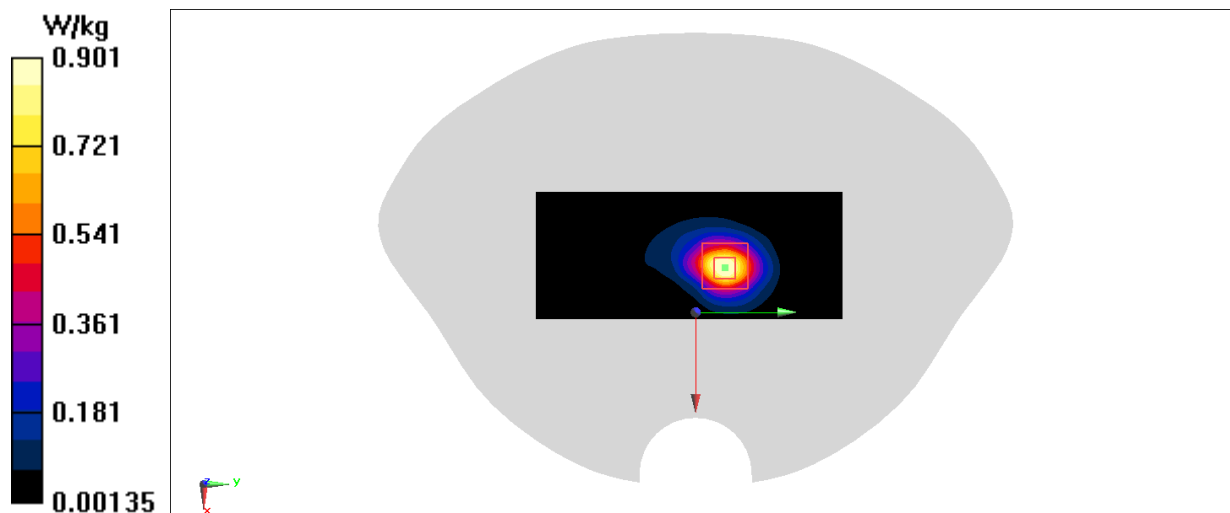


Fig A.32

### LTE1700-FDD66\_CH132072 Right Cheek

Date: 9/17/2021

Electronics: DAE4 Sn1331

Medium: head 1750 MHz

Medium parameters used:  $f = 1720$  MHz;  $\sigma = 1.349$  S/m;  $\epsilon_r = 42.196$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE1700-FDD66 1720 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

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

Maximum value of SAR (interpolated) = 0.622 W/kg

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

Reference Value = 0.9440 V/m; Power Drift = 5.26 dB

Peak SAR (extrapolated) = 0.643 W/kg

**SAR(1 g) = 0.386 W/kg; SAR(10 g) = 0.232 W/kg**

Maximum value of SAR (measured) = 0.550 W/kg

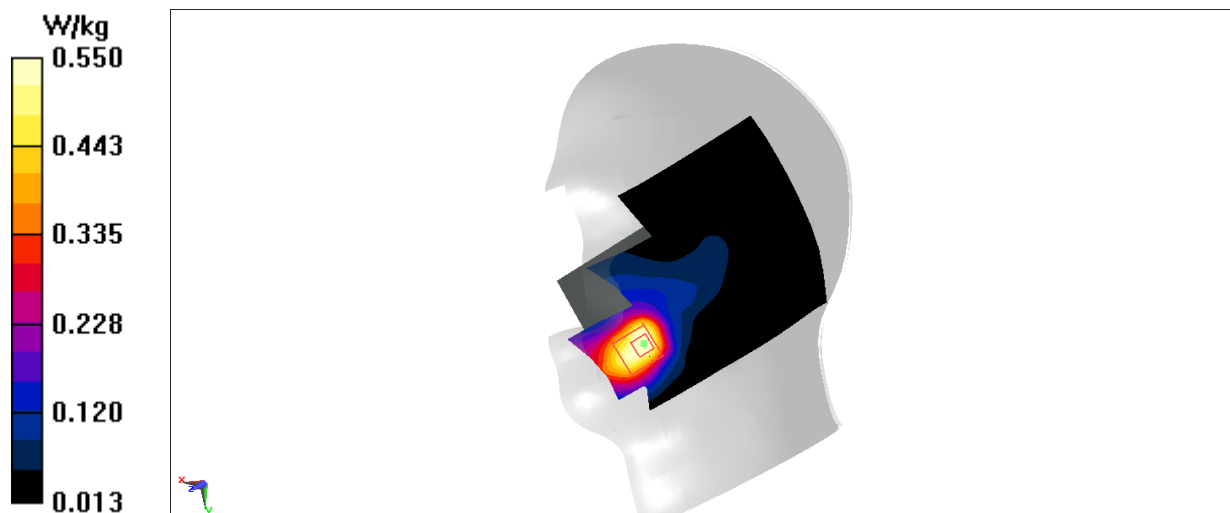


Fig A.33



# **LTE1700-FDD66\_CH132322 Rear 15mm**

Date: 9/17/2021

Electronics: DAE4 Sn1331

Medium: head 1750 MHz

Medium parameters used:  $f = 1720$  MHz;  $\sigma = 1.349$  S/m;  $\epsilon_r = 42.196$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE1700-FDD66 1720 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

**Area Scan (81x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

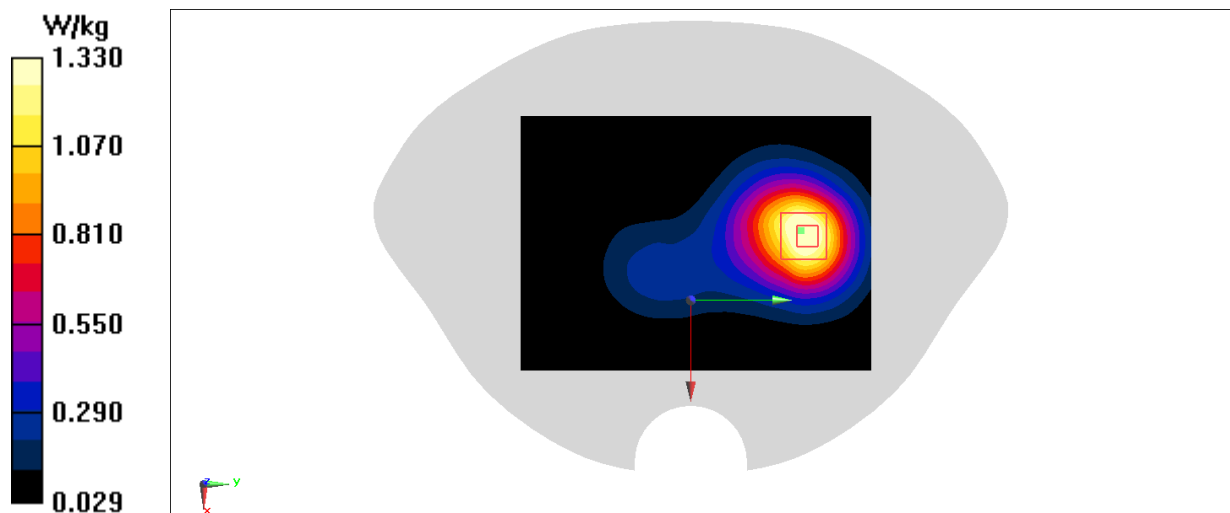
**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.28 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.61 W/kg

**SAR(1 g) = 0.985 W/kg; SAR(10 g) = 0.609 W/kg**

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



**Fig A.34**

### LTE1700-FDD66\_CH132322 Bottom 10mm

Date: 9/17/2021

Electronics: DAE4 Sn1331

Medium: head 1750 MHz

Medium parameters used:  $f = 1720$  MHz;  $\sigma = 1.349$  S/m;  $\epsilon_r = 42.196$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE1700-FDD66 1720 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

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

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

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

Reference Value = 9.324 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.59 W/kg

**SAR(1 g) = 0.882 W/kg; SAR(10 g) = 0.477 W/kg**

Maximum value of SAR (measured) = 1.32 W/kg

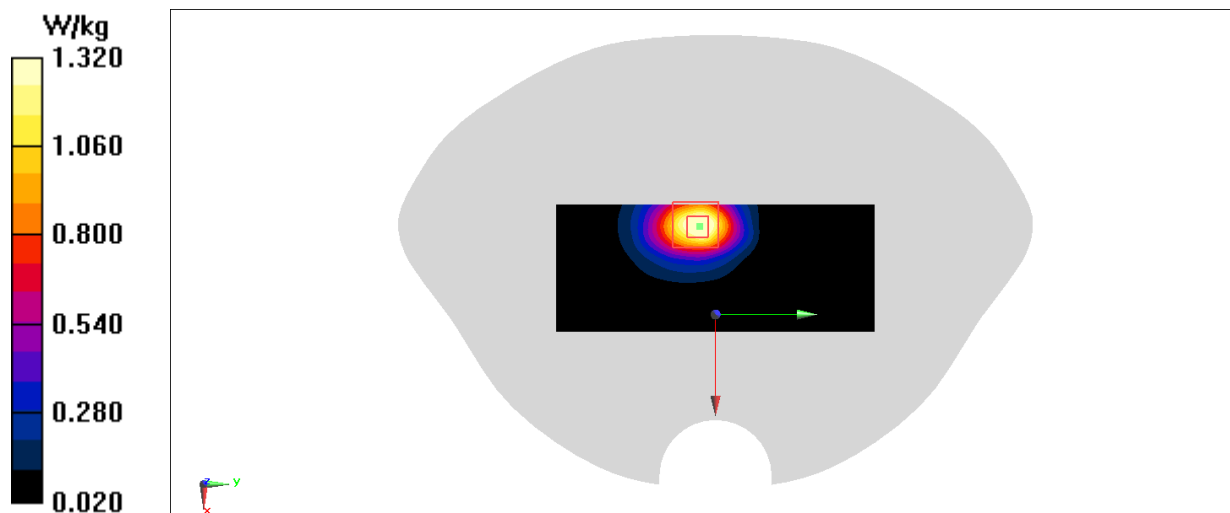


Fig A.35

### LTE700-FDD71\_CH133222 Left Cheek

Date: 9/15/2021

Electronics: DAE4 Sn1331

Medium: head 750 MHz

Medium parameters used:  $f = 673$  MHz;  $\sigma = 0.843$  S/m;  $\epsilon_r = 45.106$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE700-FDD71 673 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

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

Maximum value of SAR (interpolated) = 0.512 W/kg

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

Reference Value = 3.586 V/m; Power Drift = 0.20 dB

Peak SAR (extrapolated) = 0.733 W/kg

**SAR(1 g) = 0.387 W/kg; SAR(10 g) = 0.246 W/kg**

Maximum value of SAR (measured) = 0.582 W/kg

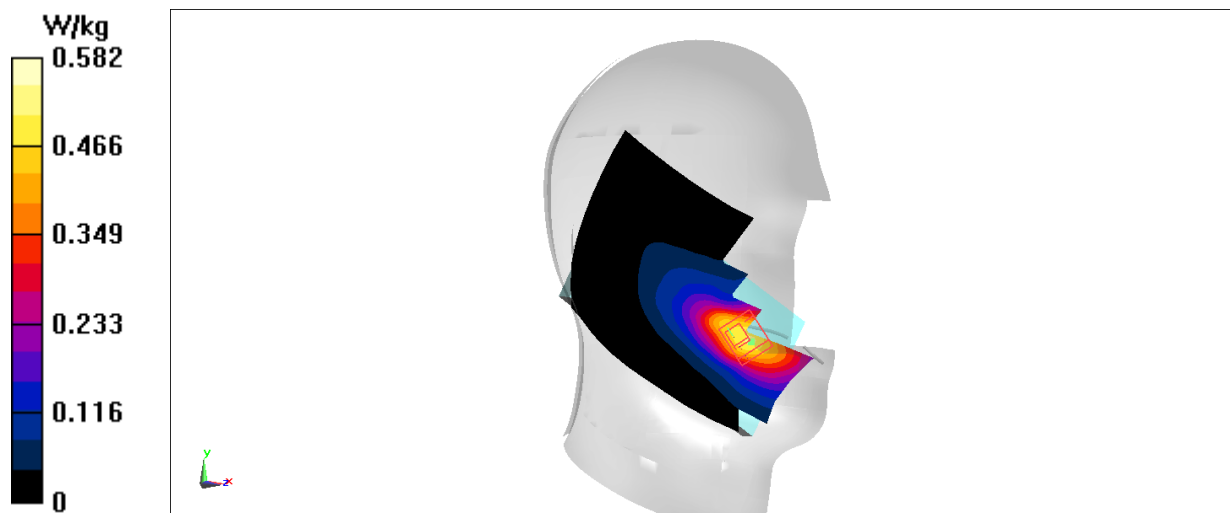


Fig A.36

# LTE700-FDD71\_CH133222 Rear unfold 10mm

Date: 9/15/2021

Electronics: DAE4 Sn1331

Medium: head 750 MHz

Medium parameters used:  $f = 673$  MHz;  $\sigma = 0.843$  S/m;  $\epsilon_r = 45.106$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: LTE700-FDD71 673 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

**Area Scan (71x131x1):** Interpolated grid:  $dx=1.500$  mm,  $dy=1.500$  mm

Maximum value of SAR (interpolated) = 0.577 W/kg

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

Reference Value = 19.90 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.707 W/kg

**SAR(1 g) = 0.476 W/kg; SAR(10 g) = 0.344 W/kg**

Maximum value of SAR (measured) = 0.610 W/kg

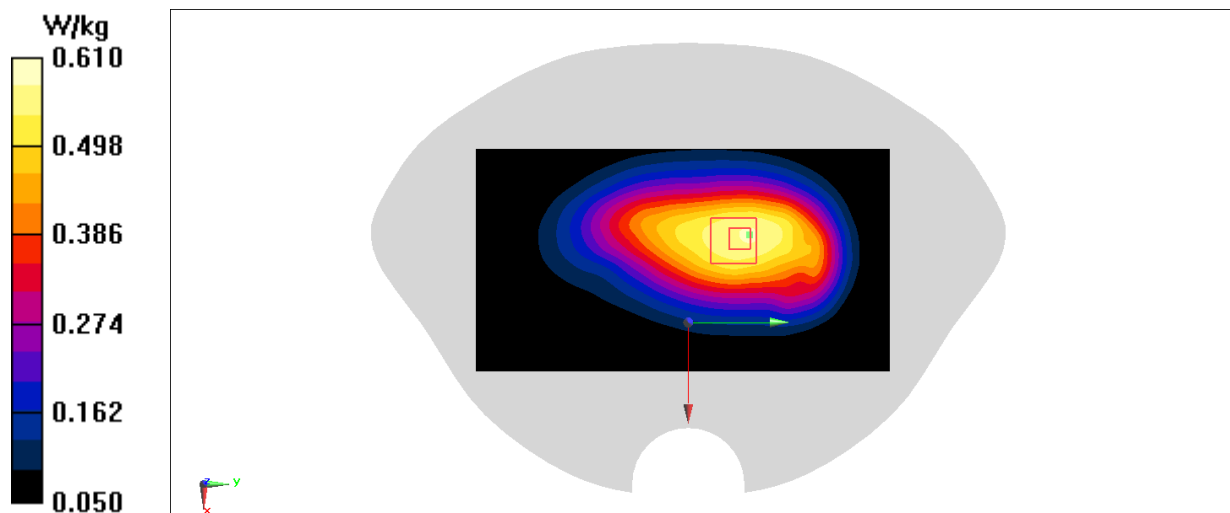


Fig A.37

### WLAN2450\_CH6 Left Cheek

Date: 9/19/2021

Electronics: DAE4 Sn1331

Medium: head 2450 MHz

Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.818$  S/m;  $\epsilon_r = 40.512$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WLAN2450 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.35,7.35,7.35)

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

Maximum value of SAR (interpolated) = 0.813 W/kg

**Zoom Scan (7x7x5)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 0 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.06 W/kg

**SAR(1 g) = 0.481 W/kg; SAR(10 g) = 0.208 W/kg**

Maximum value of SAR (measured) = 0.777 W/kg

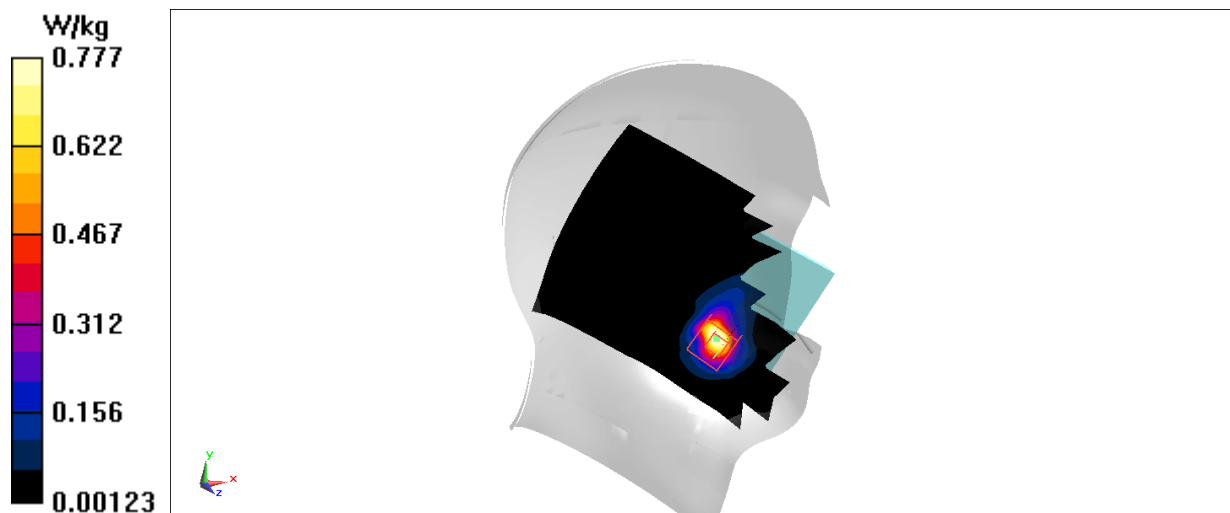


Fig A.38

### WLAN2450\_CH6 Rear 10mm

Date: 9/19/2021

Electronics: DAE4 Sn1331

Medium: head 2450 MHz

Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.818$  S/m;  $\epsilon_r = 40.512$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C

Communication System: WLAN2450 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(7.35,7.35,7.35)

**Area Scan (91x161x1):** Interpolated grid:  $dx=1.200$  mm,  $dy=1.200$  mm

Maximum value of SAR (interpolated) = 1.04 W/kg

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

Reference Value = 6.080 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 1.23 W/kg

**SAR(1 g) = 0.562 W/kg; SAR(10 g) = 0.250 W/kg**

Maximum value of SAR (measured) = 0.953 W/kg

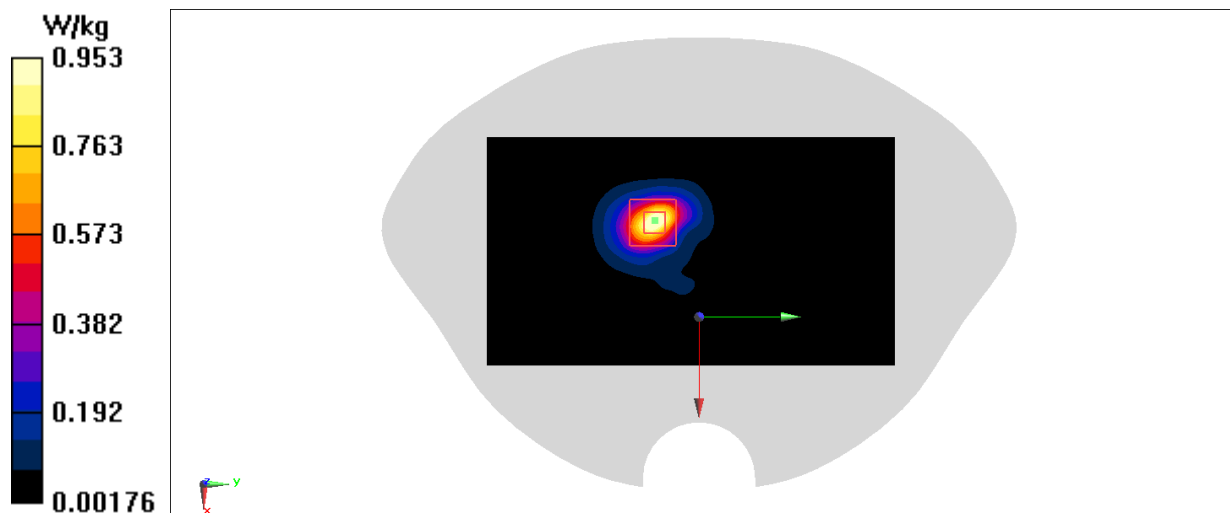
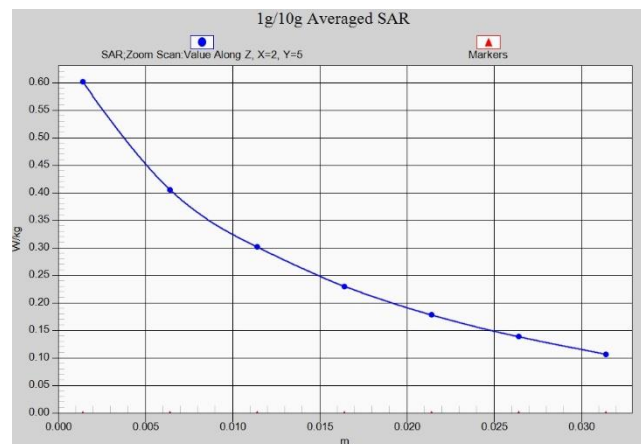
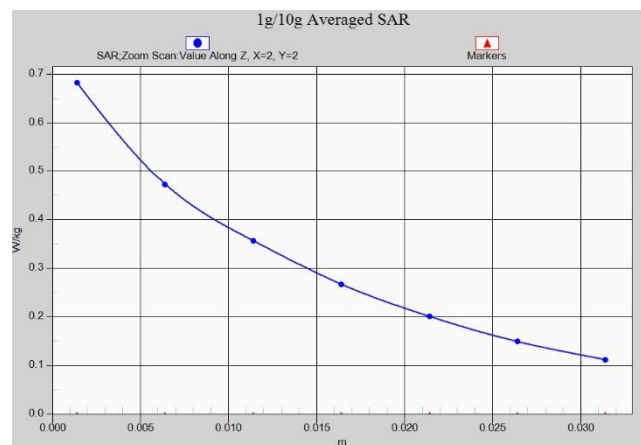


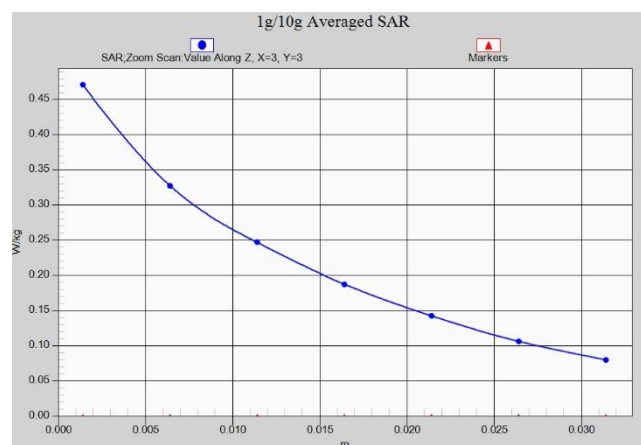
Fig A.39



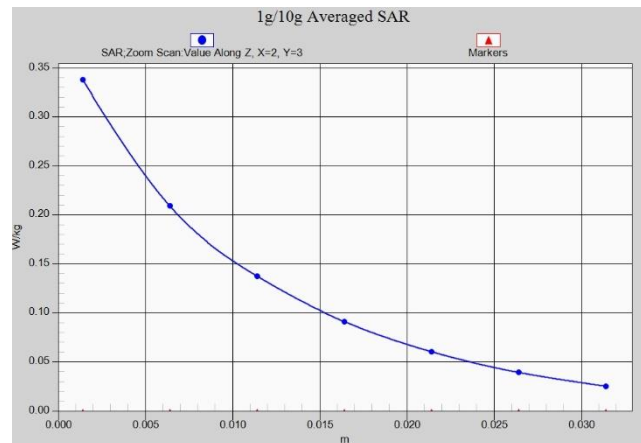
**Z-Scan at power reference point (GSM850)**



**Z-Scan at power reference point (GSM850)**



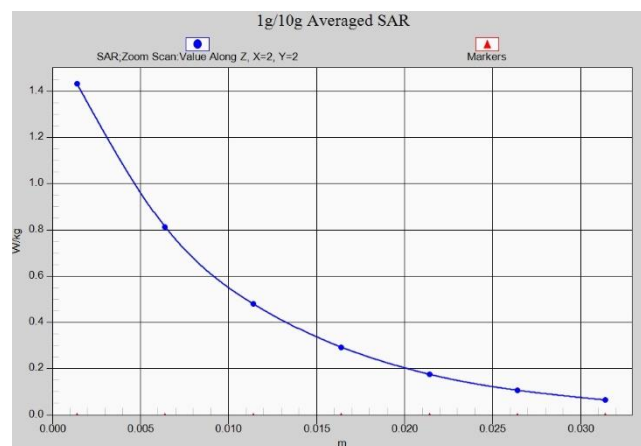
**Z-Scan at power reference point (GSM850)**



**Z-Scan at power reference point (GSM1900)**

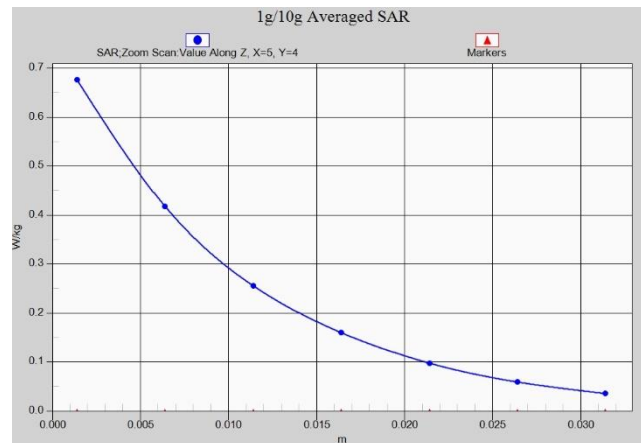


**Z-Scan at power reference point (GSM1900)**

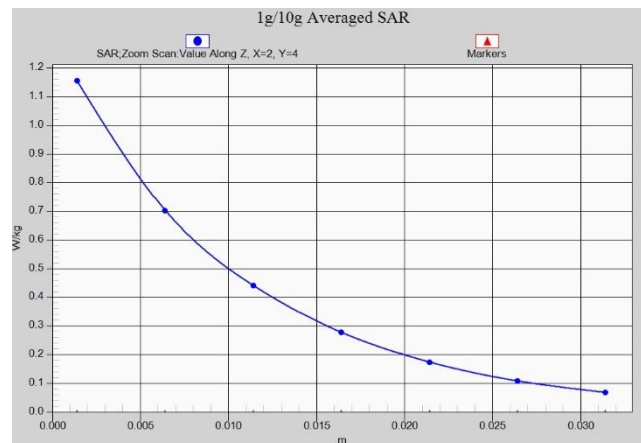


**Z-Scan at power reference point (GSM1900)**

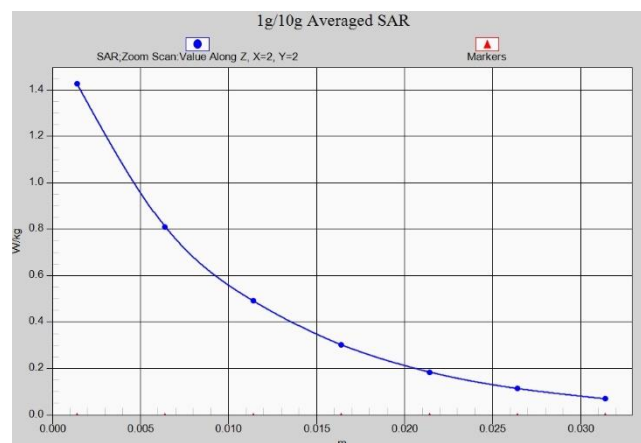




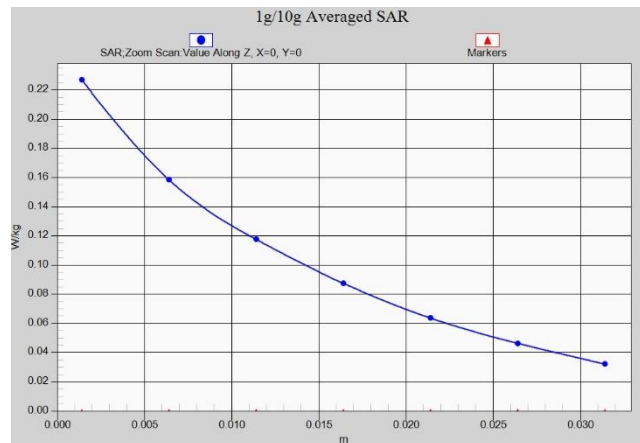
**Z-Scan at power reference point (WCDMA1900)**



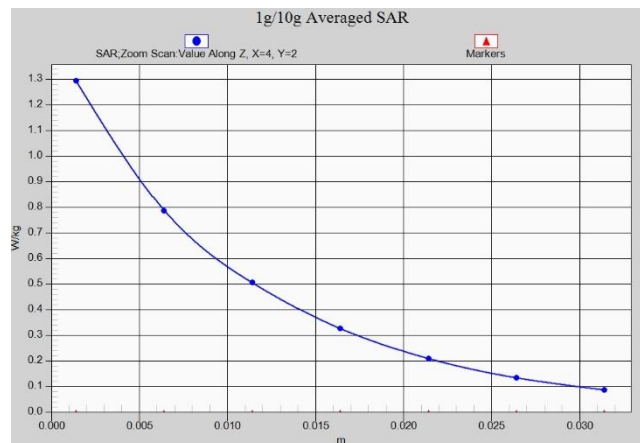
**Z-Scan at power reference point (WCDMA1900)**



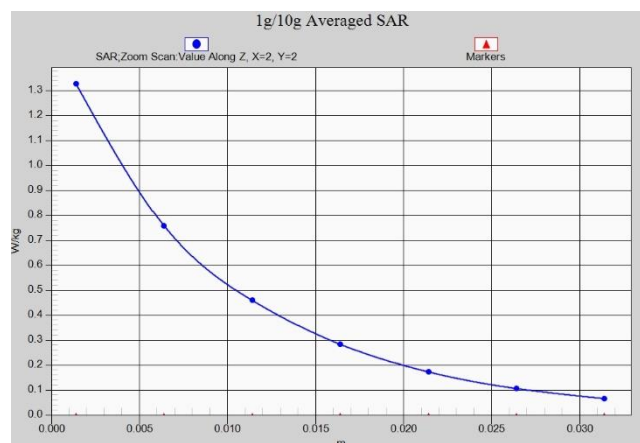
**Z-Scan at power reference point (WCDMA1900)**



**Z-Scan at power reference point (WCDMA1700)**



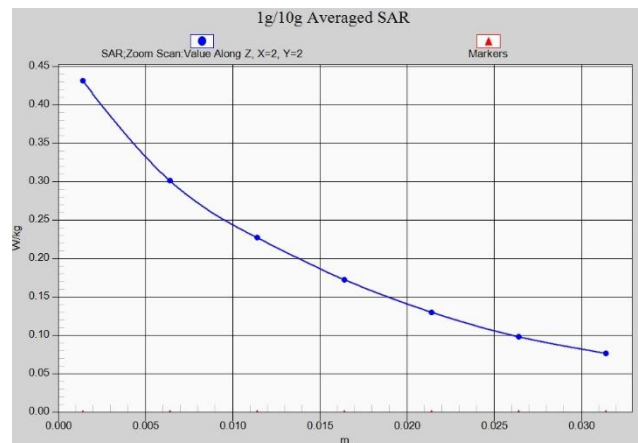
**Z-Scan at power reference point (WCDMA1700)**



**Z-Scan at power reference point (WCDMA1700)**



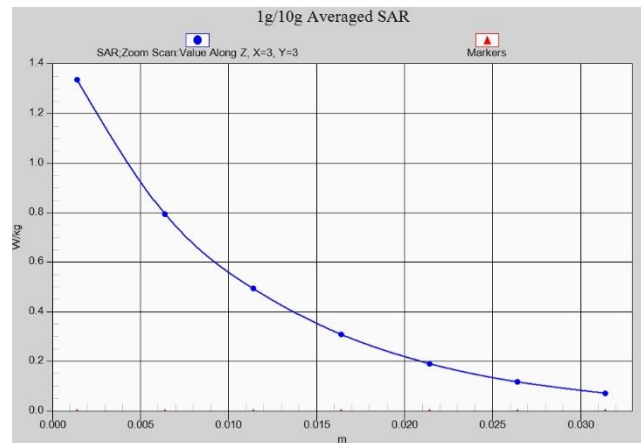
**Z-Scan at power reference point (WCDMA850)**



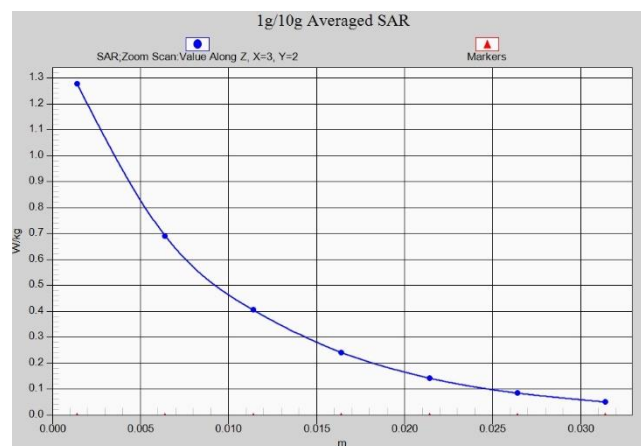
**Z-Scan at power reference point (WCDMA850)**



**Z-Scan at power reference point (LTEB2)**



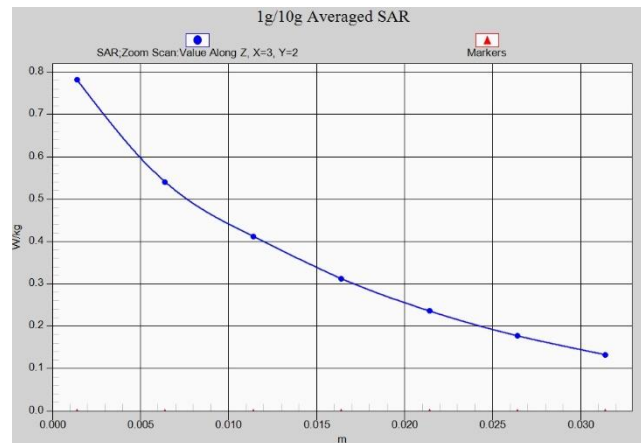
**Z-Scan at power reference point (LTEB2)**



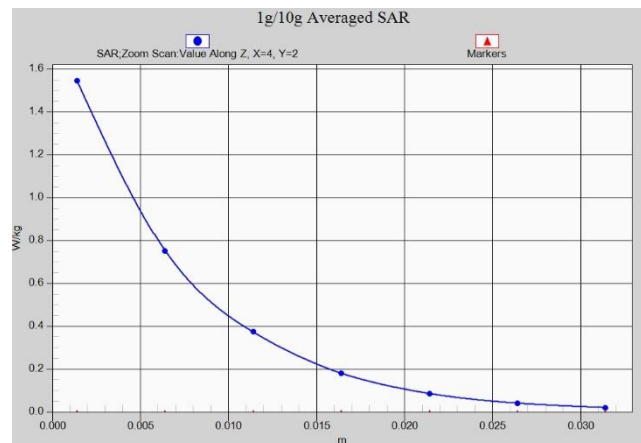
**Z-Scan at power reference point (LTEB2)**



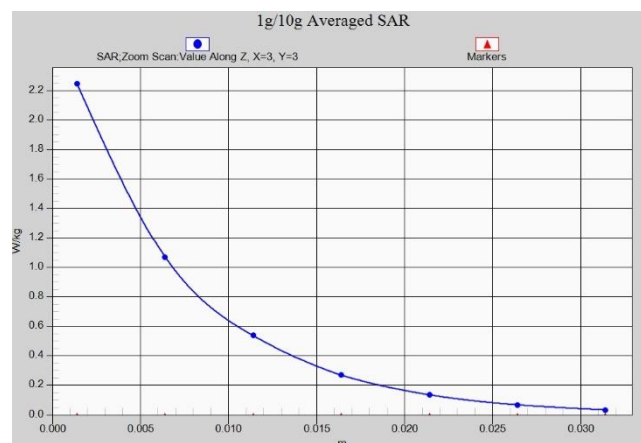
**Z-Scan at power reference point (LTEB5)**



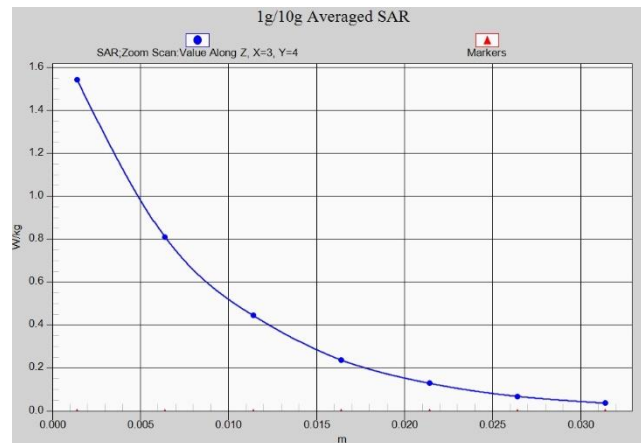
**Z-Scan at power reference point (LTEB5)**



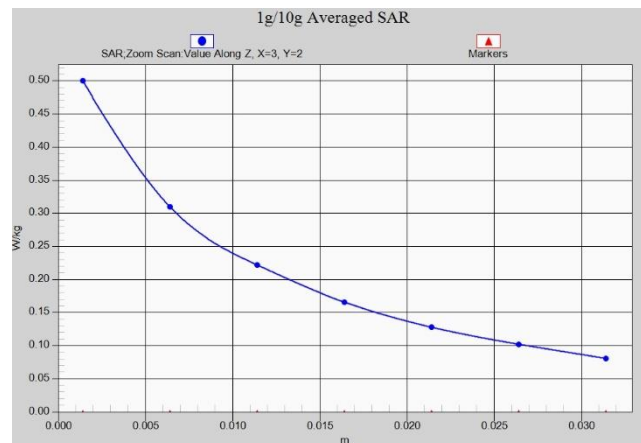
**Z-Scan at power reference point (LTEB7)**



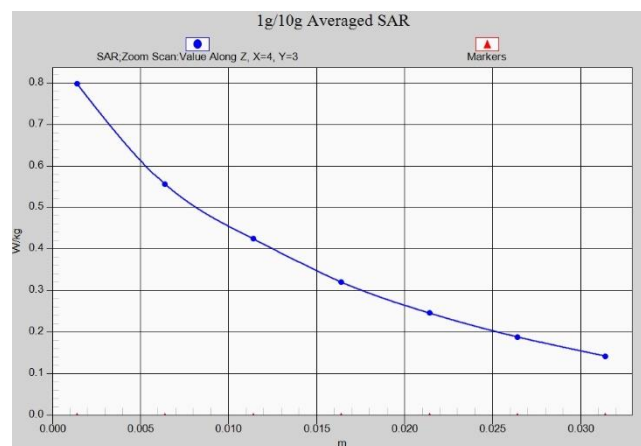
**Z-Scan at power reference point (LTEB7)**



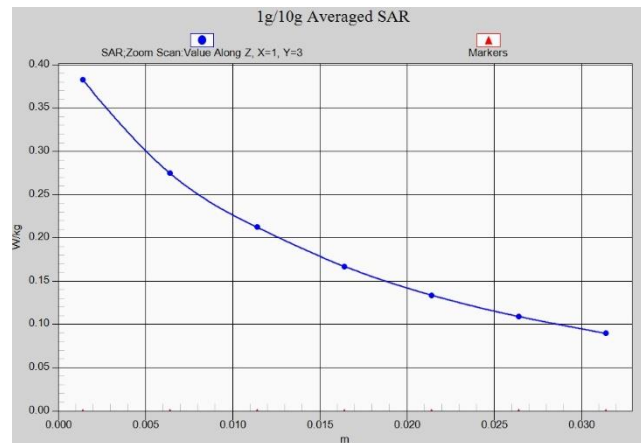
**Z-Scan at power reference point (LTEB7)**



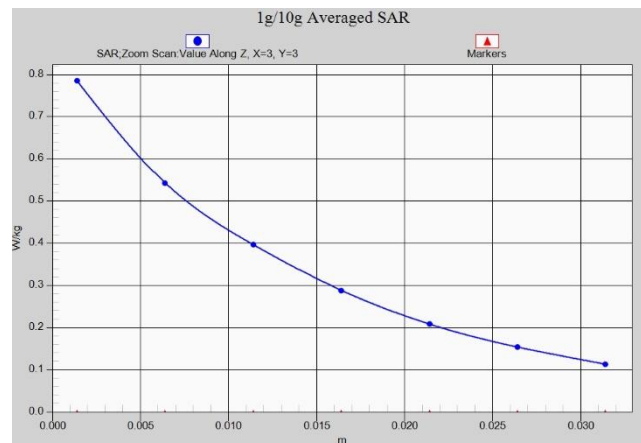
**Z-Scan at power reference point (LTEB12)**



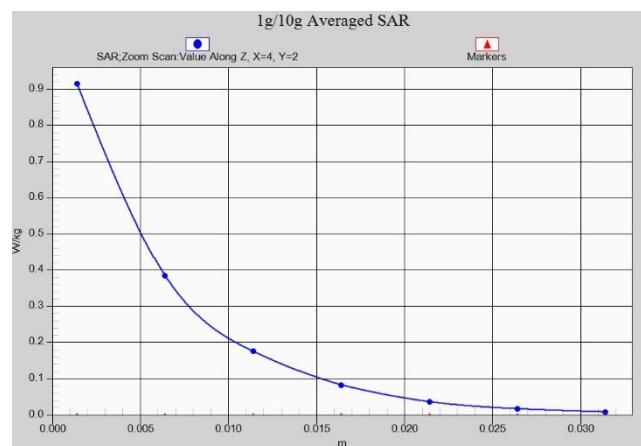
**Z-Scan at power reference point (LTEB12)**



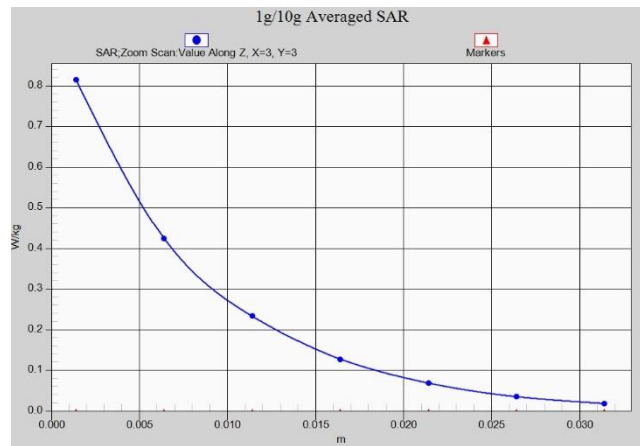
**Z-Scan at power reference point (LTEB13)**



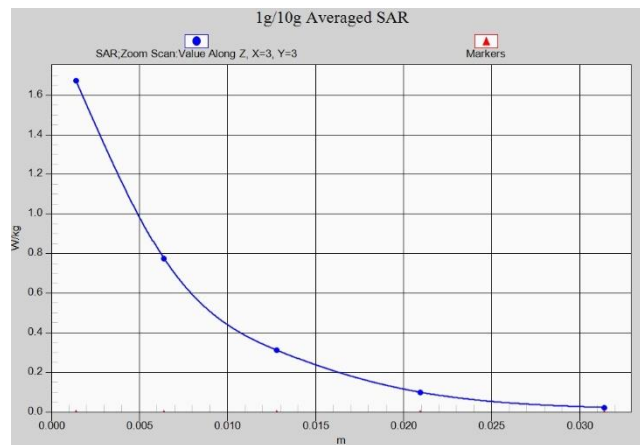
**Z-Scan at power reference point (LTEB13)**



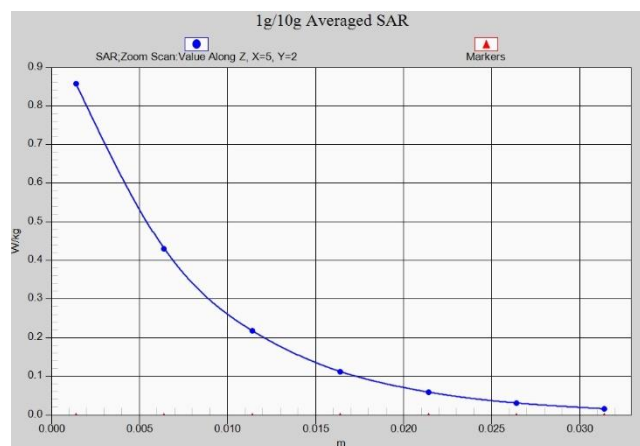
**Z-Scan at power reference point (LTEB41 PC3)**



**Z-Scan at power reference point (LTEB41 PC3)**

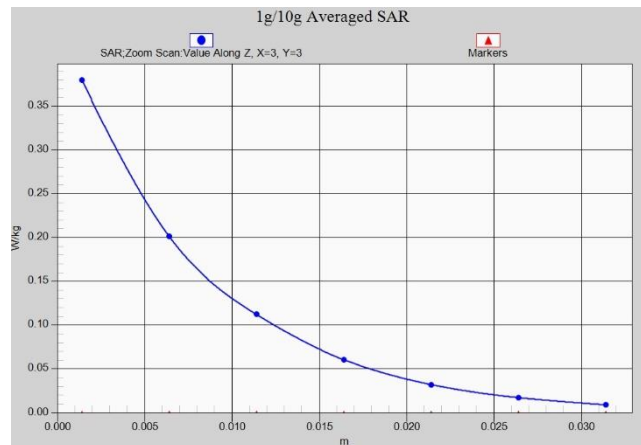


**Z-Scan at power reference point (LTEB41 PC3)**

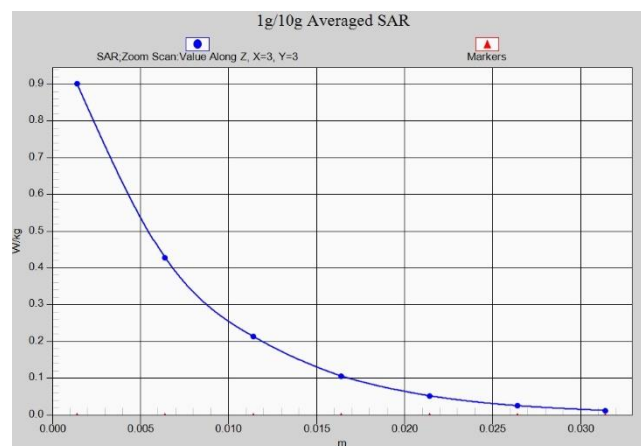


**Z-Scan at power reference point (LTEB41 PC2)**





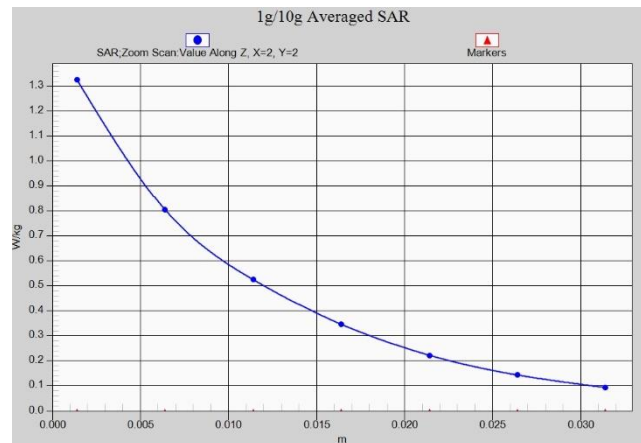
**Z-Scan at power reference point (LTEB41 PC2)**



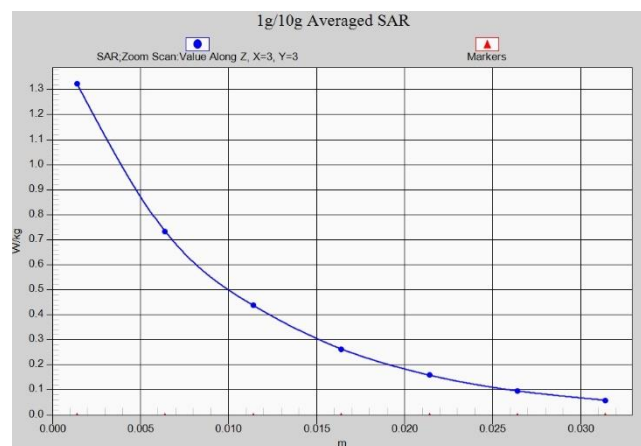
**Z-Scan at power reference point (LTEB41 PC2)**



**Z-Scan at power reference point (LTEB66)**



**Z-Scan at power reference point (LTEB66)**



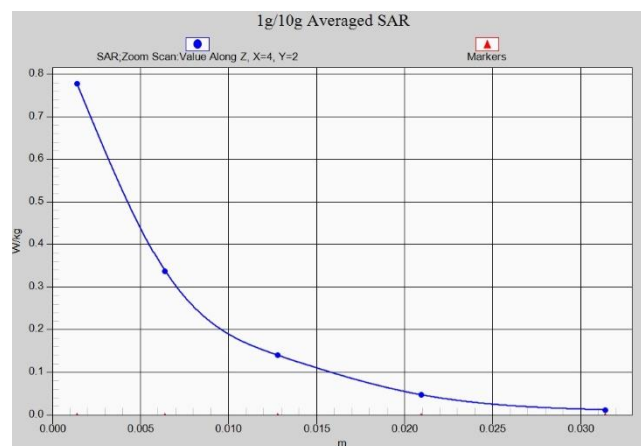
**Z-Scan at power reference point (LTEB66)**



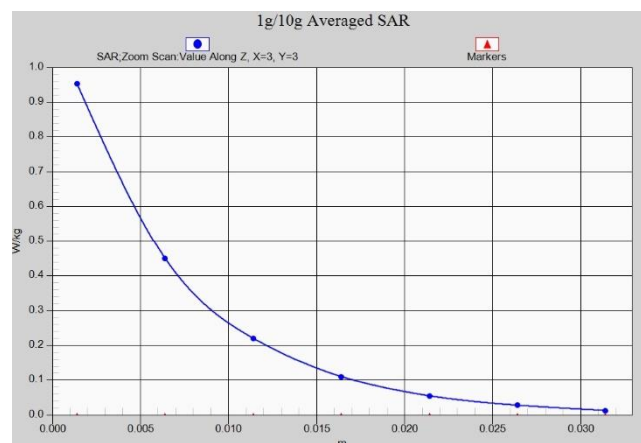
**Z-Scan at power reference point (LTEB71)**



**Z-Scan at power reference point (LTEB71)**



**Z-Scan at power reference point (WIFI2.4G)**



**Z-Scan at power reference point (WIFI2.4G)**

## ANNEX B System Verification Results

### 750 MHz

Date: 9/15/2021

Electronics: DAE4 Sn1331

Medium: Head 750 MHz

Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.8281 \text{ mho/m}$ ;  $\epsilon_r = 43.88$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

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

Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

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

Reference Value = 60.43 V/m; Power Drift = 0.02

**Fast SAR: SAR(1 g) = 2.08 W/kg; SAR(10 g) = 1.4 W/kg**

Maximum value of SAR (interpolated) = 2.78 W/kg

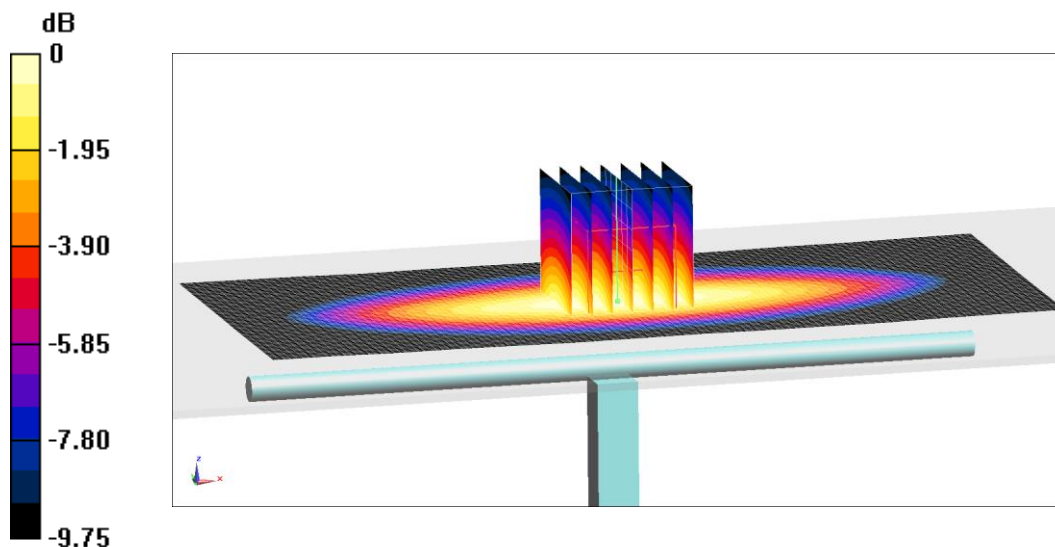
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 60.43 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 3.29 W/kg

**SAR(1 g) = 2.13 W/kg; SAR(10 g) = 1.42 W/kg**

Maximum value of SAR (measured) = 2.9 W/kg



0 dB = 2.9 W/kg = 4.62 dB W/kg

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